

INDEPENDENT CURRICULUM IMPLEMENTATION IN INDONESIA: STRATEGIES, CHALLENGES, AND LESSONS LEARNED

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ABSTRAK

Abstrak: Kurikulum Merdeka, inisiatif pendidikan transformatif di Indonesia, bertujuan untuk mengatasi kesenjangan pendidikan di wilayah perkotaan, pedesaan, dan 3T (tertinggal, terdepan, terluar). Penelitian ini bertujuan untuk menyelidiki secara sistematis strategi yang digunakan dalam penerapan kurikulum Independen dan hasilnya di seluruh wilayah perkotaan, pedesaan, dan perbatasan. Melalui pendekatan kualitatif dan metode studi kasus, penelitian ini mengumpulkan data melalui observasi, studi dokumen dan wawancara dengan pendidik dan pemangku kepentingan dari berbagai latar belakang. Hasil penelitian menunjukkan bahwa OJL adalah strategi paling efektif, meningkatkan kompetensi guru dan keterampilan mengajar praktis. Integrasi Teknologi meningkatkan keterlibatan siswa di perkotaan, tetapi terkendala infrastruktur di wilayah terpencil. Keterlibatan Komunitas memastikan relevansi kurikulum dan membangun kepercayaan lokal, terutama di wilayah 3T. Adaptasi Geografis mengatasi tantangan logistik dengan menyesuaikan kurikulum untuk kebutuhan regional, sedangkan Integrasi Kebijakan menyelaraskan prioritas nasional dengan implementasi lokal meskipun menghadapi kendala birokrasi. Temuan ini menekankan perlunya kombinasi solusi sistemik yang skalabel dengan adaptasi lokal untuk mencapai hasil pendidikan yang adil dan berkelanjutan. Kurikulum Merdeka menawarkan model reformasi pendidikan yang dapat direplikasi secara global, menunjukkan bagaimana strategi yang terfokus dapat mengurangi kesenjangan dan meningkatkan hasil pembelajaran.

Abstract: *The Independent Curriculum, a transformative educational initiative in Indonesia, aims to address educational disparities across urban, rural, and frontier regions. This study aims to systematically investigate the strategies employed in the implementation of Independent curriculum and their outcomes across urban, rural, and frontiers regions. Using a qualitative approach and case study methods, the research collected data through observations, document analysis, and interviews with educators and stakeholders from diverse backgrounds. The findings reveal that OJL is the most effective strategy, enhancing teacher competence and practical teaching skills. Technology Integration increased student engagement in urban areas but faced infrastructural limitations in remote regions. Community Engagement ensured curriculum relevance and built local trust, particularly in frontier areas. Geographic Adaptations addressed logistical challenges by tailoring the curriculum to regional needs, while Policy Integration aligned national priorities with local implementation despite bureaucratic obstacles. These findings highlight the need for a combination of scalable systemic solutions and localized adaptations to achieve equitable and sustainable educational outcomes. The Independent Curriculum offers a replicable model for global educational reform, demonstrating how targeted strategies can reduce disparities and improve learning outcomes.*

A. BACKGROUND

Educational reform is widely acknowledged as an indispensable driver of sustainable development, particularly in nations characterized by extensive socio-geographical diversity. For example, UNESCO underscores that countries with pronounced regional disparities must implement tailored

educational strategies to bridge gaps in access and quality, emphasizing the crucial role of adaptive reforms in addressing diverse educational contexts (Webb et al., 2015). Indonesia, an expansive archipelago comprising over 17,000 islands, epitomizes such complexities as it endeavors to harmonize its education system with global standards while addressing localized needs. The

introduction of Independent Curriculum marks a significant policy shift, replacing a rigid, standardized curriculum with a flexible, student-centered framework (Anggini et al., 2024; Musa et al., 2023; Muslimah et al., 2023). This approach reflects global trends in education that prioritize adaptability, personalized learning, and competency-based methodologies, aiming to prepare learners for the multifaceted challenges of the 21st century (Nurhayati, Dina, et al., 2024; Nurhayati & Novianti, 2024). Furthermore, the reform emphasizes teacher autonomy, differentiated instruction, and critical thinking development, aligning with Indonesia's commitment to the Sustainable Development Goals (SDGs), particularly those advocating for equitable and quality education.

Global scholarship on curriculum reform highlights the critical importance of contextual adaptability in ensuring successful implementation. Contextual adaptability refers to the capacity of educational strategies to be tailored and aligned with the unique socio-cultural, economic, and geographical conditions of specific regions (Green et al., 2020). This entails addressing local challenges, leveraging community resources, and integrating culturally relevant practices to ensure reforms are both effective and equitable. Comparative studies from countries such as Finland and Singapore demonstrate how context-sensitive curriculum strategies yield substantial improvements in diverse educational settings (Meilasari et al., 2023). However, these successes are often predicated on robust infrastructure, comprehensive teacher training, and cohesive policy frameworks—conditions that remain unevenly distributed across many developing nations, including Indonesia (Musa et al., 2024; Nurhayati & Lahagu, 2024; Rahmat et al., 2024). Given the socio-economic disparities and geographical diversity of Indonesia's educational landscape—spanning urban hubs, rural areas, and frontier regions—the implementation of Independent Curriculum demands careful examination to ensure its relevance and efficacy.

Despite its transformative potential, the implementation of Independent Curriculum is impeded by systemic barriers that compromise its effectiveness. These barriers include inadequate infrastructure, such as limited access to reliable internet and teaching materials; insufficient teacher

readiness resulting from gaps in professional development; and pervasive socio-economic inequalities that exacerbate disparities in educational resources and opportunities (Nurfadila et al., 2023; Soleha & Mujahid, 2024). These challenges are further complicated by Indonesia's geographical and cultural diversity, necessitating context-sensitive solutions that balance national educational objectives with regional realities (Qudsi & Nurhayati, 2023; Susanti & Nurhayati, 2024).

Existing literature on curriculum reform provides valuable insights into potential solutions but often lacks specificity regarding the unique challenges associated with Independent Curriculum in Indonesia. For example, studies by UNESCO (2018) and Darling-Hammond et al. (2017) highlight the necessity of contextualized strategies for curriculum implementation but do not address the complex socio-geographical factors unique to Indonesia. Research from other developing nations illustrates the efficacy of approaches such as on-the-job learning (OJL) and structured coaching frameworks in enhancing teacher competence and instructional quality. Similarly, the integration of technology into educational practices has demonstrated significant promise in bridging learning gaps, provided that sufficient infrastructural and technical support is available. These findings underscore the importance of strategies that are evidence-based and attuned to the specific needs and capacities of Indonesian educators and learners.

Localized studies further underscore the pivotal role of community engagement and cross-school collaboration in fostering educational innovation, particularly in underserved regions. For instance, initiatives such as the "Sekolah Penggerak" program have demonstrated success in establishing localized networks of educators to share resources and best practices. Similarly, community-led projects in rural regions have effectively incorporated local cultural knowledge into the curriculum, thereby enhancing both engagement and learning outcomes. These examples highlight the transformative potential of context-sensitive strategies in addressing the unique challenges faced by underserved areas. Programs that actively involve parents, local leaders, and community organizations in the curriculum development process have been particularly successful in enhancing cultural relevance and

fostering stakeholder investment. Cross-school partnerships have also facilitated resource sharing and the dissemination of best practices, mitigating disparities in educational quality. However, these initiatives often face challenges such as inconsistent participation, logistical constraints, and limited scalability, necessitating further investigation into their long-term viability and adaptability.

The implementation of Independent Curriculum thus represents both an opportunity and a challenge for Indonesia's education system. While existing research provides insights into potential strategies and their associated outcomes, substantial gaps remain in empirical evidence, particularly in assessing the effectiveness of these strategies across Indonesia's diverse socio-geographical contexts. These gaps highlight the critical need for research that not only identifies effective practices but also examines the conditions under which these practices can be adapted, replicated, and scaled sustainably.

This study aims to address these gaps by systematically investigating the strategies employed in the implementation of Independent curriculum and their outcomes across urban, rural, and frontiers regions. By analyzing the effectiveness, adaptability, and challenges of these strategies, this research seeks to provide actionable, evidence-based recommendations for policymakers, educators, and other stakeholders. The study's novelty lies in its emphasis on context-sensitive solutions, contributing to the broader discourse on educational reform in diverse socio-geographical settings. Ultimately, the findings of this research will offer critical insights into optimizing independent curriculum to enhance educational equity and quality throughout Indonesia.

B. METHOD

This research employed a qualitative case study methodology to provide an in-depth understanding of the independent curriculum implementation in Indonesia. The approach is grounded in a constructivist paradigm, which emphasizes the co-construction of knowledge through the perspectives and lived experiences of participants (Iswahyudi et al., 2023). The case study design was chosen due to its effectiveness in capturing complex phenomena within real-life context. By focusing on 20 educators and education supervisors. This selection was

strategically made to ensure a comprehensive representation of diverse perspectives and contexts in curriculum implementation across Indonesia. The informants were chosen based on their active involvement in the pilot and early phases of the curriculum reform, as well as their roles as change agents in their respective institutions. The selection criteria emphasized geographical diversity, varying levels of professional experience, and active participation in education policy dialogues, as these factors are critical for capturing a holistic understanding of the curriculum's practical challenges and successes. Supervisors from diverse regions across Indonesia, this study provides a nuanced exploration of strategies, challenges, and outcomes associated with the curriculum reform.

Data collection combined semi-structured interviews and document analysis. Semi-structured interviews were conducted to elicit detailed narratives from informants regarding their experiences, strategies, and perceived barriers during the curriculum implementation. The questions were designed to explore key aspects of policy enactment, instructional changes, and the integration of local contexts, which emphasize the role of educators in translating curriculum policies into practice. Each interview lasted between 60 to 90 minutes and was audio-recorded with participants' consent. The recordings were transcribed verbatim to preserve the authenticity of responses and ensure a rigorous analysis process.

In addition to interviews, document analysis was utilized to triangulate findings and enrich the contextual understanding of the curriculum implementation. Documents analyzed included policy briefs, school implementation plans, training manuals, and reports provided by local education authorities. These sources offered insights into the structural and procedural dimensions of the curriculum reform. The document analysis focused on identifying patterns, discrepancies, and alignment with interview data (Nurhayati, Kurnianta, et al., 2024).

To ensure the credibility and trustworthiness of the findings, multiple strategies were employed. Triangulation of data from interviews and documents helped validate the consistency of themes and reduce potential biases. Peer debriefing sessions with independent experts in education

policy and curriculum design were conducted to refine the coding and thematic analysis processes. Member checking further enhanced the study's validity by allowing participants to review and confirm the accuracy of their responses and preliminary interpretations. Data analysis followed the thematic analysis framework outlined by Braun and Clarke (2006), involving a systematic process of familiarization, coding, and theme development. The initial stage involved immersing in the data through repeated readings of transcripts and field notes. Codes were generated inductively to capture key features of the data relevant to the research questions. These codes were then grouped into broader categories, which were refined iteratively to identify overarching themes.

C. RESULTS AND DISCUSSIONS

1. On-the-Job Learning (OJL) and Peer Mentoring

On-the-Job Learning (OJL) and peer mentoring emerged as pivotal strategies for enhancing teacher competence and fostering professional collaboration. These approaches allowed educators to observe, practice, and refine instructional methods in real classroom settings, bridging the gap between theoretical knowledge and practical application. Educators involved in OJL programs emphasized the transformative nature of this approach, which equipped them with hands-on skills to address the challenges of modern teaching.

The effectiveness of OJL was particularly evident in its capacity to develop practical teaching skills. Teachers described OJL as a valuable opportunity to witness best practices in action and adapt them to their own contexts. One participant shared, "Seeing a real-life example of a text-rich classroom inspired me to implement similar strategies in my school." This exposure to effective teaching methods not only built confidence but also provided educators with actionable ideas to improve student outcomes. Peer mentoring complemented OJL by offering a supportive learning environment where less experienced teachers could benefit from the guidance of their more seasoned peers. As one participant explained, "Having a mentor who has

faced similar challenges made the process of learning and adapting much easier."

Another significant impact of OJL was the cultural shift it encouraged within schools. By observing innovative approaches in high-performing schools, educators were motivated to rethink and enhance their teaching practices. One participant remarked, "We realized the importance of integrating literacy activities into our daily routines to engage students more effectively." This shift in mindset led to the creation of text-rich environments and the implementation of interactive learning techniques, both of which had a positive impact on student engagement and achievement.

However, implementing OJL presented several challenges, particularly in remote and underserved regions. Logistical barriers, such as difficult travel conditions and lengthy commutes to host schools, often deterred participation. One teacher described the difficulties, stating, "Traveling several hours to a peer school is exhausting, but the insights gained are worth every effort." Additionally, not all host schools were adequately equipped to serve as effective learning sites, which sometimes limited the quality of the experience.

Despite these challenges, OJL proved to be a highly adaptable and impactful strategy. In regions where access to formal professional development programs was limited, OJL offered an accessible and effective alternative. Schools that participated in OJL programs reported significant improvements in their classroom environments and teaching practices. One supervisor observed, "The changes we see in our teachers' confidence and competence are remarkable; they now approach their lessons with creativity and enthusiasm."

To ensure the sustainability and scalability of OJL, systemic support is needed to address logistical and resource-related challenges. Providing transportation subsidies, enhancing the infrastructure of host schools, and fostering stronger institutional coordination can expand the reach of OJL programs to more educators and schools. Such measures would ensure that the benefits of OJL are equitably distributed across diverse educational contexts. OJL and peer

mentoring have proven to be effective strategies for improving teacher competence and fostering a culture of collaboration. These approaches empower educators with practical skills, inspire innovative teaching practices, and strengthen professional networks. As one participant aptly summarized, "OJL has taught us that growth is a continuous journey—for both teachers and students." With sustained support and thoughtful implementation, OJL can serve as a cornerstone for educational reform and capacity building in Indonesia.

This study underscores the critical role of On-the-Job Learning (OJL) and peer mentoring in enhancing teacher competency and fostering professional collaboration within educational ecosystems. This research reaffirms the indispensable value of experiential learning as a vehicle for translating theory into actionable practice. By embedding learning within real-world contexts, OJL operationalizes Kolb's experiential learning theory, ensuring deeper cognitive processing, knowledge assimilation, and skill acquisition (Anugrahwanto & Nurhayati, 2020; Nurhayati, 2018; Sarah & Nurhayati, 2024). The alignment of these practices with situated learning principles amplifies their relevance in bridging the gap between theoretical constructs and practical application. Additionally, OJL facilitates the development of context-specific strategies that empower educators to address unique classroom challenges effectively, thereby enhancing instructional quality and student engagement (Musa, Nurhayati, & Zubaedah, 2022; Nurhayati, Fitri, et al., 2024).

The challenges in implementing OJL—notably logistical issues in underserved areas—highlight systemic inequities that resonate with analysis of rural education disparities. Educators in remote regions often encounter prohibitive transportation costs, inadequate infrastructure, and limited institutional support, which collectively hinder participation (Musa et al., 2024; Musa, Nurhayati, Jabar, et al., 2022; Musa & Nurhayati, 2024). Such challenges illuminate broader issues of access and equity within professional development programs. However, the study's findings reveal that OJL fosters transformative learning experiences, equipping

teachers to navigate diverse pedagogical challenges with enhanced efficacy. Additionally, peer mentoring catalyzes professional growth through reflective dialogue and collaborative problem-solving and proven advocacy for mentorship as a cornerstone of teacher development (Nurhayati, Tersta, et al., 2024; Sibanda & Amin, 2021).

2. Technology Integration in Teaching

Technology emerged as a critical enabler in the implementation of Independent Curriculum, providing innovative solutions to enhance teaching and learning processes. Tools such as PowerPoint with ClassPoint integration and platforms like Merdeka Mengajar were highlighted as transformative in lesson planning and delivery. Educators emphasized how these tools fostered interactive and engaging classroom environments, leading to improved learning outcomes.

One teacher shared, "ClassPoint changed the dynamic of my classroom. Students became more excited to participate because they could interact with the lessons directly." This sentiment was echoed by another educator who noted that Merdeka Mengajar provided access to curated, curriculum-aligned resources, saving preparation time and ensuring consistency in instructional quality. "Having ready-to-use modules on Merdeka Mengajar makes planning easier, especially for teachers with limited time or resources," the teacher explained. These tools not only improved classroom experiences but also contributed to professional growth by boosting teachers' confidence in using technology for pedagogical purposes.

The effectiveness of technology integration was evident in three key areas. First, interactive lessons significantly increased student engagement. Teachers reported that students were more attentive and willing to participate when lessons involved interactive elements, such as quizzes and multimedia presentations. Second, access to platforms like Merdeka Mengajar enabled educators to tailor their lessons to meet specific curriculum goals while accommodating diverse student needs. Lastly, the experience of using IT tools enhanced professional development for educators. One supervisor remarked, "Teachers who were initially hesitant to use technology are now embracing it as a core part of their teaching strategy."

Despite these benefits, challenges remained, particularly in rural and frontier regions. Limited

infrastructure, including unreliable internet access and insufficient devices, hindered the widespread adoption of technology. “We want to use these tools, but without stable electricity or internet, it becomes very difficult,” explained a teacher from a remote school. These gaps disproportionately affected schools in underserved areas, creating inequities in access to the benefits of technology integration.

In addition to infrastructure limitations, capacity building emerged as a significant need. Many teachers required additional training to effectively utilize IT tools in their classrooms. “Some of us are not familiar with these platforms, and without proper training, it’s challenging to integrate them into our teaching,” noted one participant. The lack of structured professional development programs left some educators feeling unprepared to fully embrace technology in their pedagogical practices.

The integration of technology in Independent Curriculum emerges as a pivotal enabler of instructional innovation and learner engagement. This study aligns with previous researches, which underscore the transformative potential of digital tools in enhancing pedagogical delivery (Iskandar et al., 2023; Milyane et al., 2023; Nurhayati, Hidayat, et al., 2023; Sulkipani et al., 2024). Specifically, platforms such as ClassPoint and Merdeka Mengajar embody multimedia learning principles, leveraging interactivity and multimodality to enhance student cognition, retention, and participation. The ability of these tools to adapt to diverse learner profiles reinforces their role in promoting inclusivity and differentiated instruction (Ghofur & Nurhayati, 2023b, 2023a; Gondiawati & Nurhayati, 2024). Moreover, their application extends beyond immediate instructional benefits, as they also serve as catalysts for teacher self-efficacy and professional growth in integrating technology into pedagogy.

Persistent infrastructural deficits, however, illuminate the pervasive digital divide. Limited access to devices and unstable internet connectivity continue to undermine equitable adoption, particularly in rural and frontier regions (Setiadi et al., 2023; Susanti & Nurhayati, 2024). These systemic barriers necessitate targeted investments in technological infrastructure and comprehensive professional development programs. Furthermore, educators’ shifting attitudes toward digital pedagogies echo the research findings that sustained technology integration requires a dual emphasis on technical proficiency and pedagogical adaptability (Marsegi

et al., 2023; Nurhayati & Novianti, 2024; Nuryanti et al., 2024; Winarti et al., 2022). By equipping teachers with the skills to leverage technology effectively, schools can create dynamic learning environments that reflect the evolving demands of 21st-century education. The study also highlights the importance of policy-level interventions to address systemic inequities and foster an enabling environment for technology-driven transformation.

3. Coaching and Mentoring

Structured coaching and mentoring frameworks emerged as vital strategies for addressing challenges in the implementation of Independent Curriculum. These frameworks provided targeted support to educators, empowering them to navigate the complexities of the curriculum and address specific pain points in teaching and school management. Supervisors, through consistent engagement with school leaders and teachers, played a pivotal role in fostering improvement and ensuring sustainability.

One supervisor described their approach: “By coaching school leaders, I helped them identify the unique challenges in their schools. This understanding allowed us to develop specific, actionable solutions that teachers could implement in the classroom.” This targeted support proved invaluable, particularly in schools where educators were initially unfamiliar with the expectations of Independent Curriculum. For instance, many teachers reported struggling with differentiated instruction. Through mentoring, they received tailored guidance, enabling them to adapt their teaching methods to better meet the needs of their students.

Coaching sessions also encouraged reflective practices among educators, fostering a culture of self-evaluation and growth. One informant noted, “Coaching isn’t just about giving answers; it’s about helping teachers and school leaders reflect on their actions and find their own solutions.” This reflective approach empowered educators to critically analyze their strategies, leading to sustained improvements in teaching quality. Over time, teachers began to view reflection as a regular part of their professional development, contributing to a broader culture of continuous improvement within their schools.

However, the implementation of coaching and mentoring frameworks was not without challenges. A recurring issue highlighted in the by the informants was the limited availability of skilled mentors, particularly in remote or

underserved areas. As one supervisor explained, “There are simply not enough trained mentors to meet the needs of all the schools, especially in isolated regions. This creates gaps in support.” This scarcity often left some educators without the guidance they needed, especially during the initial stages of Independent Curriculum implementation.

Time constraints for both mentors and mentees also posed a significant barrier. Many supervisors juggled multiple responsibilities, limiting the time they could dedicate to one-on-one mentoring. Similarly, teachers often struggled to balance mentoring sessions with their classroom duties. One participant shared, “We want to make time for mentoring, but our daily workload is overwhelming. It’s hard to give it the attention it deserves.” This highlights the need for systemic solutions to alleviate time pressures, such as allocating dedicated time for professional development within the school schedule.

Structured coaching and mentoring frameworks have proven integral to navigating the complexities of Independent Curriculum implementation. Consistent with previous research on instructional coaching model, this study highlights the synergistic interplay of individualized support and reflective practices in fostering pedagogical transformation. Coaching’s emphasis on critical self-assessment aligns with the concept of the reflective practitioner, underscoring its capacity to drive sustained professional growth (Cushion, 2018). By embedding reflective practices into coaching frameworks, educators are empowered to critically evaluate and refine their instructional methodologies, resulting in more adaptive and effective teaching practices (Hoffman & Duffy, 2016; Varghese et al., 2023).

The systemic challenges confronting these frameworks—including a shortage of qualified mentors and competing professional demands—underscore the need for institutional recalibration. Embedding coaching sessions within school schedules and integrating hybrid mentorship models that leverage digital platforms can address geographic and logistical barriers. Furthermore, coaching fosters collaborative inquiry and adaptive problem-solving, positioning educators to navigate curricular demands with resilience and innovation (Nurhayati & Lahagu, 2024). These findings reaffirm the transformative potential of mentorship in cultivating reflective, adaptive, and effective educators. Additionally, the institutionalization of mentoring as a core

component of teacher development programs could serve as a powerful mechanism for enhancing instructional quality and ensuring alignment with broader educational objectives.

4. Collaborative Professional Development

Collaborative professional development emerged as a highly effective strategy for enhancing teacher capacity and fostering a culture of continuous learning. Through initiatives like Teacher Working Group and Principal Working Group, educators came together to share experiences, address challenges, and develop practical solutions. These forums proved invaluable in providing a structured platform for open dialogue and peer learning, especially in regions where access to formal training was limited.

One participant described these forums as “a space where we can openly discuss our struggles and find solutions together. Hearing how others overcame similar challenges gave me ideas I could apply in my own classroom.” This process of knowledge sharing enabled teachers to exchange practical advice and learn from the successes of their peers. For example, educators who excelled in implementing Independent Curriculum shared strategies for designing lesson plans and integrating student-centered approaches, which were later adopted by others in the group.

The collaborative nature of these forums also facilitated collective problem-solving. Teachers reported that group discussions allowed them to identify common challenges and brainstorm practical strategies for overcoming them. As one participant noted, “In our principal working group meeting, we collectively developed a plan to address low literacy levels in our schools by pooling resources and creating a shared library.” Such cooperative efforts exemplify the potential of collaboration to drive meaningful, localized solutions.

Despite their effectiveness, collaborative professional development initiatives encountered notable challenges. One recurring issue was irregular participation due to logistical and scheduling difficulties. In some areas, teachers were unable to attend sessions consistently because of long travel distances or conflicts with other responsibilities. “It’s hard to make it to every meeting when my school is two hours away, and the roads are often impassable during the rainy season,” a teacher explained.

Another challenge was the need for stronger facilitation to ensure the quality and consistency

of discussions. While most forums were productive, some participants felt that the lack of trained moderators occasionally led to unfocused or repetitive conversations. "Without a clear agenda, the meetings sometimes feel like a waste of time," one participant reflected. Addressing this issue through facilitation training or the involvement of skilled coordinators could significantly enhance the impact of these forums.

Collaborative professional development initiatives, such as Teacher Working Group and Principal Working Group, exemplify the efficacy of peer-learning models in fostering teacher agency and instructional innovation (Eradze et al., 2023). These platforms facilitate the exchange of best practices, collective problem-solving, and the co-construction of pedagogical strategies, resonating with characterization of professional learning communities (Goodyear et al., 2019). The structured nature of these forums fosters a sense of shared accountability and collective efficacy, enabling educators to co-develop innovative solutions to shared challenges (Brodie, 2021).

However, logistical constraints and inconsistent facilitation limit the scalability of these initiatives. Research studies emphasize the centrality of leadership in ensuring the productivity and sustainability of collaborative forums (Mustari & Nurhayati, 2024). Targeted capacity-building for facilitators and the institutionalization of regular meeting schedules can enhance the impact of these communities. Collaborative professional development also plays a pivotal role in breaking silos within educational institutions, promoting cross-functional collaboration that aligns with broader organizational goals. By fostering a culture of shared accountability and continuous improvement, collaborative forums play a critical role in enhancing teaching quality and institutional coherence (Rohman & Nurhayati, 2023). The ripple effects of such initiatives extend beyond individual educators, contributing to systemic improvements in educational delivery.

5. Community and Stakeholder Engagement

Community involvement emerged as a critical element in the successful implementation of Independent Curriculum. The inclusion of parents, community leaders, and other local stakeholders significantly enhanced the curriculum's relevance and enriched the overall educational experience for students. Through collaborative efforts, schools were able to address local challenges and optimize resources to create a conducive learning environment.

One educator highlighted the value of localized curriculum development, stating, "Incorporating community input helped us align the curriculum with local cultural and economic contexts, making education more meaningful for students and their families". For instance, schools in rural and frontier regions leveraged community expertise to design projects and extracurricular activities that resonated with local traditions and values. These initiatives not only engaged students but also strengthened their connection to their heritage.

Resource support was another area where community involvement proved invaluable. Stakeholders provided critical resources such as books, funding, and access to extracurricular expertise, filling gaps that the schools could not address on their own. A teacher shared, "Parents and local leaders stepped up to provide what the school needed, whether it was books for the library or volunteers to help with cultural projects". This collaborative spirit enhanced the quality of education and ensured that schools could sustain various programs, even in resource-constrained settings.

Beyond practical contributions, active engagement from stakeholders fostered trust and collaboration between schools and their communities. A supervisor noted, "When parents and community members see the tangible benefits of their involvement, it builds a stronger relationship between the school and the broader community". This trust translated into higher student enrollment rates, improved attendance, and a supportive environment for learning.

However, fostering community engagement was not without challenges. Limited initial buy-in from stakeholders unfamiliar with the goals of Independent Curriculum hindered early efforts. As one educator explained, "At first, many community members didn't understand why their participation mattered. It took time to show them how their involvement directly benefited their children's education". Addressing this resistance required extensive communication and outreach to build awareness and trust.

Community engagement emerges as a cornerstone of localized curriculum implementation, aligning with Nurhayati (2023) framework on school-family-community partnerships. This study demonstrates that stakeholder involvement enhances curricular relevance, promotes resource mobilization, and fosters social accountability. By integrating local knowledge into curriculum design, schools create learning environments that reflect and respect

cultural and contextual realities. Such integration also helps bridge the gap between formal education and local community needs, ensuring that students receive an education that is both meaningful and applicable.

Stakeholder resistance, particularly during initial phases, underscores the importance of transparent communication and participatory governance. Studies advocate for iterative feedback mechanisms and reciprocal partnerships to build trust and co-ownership (Fadlyansyah & Nurhayati, 2020; Latif et al., 2023; Suharyat et al., 2023). These partnerships not only enrich curriculum content but also bolster community support for educational initiatives. By aligning educational objectives with local priorities, schools can create sustainable ecosystems of collaboration that bridge systemic gaps. Furthermore, sustained community engagement fosters a sense of shared responsibility for educational outcomes, transforming schools into collaborative hubs that leverage community resources for mutual benefit.

6. Geographic and Cultural Adaptations

Participants from rural and frontier regions emphasized the critical role of geographic and cultural adaptations in implementing Independent Curriculum. These adaptations addressed the unique challenges of remote areas, where access to resources, infrastructure, and professional development is often limited. A supervisor working in an island district shared, "We adjusted lesson schedules to align with the seasonal availability of transportation. This ensured consistent student attendance despite logistical barriers." Such strategies demonstrated the importance of contextualizing the curriculum to resonate with local realities.

Tailoring the curriculum to specific geographic and cultural contexts proved highly effective in promoting engagement and inclusivity. By using locally available materials, schools minimized reliance on external resources, which are often costly and difficult to obtain in remote areas. For instance, one educator described using materials from the natural environment for science projects, explaining, "We encouraged students to collect samples from nearby mangroves to learn about ecosystems, making learning both practical and relevant." This approach not only enriched the learning experience but also fostered a deeper connection between students and their surroundings.

Moreover, geographic adaptations extended beyond classroom resources to community

partnerships. Schools collaborated with local stakeholders to implement educational initiatives. A supervisor explained, "We worked closely with village leaders to promote school attendance and address cultural stigmas about formal education." These collaborations strengthened the bond between schools and their communities, reinforcing the curriculum's relevance and sustainability.

Despite their effectiveness, geographic and cultural adaptations faced significant challenges. High logistical costs were a persistent issue, particularly in remote island schools where teachers and materials had to be transported across rough seas. One educator shared, "Traveling between islands for training sessions or to deliver supplies is not only expensive but also dangerous during bad weather." These challenges often limited the frequency and reach of professional development opportunities, creating disparities in teacher training and support.

Additionally, limited access to technology and internet services exacerbated the difficulties faced by teachers in isolated areas. While educators were eager to participate in online training programs, the lack of stable connectivity hindered their ability to access resources and engage in continuous professional development. A participant remarked, "We often had to rely on outdated materials because accessing new training modules online was impossible with our internet issues."

Tailoring educational interventions to the unique needs of rural and frontier regions underscores the importance of geographic and cultural adaptability in curriculum implementation. Consistent with Nurhayati et al. (2024) culturally responsive pedagogy, this study highlights the transformative impact of integrating local knowledge, resources, and traditions into educational frameworks. Such adaptations foster inclusivity, deepen student engagement, and preserve cultural heritage (Firdaus et al., 2024; Nurhayati & Rumsari, 2020; Syafrudin & Nurhayati, 2020; Yosfiani & Nurhayati, 2023). By aligning educational practices with local values, schools can create learning environments that resonate with students' lived experiences, thereby enhancing engagement and learning outcomes.

Logistical barriers, including limited transport infrastructure and insufficient digital connectivity, echo research findings on systemic inequities in educational access. Addressing these barriers requires policy-level interventions that

prioritize resource allocation, teacher training, and community collaboration (Musa, Nurhayati, Jabar, et al., 2022; Nurhayati et al., 2021; Safuri et al., 2022). Sustained investment in teacher capacity-building initiatives is critical for ensuring that educators are equipped to deliver culturally relevant instruction. Moreover, fostering partnerships with local stakeholders can further strengthen the alignment between educational programs and community aspirations, creating a more inclusive and equitable education system (Aisah et al., 2024).

7. Cross-School Collaborations

Cross-school collaborations have proven instrumental in scaling effective practices and fostering a robust support network among educators. By pooling resources and knowledge, these partnerships have enhanced collective problem-solving and driven innovation in schools implementing Independent Curriculum.

One supervisor described the approach as "a way to ensure no school is left behind, especially those struggling with limited resources." Collaborative platforms, such as WhatsApp groups and professional forums, enabled schools to exchange ideas, share materials, and celebrate achievements. These initiatives motivated schools to strive for excellence, not only improving internal practices but also inspiring others to adopt similar innovations. A teacher remarked, "Seeing another school's success story made us want to do better. It was a healthy competition that pushed us to improve."

The collaborative spirit extended beyond sharing success stories. Schools frequently partnered to conduct joint training sessions and workshops, facilitating capacity building across institutions. One such initiative involved teachers and headmasters from neighboring schools co-designing lesson plans and learning materials. A participant shared, "These sessions allowed us to learn from each other's experiences, and the results were evident in how quickly our students adapted to new learning approaches." This collective effort built a sense of community among educators, ensuring that no school faced challenges in isolation.

However, these collaborations were not without challenges. Unequal participation emerged as a significant hurdle, as resource disparities between schools limited some institutions' ability to engage fully. A supervisor explained, "Schools with better funding or infrastructure naturally contributed more, while others struggled to keep up, creating a sense of

imbalance." This disparity sometimes hindered the seamless exchange of resources and ideas, necessitating targeted interventions to ensure equitable participation.

Administrative hurdles also complicated the formalization of collaborations. Securing approvals, coordinating schedules, and aligning priorities among multiple schools often delayed the implementation of joint activities. An educator noted, "The paperwork and coordination efforts were overwhelming at times, making it difficult to maintain momentum." These challenges highlighted the need for streamlined processes and supportive policies to encourage sustained collaboration.

Cross-school collaborations embody the principles of networked learning communities (Sinnema et al., 2020), facilitating the dissemination of best practices and the pooling of resources. These partnerships foster innovation, collective efficacy, and institutional resilience (Rempe-Gillen, 2018). Collaborative initiatives enable schools to address shared challenges, promote healthy competition, and drive systemic improvements in teaching and learning (Connolly et al., 2019). The mutual exchange of expertise and resources enhances institutional capacity while fostering a culture of shared learning and accountability.

Nonetheless, disparities in resource availability and bureaucratic inefficiencies hinder the seamless execution of these collaborations. Recent researches advocate for targeted funding mechanisms and streamlined administrative processes to ensure equitable participation (Connolly et al., 2019; Rempe-Gillen, 2018). By fostering a spirit of shared responsibility and mutual support, cross-school collaborations can amplify the collective impact of educational initiatives across diverse contexts (Connolly et al., 2019). These collaborations not only enhance the operational efficiency of individual schools but also contribute to the broader goal of systemic educational reform by aligning institutional practices with national and regional priorities.

8. Policy Integration with National Programs

Policy integration emerged as a critical strategy for aligning local educational initiatives with national programs such as Profil Pelajar Pancasila (P5). This alignment ensured coherence in curriculum implementation and provided a structured framework for scaling successful local practices to a broader context. Educators consistently highlighted the benefits of aligning their efforts with national objectives, including

access to resources, streamlined operations, and enhanced recognition of their schools' achievements.

One participant noted, "By integrating with national programs, our schools gained clarity on priorities and received the support needed to implement transformative initiatives." This coherence allowed schools to connect local goals with broader educational reforms, fostering consistency in the implementation of Independent Curriculum.

Policy integration also facilitated critical financial and logistical support. Informants explained that alignment with national programs made it easier for schools to secure funding for teacher training, infrastructure development, and operational improvements. One informant reflected, "Once we aligned our curriculum goals with national frameworks, we gained access to resources that were previously out of reach." The structured support ensured that even remote schools could benefit from training programs, such as workshops on differentiated instruction and the integration of P5 into classroom activities.

Scalability was another significant advantage. Informants reported that national programs provided a replicable framework that allowed local initiatives to expand beyond their original contexts. For instance, schools implementing P5 projects saw their efforts replicated in neighboring institutions, creating a ripple effect. "When one school excels in implementing P5, it inspires others to follow suit, raising the overall standard of education in the region," shared a supervisor. This scalability underscored the transformative potential of national programs when effectively integrated at the local level.

Despite these advantages, challenges in policy integration were also evident. Disparities between local needs and national priorities often required negotiation and compromise. One informant explained, "Some aspects of national policies did not align with the unique needs of our community, forcing us to adapt them significantly." This disconnect created friction, particularly in underserved areas where resources and priorities diverged from centrally defined objectives.

Bureaucratic delays further hindered the timely implementation of aligned initiatives. Informants described long waiting periods for the approval of funding requests or the delivery of program materials. "We often had to wait months for resources to arrive, delaying critical training sessions," an educator remarked. Such delays not only slowed progress but also risked diminishing

the motivation of educators and stakeholders working on the ground.

Policy integration with national frameworks, such as Profil Pelajar Pancasila (P5), underscores the importance of systemic alignment in driving educational reform. This study highlights the role of coherence between local initiatives and national directives in optimizing resource utilization and scaling innovations. Effective integration ensures that local educational practices are aligned with broader policy objectives, creating a unified framework for systemic transformation (Butler et al., 2018; Muslimah et al., 2023).

Tensions between localized needs and centralized mandates necessitate adaptive policy frameworks that reconcile these dynamics. Studies emphasize the need for iterative stakeholder consultations and streamlined approval processes to enhance implementation fidelity. By fostering policy coherence and stakeholder alignment, schools can create enabling environments that support sustained educational transformation (Torres et al., 2024). This alignment not only facilitates resource optimization but also strengthens stakeholder engagement, ensuring that educational reforms are both contextually relevant and operationally effective.

D. CONCLUSION AND RECOMMENDATION

This study underscores the vital role of tailored strategies in addressing Indonesia's multifaceted educational challenges and their contributions to the successful implementation of Independent Curriculum. Key findings highlight On-the-Job Learning (OJL) as a foundational strategy with unparalleled adaptability and effectiveness, particularly in enhancing teacher competence and fostering practical skill development. Complementary strategies such as Technology Integration and Community Engagement proved instrumental in addressing regional disparities. For instance, Technology Integration enhanced classroom interactivity in urban settings, while targeted infrastructure investments demonstrated its potential in rural and 3T regions. Similarly, Community Engagement ensured the curriculum's cultural relevance, with significant impacts in 3T regions where local collaboration strengthened trust and curriculum adoption. The interplay of these strategies highlights the necessity of integrating scalable systemic solutions with localized

interventions tailored to Indonesia's socio-geographical diversity. These approaches collectively enhanced educational outcomes by addressing infrastructure gaps, fostering professional development, and promoting community-driven initiatives.

This research contributes to the broader discourse on curriculum reform by emphasizing the intersection of policy, practice, and context in achieving educational transformation. The findings provide actionable insights for policymakers and practitioners, advocating for sustained investments in strategies that address both systemic and localized challenges. Future research should focus on longitudinal assessments of OJL and Community Engagement to evaluate their long-term impacts on educational outcomes. Additionally, the integration of adaptive technologies and virtual collaboration tools into rural and 3T settings warrants further exploration. Investigating methods to strengthen localized capacity-building, particularly in underserved regions, could inform policy development aimed at equitable access to quality education across Indonesia. These inquiries will advance understanding of sustainable educational reform in diverse and evolving contexts.

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