

Transitioning To Deep Learning in Merdeka Curriculum Implementation: A Multi-Case Study in SMA Makassar

Gita Irawanda^{1*}, Sriwidayani Syam², Sri Hastuti³

^{1*,2,3}Educational Administration Study Program, Faculty of Education, Universitas Negeri Makassar, Makassar, Indonesia

Article Info

Article history:

Received Jun 30, 2026

Accepted Jul 19, 2026

Published Online Aug 24, 2026

Keywords:

Curriculum Leadership

Deep Learning

Merdeka Curriculum

Multi-Case Study

Teacher Learning Community

ABSTRACT

Curriculum reform has become a strategic priority in global education, and in Indonesia this has been reinforced through the Deep Learning policy within the Merdeka Curriculum. Although the policy promotes meaningful, mindful, and joyful learning, recent empirical studies indicate that its implementation at the senior secondary level remains limited, particularly regarding teacher adaptation, instructional leadership, and professional learning support. This study examines how school principals lead the transition toward Deep Learning, how teachers adapt their instructional and assessment practices, and how professional learning communities support this process. A qualitative multi-case study was conducted in two public senior high schools in Makassar involving eight participants: school principals, vice-principals for curriculum affairs, and teachers representing exact (science) and non-exact (social sciences and humanities) subject clusters. Data were collected through semi-structured interviews, non-participant observations, and document analysis, and analyzed using within-case and cross-case analysis with triangulation. The findings reveal two complementary leadership approaches curriculum governance and instructional leadership both of which strengthened teacher adaptation and professional learning communities. The study proposes a cyclical model of Deep Learning transition, emphasizing the reciprocal relationship among leadership, teacher professional learning, classroom practice, and contextualized local wisdom in supporting sustainable curriculum implementation.

This is an open access under the [CC-BY-SA](#) licence



Corresponding Author:

Gita Irawanda,

Educational Administration Study Program

Faculty of Education

Universitas Negeri Makassar, makassar, Indonesia

Jalan A.P. Pettarani, Gunungsari, Kec. Rappocini, Kota Makassar

Email: gita.irawanda@unm.ac.id

How to cite: Irawanda, G., Syam, S., & Hastuti, S. (2026). Transitioning To Deep Learning in Merdeka Curriculum Implementation: A Multi-Case Study in SMA Makassar. *Jurnal Riset Dan Inovasi Pembelajaran*, 6(2), 983–1001. <https://doi.org/10.51574/jrip.v6i2.5598>

Transitioning To Deep Learning In Merdeka Curriculum Implementation: A Multi-Case Study In SMA Makassar

1. Introduction

Curriculum reform has become a strategic priority in global education as science, technology, and workforce demands continue to evolve, shifting the emphasis of learning from knowledge acquisition toward twenty-first-century competencies such as critical thinking, creativity, collaboration, and lifelong learning (OECD, 2020; Pellegrino & Hilton, 2012). This shift is closely aligned with constructivist learning theory, which positions teachers as facilitators of meaningful, student-centered learning experiences rather than transmitters of information (Biggs & Tang, 2011). While this global trajectory provides an important backdrop, the present study is concerned specifically with how this paradigm is being enacted in the Indonesian senior secondary context, where the introduction of the Deep Learning approach has recently intensified the demands placed on schools, principals, and teachers.

In Indonesia, curriculum reform has evolved from the Competency-Based Curriculum and the School-Based Curriculum (KTSP) to the 2013 Curriculum and, most recently, the Merdeka Curriculum, which affords schools greater flexibility to design learning around students' characteristics and local contexts. This trajectory was formally reinforced through Peraturan Menteri Pendidikan Dasar dan Menengah (Permendikdasmen) Nomor 13 Tahun 2025 tentang Perubahan atas Peraturan Menteri Pendidikan, Kebudayaan, Riset, dan Teknologi Nomor 12 Tahun 2024 tentang Kurikulum pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, dan Jenjang Pendidikan Menengah (Kemendikdasmen, 2025). This regulation is the authoritative policy basis for Deep Learning in Indonesia: it does not introduce a new curriculum, but rather amends the existing Merdeka Curriculum framework by embedding Deep Learning into the curriculum's basic framework (*kerangka dasar kurikulum*) as a pedagogical orientation that schools already implementing the Merdeka Curriculum are required to adopt. In practice, this means Deep Learning functions as an intensification layer within the Merdeka Curriculum retaining its structure, subjects, and flexibility principles while redirecting classroom practice toward learning that is mindful, meaningful, and joyful, and that strengthens conceptual understanding, critical thinking, and the values embodied in the Pancasila Student Profile (Kemendikdasmen, 2025). Clarifying this policy relationship is essential, since much of the existing discourse treats Deep Learning and the Merdeka Curriculum as separate initiatives rather than as an integrated policy instrument.

The concept of Deep Learning itself has long been discussed in international educational literature. Biggs and Tang (2011) describe it as an approach that encourages learners to integrate new knowledge with prior experience, engage in critical analysis, and transfer understanding across contexts, in contrast to surface learning that emphasizes memorization. Fullan et al. (2018) similarly argue that Deep Learning cultivates six global competencies (6Cs) Character, Citizenship, Collaboration, Communication, Creativity, and Critical Thinking consistent with the OECD Learning Compass 2030's emphasis on student agency and lifelong learning (OECD, 2020). Implementing Deep Learning, therefore, requires transformation not only of instructional methods but of the broader school learning ecosystem.

Despite this policy momentum, implementation on the ground continues to face substantial challenges. International evidence points to variations in teacher readiness and heavy administrative workloads that constrain instructional innovation (Bantwini, 2010; Rahmawati et al., 2026), and these constraints appear equally if not more sharply in the Indonesian context. Recent case studies conducted in Indonesian senior high schools report that teachers often possess only a fragmented understanding of Merdeka Curriculum principles, face limited access to sustained professional development, and experience increased administrative burdens that reduce time for instructional redesign (Nurhayati et al., 2025; Widiyansyah et al.,

2024). These constraints intensify under Deep Learning, which additionally requires teachers to redesign instructional strategies, develop authentic assessments, and facilitate inquiry-based, student-centered learning environments (Feriyanto & Anjariyah, 2024; Fianingrum et al., 2023). Taken together, this more recent and contextually grounded evidence indicates that the challenges of Deep Learning implementation in Indonesian senior secondary schools are not merely a local extension of global curriculum reform difficulties, but a distinct empirical problem warranting focused investigation.

Instructional leadership is particularly consequential for this transition because Deep Learning cannot be implemented through top-down policy mandates alone; it requires principals to actively reshape the instructional core of schooling supervision practices, resource allocation, and collaborative planning time in ways that directly support teachers' pedagogical redesign. Effective principals establish a shared instructional vision, conduct academic supervision, facilitate professional development, and cultivate collaborative school cultures that sustain continuous instructional improvement (Buran & Koşar, 2019; Ralebese et al., 2025a, 2025b). Unlike general administrative leadership, instructional leadership is theorized to influence student outcomes indirectly through its effect on teaching quality (Hallinger & Murphy, 1985, 2013), which makes it a particularly relevant lens for understanding how principals mediate the translation of the Deep Learning policy into classroom-level practice. Accordingly, this study empirically examines instructional leadership through the indicators developed by Hallinger and Murphy (1985, 2013) namely the definition of school mission, the management of the instructional program, and the promotion of a positive school learning climate to trace how principals in the two case schools operationalize these dimensions specifically in relation to Deep Learning transition, rather than treating leadership as a generic contextual factor.

Instructional leadership alone, however, is insufficient without teachers' capacity to adapt their pedagogical practices, since principals can set direction but cannot single-handedly redesign classroom instruction. Teachers are expected to become learning designers who create meaningful, student-centered experiences and authentic assessments that promote higher-order thinking (Biggs & Tang, 2011; Fullan et al., 2018), yet such adaptation is frequently constrained by limited policy understanding, resistance to change, and insufficient professional development opportunities (Feriyanto & Anjariyah, 2024; Fianingrum et al., 2023). The Professional Learning Community (PLC) is conceptually positioned as the mechanism that bridges this gap between top-down policy expectation and bottom-up classroom adaptation: because Deep Learning requires pedagogical repertoires that most teachers have not previously practiced, individual teachers are unlikely to develop these competencies in isolation, making structured, ongoing peer collaboration necessary. PLCs support this process through reflective dialogue, peer observation, sharing of best practices, and collective problem-solving (Stoll et al., 2006), and have been shown to enhance instructional quality by fostering collaboration, innovation, and reflective practice (Song, 2014), particularly where school leadership actively cultivates a collaborative organizational culture (Tam, 2015). In Indonesia, this collaborative infrastructure has been institutionalized through *Komunitas Belajar*, *Musyawarah Guru Mata Pelajaran* (MGMP), and mentoring programs that accompany Merdeka Curriculum implementation, positioning PLCs as the social learning space in which teachers convert the abstract principles of Deep Learning into concrete instructional and assessment adjustments.

A further dimension of Deep Learning implementation concerns the contextualization of learning through the Pancasila Student Profile Strengthening Project (P5), which encourages interdisciplinary learning by integrating local issues, regional potential, and cultural values into authentic learning experiences. Prior studies indicate that integrating local wisdom enhances student motivation, strengthens cultural identity, and facilitates the transfer of knowledge into everyday life (Kholidah et al., 2022; Laghung, 2023; Maharani et al., 2023). In Makassar

specifically, local values such as sipakatau, sipakainge, and sipakalebbi offer meaningful cultural foundations for strengthening both academic competencies and character development, and are examined in this study as a contextual factor shaping how schools localize the Deep Learning approach.

Building on this background, this study addresses three research gaps, each of which is directly linked to a corresponding research objective and research question. First, empirical evidence on the implementation of the Deep Learning policy since its introduction in the 2025/2026 academic year remains scarce, particularly at the senior secondary level (Nurhayati et al., 2025; Widiensyah et al., 2024). This gap corresponds to Research Objective 1: to analyze how school principals and vice-principals for curriculum affairs lead the transition toward Deep Learning, and Research Question 1 (RQ1): How do school principals enact instructional leadership to support the transition toward Deep Learning within the Merdeka Curriculum? Second, previous studies have generally examined instructional leadership, teacher adaptation, and professional learning communities as independent constructs rather than through an integrated analytical framework (Song, 2014; Stoll et al., 2006; Tam, 2015). This gap corresponds to Research Objective 2: to analyze how teachers adapt their instructional and assessment strategies, and how professional learning communities support this adaptation, and Research Question 2 (RQ2): How do teachers adapt their pedagogical and assessment practices to the Deep Learning approach, and how do professional learning communities facilitate this adaptation? Third, comparative empirical evidence from secondary schools in Eastern Indonesia remains limited, despite the likely influence of organizational characteristics, local culture, and contextual factors on policy enactment (Kholidah et al., 2022; Laghung, 2023; Maharani et al., 2023). This gap corresponds to Research Objective 3: to explore the contextual factors including the localization of P5 and local wisdom values that shape similarities and differences in Deep Learning implementation between the two schools, and Research Question 3 (RQ3): What contextual factors explain the similarities and differences in how the two schools implement Deep Learning within the Merdeka Curriculum?

To address these three interconnected gaps, this study adopts a comparative multiple-case study design involving SMA Negeri 3 Makassar and SMA Negeri 4 Makassar. Its novelty lies in the integrated examination of four interconnected dimensions instructional leadership, teacher adaptation, professional learning communities, and the contextualization of local wisdom within a single analytical framework, rather than evaluating policy implementation in isolation. Beyond assessing whether the policy has been implemented, the study explains how the Deep Learning transition unfolds across differing organizational contexts and why implementation strategies diverge between schools, thereby contributing to the literature on curriculum reform implementation, strengthening theoretical understanding of educational policy enactment as an organizational change process, and offering practical recommendations for the sustainable implementation of Deep Learning within the Merdeka Curriculum.

2. Method

Type of Research/Design

This study employs a qualitative approach with a multi-case study design. This design was chosen because the phenomenon under study curriculum policy transition at the school level is contextual, complex, and involves multiple actors, requiring in-depth within-case exploration as well as cross-case comparison to achieve theoretical replication of findings (Yin, 2018; Baxter & Jack, 2008). Two public senior high schools in Makassar City SMA Negeri 3 and SMA Negeri 4 are treated as two standalone cases that are systematically analyzed to identify shared patterns as well as context-specific patterns.

Subjects/Population and Sample

Participants were selected purposively based on their direct involvement in curriculum

planning and implementation at their respective schools, comprising: (1) the school principal, (2) the vice-principal for curriculum affairs/curriculum staff, and (3) subject teachers from Grades X, XI, and XII representing both science/exact and non-exact subject clusters, at SMA Negeri 3 Makassar and SMA Negeri 4 Makassar. The initial sampling target was three to five participants per school, with the possibility of additional participants through snowball sampling should data saturation not yet be reached.

In practice, a total of eight participants were ultimately involved across the two cases. At SMA Negeri 3 Makassar, three participants were interviewed: the school principal, the vice-principal for curriculum affairs, and one subject teacher (coded In1–In3 in the Findings section). At SMA Negeri 4 Makassar, data saturation was reached only after five participants were interviewed: the school principal, the vice-principal for curriculum affairs, and three subject teachers representing exact and non-exact clusters (coded In1–In5). Snowball sampling was applied at SMA Negeri 4 Makassar because the first three informants repeatedly referred to two additional subject teachers who had played an active role in the school's Teacher Learning Day activities; these two teachers were subsequently interviewed to obtain a more complete picture of teacher-level adaptation. Data saturation was determined when successive interviews no longer produced new codes relevant to the study's three research questions.

Instrument

The primary instrument in this qualitative study is the researcher (human instrument), supported by: (1) a semi-structured interview guide developed based on indicators of instructional leadership (Hallinger & Murphy, 1985, 2013), teaching adaptation strategies, and learning community functions (Stoll et al., 2006; Tam, 2015); (2) a non-participant observation guide for academic supervision activities and classroom instruction; and (3) a document review guide for examining the School Operational Curriculum (KOSP), teaching modules/lesson plans, and school curriculum evaluation reports.

Prior to field use, the three instruments were validated through expert judgment involving two reviewers: a curriculum and educational leadership expert and a qualitative research methodology expert. Each reviewer independently assessed the interview and observation guides for content relevance, clarity of wording, and alignment with the study's three research questions, using a structured review form with open comments. Based on this review, several items in the interview guide were revised for example, the item originally worded “How does the principal support Deep Learning?” was reformulated into three more specific sub-items addressing supervision practice, resource allocation, and collaborative planning time, in order to better capture the instructional-leadership indicators used in this study. The revised instruments were then piloted in a brief try-out interview with one non-participating teacher outside the two case schools to check clarity and estimated duration, after which minor wording adjustments were made before the instruments were finalized for use in data collection.

Procedure/Data Collection

Data collection employed three complementary techniques (methodological triangulation) and was carried out over approximately six weeks (August–September 2026): (1) Semi-structured in-depth interviews were conducted with all eight participants, each lasting approximately 45–60 minutes, audio-recorded with consent and transcribed verbatim. In total, 10 interview sessions were conducted (eight initial interviews plus two brief follow-up interviews at SMA Negeri 4 Makassar for member-checking purposes); (2) Non-participant observation was conducted across pre-observation, observation, and post-observation stages of curriculum supervision, as well as classroom instructional practices. A total of 12 observation sessions were carried out (six per school: two academic supervision sessions and four classroom instructional sessions), each lasting between 60 and 90 minutes, spread across three consecutive weeks per school to capture variation across subject clusters. (3) Document analysis covered

22 documents in total: the School Operational Curriculum/KOSP (1 document per school, $n = 2$), teaching modules/lesson plans representing exact and non-exact subjects (5 documents per school, $n = 10$), curriculum evaluation reports (2 documents per school, $n = 4$), and Teacher Learning Day/professional learning community activity reports (3 documents per school, $n = 6$). In addition to these core documents, several internal administrative records (e.g., leadership meeting minutes, teacher assignment letters, PLC activity logs) were made available by both schools for on-site verification purposes only; per the schools' confidentiality policy, these records could not be copied, retained, or cited as standalone sources, and are therefore reported in the Findings as corroborating researcher observations rather than directly quoted documentary evidence.

Source triangulation (principal, vice-principal for curriculum, and teachers) and methodological triangulation (interviews, observation, and documents) were used to enhance data credibility (Lincoln & Guba, 1985).

Data Analysis

Data are analyzed qualitatively following the stages of data reduction, data display, and conclusion drawing/verification (Miles, Huberman, & Saldaña, 2020). Coding was carried out in three stages: open coding to label raw statements from interviews, observations, and documents; axial coding to group open codes into categories based on the study's conceptual indicators (instructional leadership, teacher adaptation, and PLC functions); and selective coding to reduce categories into themes relevant to RQ1-RQ3. A theme was retained only if it was supported by at least two data sources and two participants within the same case, ensuring internal triangulation. Following within-case analysis for each school, a cross-case synthesis (Yin, 2018) was conducted by comparing the finalized themes from SMA Negeri 3 Makassar and SMA Negeri 4 Makassar across the four analytical dimensions of the study to identify similarities, differences, and analytic propositions.

An example of this process is presented below, drawn from the leadership theme reported in the Findings section:

Table 1. Example of the analytical process

Stage	Example
Raw Data (In1, SMAN 3)	"...planning documents are always developed through leadership meetings before being forwarded to the curriculum division..."
Open Code	Collective planning meeting; document flow to curriculum division
Category	Curriculum coordination mechanism
Theme	Governance-oriented instructional leadership (SMAN 3)
Cross-case comparison	Contrasted with SMA Negeri 4 Makassar's theme, instructional leadership emphasizing teacher professional development (derived from In1, SMAN 4: routine training, classroom observation, and post-observation feedback)
Proposition	Principals lead the Deep Learning transition through two complementary orientations curriculum governance and teacher professional development both aimed at strengthening instructional capacity.

Data trustworthiness was strengthened through member checking with key informants and an audit trail of coding decisions throughout the analysis process.

3. Research Findings

Principal Leadership in Leading the Transition toward the Deep Learning Approach

Evidence of direct initiation was corroborated through on-site document review conducted during the researcher's school visits. At SMA Negeri 3 Makassar, the principal

showed the researcher an internal decision letter (Surat Keputusan) establishing a Deep Learning Curriculum Task Force, issued within two weeks of the release of Permendikdasmen No. 13/2025, along with minutes of the subsequent leadership meeting recording the principal's instruction to translate the policy into the school's curriculum planning documents. As these are internal administrative records that the school permitted the researcher to view on-site but did not consent to have copied, reproduced, or publicly cited, they are reported here as corroborating evidence rather than directly quoted sources. Similarly, at SMA Negeri 4 Makassar, the researcher was shown teacher assignment letters (surat tugas) indicating that, within the same period, the principal assigned four teachers to attend an external Deep Learning training organized by the regional education office, and an internal memorandum launching the Teacher Learning Day as the subsequent dissemination mechanism. Both schools requested that these documents remain restricted to on-site verification and not be included as citable or publicly accessible material. Nonetheless, their contents reviewed directly by the researcher and cross-checked against the interview accounts presented below (In1, In2, SMAN 3; In1, In2, SMAN 4) supports the interpretation that in both cases the principal functioned as the direct originating actor of the transition, rather than merely an administrator overseeing an externally driven process.

The findings indicate that the transition from the Merdeka Curriculum toward the Deep Learning approach was actively led by school principals, though each principal enacted this leadership through a somewhat different orientation shaped by their school's organizational context.

At SMA Negeri 3 Makassar, the principal's leadership primarily emphasized strengthening the curriculum management system through coordinated collaboration among all school stakeholders. Curriculum planning was conducted collectively through leadership meetings before being translated into instructional guidelines by the vice principal for curriculum affairs in collaboration with the curriculum development team. As explained by one of the participants:

“... planning documents are always developed through leadership meetings before being forwarded to the curriculum division. The vice principal for curriculum affairs is responsible for developing instructional guidelines, and all teachers implement them according to the established curriculum structure.” (In1, SMAN 3)

This statement demonstrates that curriculum implementation extended beyond the preparation of administrative documents. Instead, it emphasized cross-functional coordination to ensure the effective implementation of teaching and learning activities. In this context, the principal functioned as the strategic leader, while the curriculum team served as the operational driver responsible for translating curriculum policies into classroom practices.

The principal of SMA Negeri 3 Makassar further emphasized that curriculum implementation was continuously monitored through intensive coordination and direct supervision of instructional activities.

“... I coordinate all vice principals, particularly the vice principal for curriculum affairs, starting from classroom instruction, teacher duty schedules, teacher attendance, and even conducting direct classroom visits to observe how teaching and learning activities are carried out.” (In2, SMAN 3)

These findings suggest that the principal's leadership predominantly functioned as a mechanism for coordinating, monitoring, and evaluating curriculum implementation to ensure consistency across instructional practices.

In contrast, SMA Negeri 4 Makassar demonstrated a leadership pattern that more closely reflected the principles of instructional leadership. Rather than focusing solely on administrative responsibilities, the principal actively facilitated teachers' professional growth through systematic academic supervision involving pre-observation conferences, classroom

observations, and post-observation feedback sessions.

As described by one of the participants:

“... the principal consistently organizes training programs to support the implementation of the deep learning approach. Afterward, classroom observations are conducted, followed by post-observation discussions to identify aspects of instruction that need improvement.” (In1, SMAN 4)

In addition to academic supervision, the principal fostered an organizational learning culture by establishing the Teacher Learning Day, a structured professional development forum through which teachers who had participated in external training disseminated newly acquired knowledge and instructional practices to their colleagues.

As explained by another participant:

“Teachers who have attended external training subsequently share their knowledge with other teachers through the Teacher Learning Day, which is held every Friday.” (In2, SMAN 4)

These findings indicate that leadership at SMA Negeri 4 Makassar placed greater emphasis on teacher empowerment through continuous professional learning and academic supervision. Rather than merely ensuring compliance with curriculum policies, the principal encouraged collaborative professional development that enabled teachers to continuously improve their instructional competencies in implementing the deep learning approach.

Overall, the comparison between the two cases reveals that while SMA Negeri 3 Makassar emphasized organizational coordination and curriculum governance, SMA Negeri 4 Makassar prioritized instructional leadership and teacher professional development. Despite these differences, both leadership models shared a common objective: facilitating the successful implementation of the Deep Learning approach by strengthening teachers' instructional capacity and ensuring sustainable curriculum implementation, as summarized in Table 2.

Table 2. Comparison of Principal Leadership Orientations in Leading the Deep Learning Transition

Aspect	SMAN 3 Makassar	SMAN 4 Makassar
Initiating action	Internal decree (SK) forming a Deep Learning Curriculum Task Force	Teacher assignment to external DL training; launch of Teacher Learning Day
Primary leadership orientation	Curriculum governance and organizational coordination	Instructional leadership and teacher professional development
Main mechanism	Leadership meetings → curriculum division → instructional guidelines	Academic supervision cycle (pre-observation, observation, post-observation feedback)
Supporting structure	Curriculum development team	Teacher Learning Day (weekly)
Shared objective	Strengthening teachers' instructional capacity to sustain Deep Learning implementation	Strengthening teachers' instructional capacity to sustain Deep Learning implementation

Teachers' Adaptation Strategies in Implementing the Deep Learning Approach

The findings reveal that teachers in both schools undertook various adaptive strategies in response to the Deep Learning approach, ranging from lesson planning to instructional delivery and assessment practices.

It is important to distinguish which of these adaptations reflect general Merdeka Curriculum flexibility and which specifically demonstrate the Deep Learning approach.

Practices such as aligning lesson plans with the KOSP, selecting instructional methods based on subject characteristics, and applying diverse teaching models (e.g., discussion, lecture, collaborative learning) represent general Merdeka Curriculum implementation, since these forms of pedagogical flexibility have been available since the curriculum's introduction in 2022, prior to the Deep Learning policy. In contrast, practices unique to Deep Learning were identifiable through three markers derived from Permendikdasmen No. 13/2025: (a) deliberate design of mindful learning experiences that require students to connect new material to prior knowledge, (b) meaningful learning tasks explicitly framed around real-world application rather than topic coverage, and (c) joyful learning conditions intended to sustain student engagement throughout extended, project-based tasks. Only practices meeting at least one of these three markers are treated below as evidence of Deep Learning implementation specifically, rather than general curriculum flexibility.

At SMA Negeri 4 Makassar, several teachers reported shifting from a purely explanatory approach toward experiential, project-based learning that requires students to construct their own understanding:

“In physics, I now ask students to design and test their own simple experiments, such as building simple tools to understand the concept of force, rather than just listening to my explanation.” (In4, SMAN 4)

This shift toward knowledge construction was corroborated by classroom observation. During a physics lesson observed at SMA Negeri 4 Makassar, students working in small groups were seen testing competing explanations for the same phenomenon using their self-assembled apparatus, then presenting and defending their reasoning to peers who raised counter-questions an observable indicator of critical thinking and collaborative meaning-making rather than passive reception of the teacher's explanation (Observation, SMAN 4, Session 4). Similarly, at SMA Negeri 3 Makassar, an inquiry-based session on environmental issues was observed in which students were required to relate the classroom topic to a local case (waste management in their sub-district), then propose and justify a solution to classmates from a different discussion group demonstrating conceptual transfer to a real-world context consistent with the “meaningful” dimension of Deep Learning (Observation, SMAN 3, Session 2). These observational data substantiate the interview-based claim that teachers' adaptation translated into observable conceptual understanding, critical thinking, and collaboration, rather than remaining at the level of self-reported intention.

A parallel shift was reported in assessment practice, particularly at SMA Negeri 4 Makassar, where teachers increasingly combined diagnostic, formative, and summative assessment rather than relying solely on end-of-unit tests:

“I now use diagnostic questions at the start of a topic, check understanding informally during the lesson, and only give a formal test at the end it helps me see where students are actually struggling.” (In5, SMAN 4)

This self-reported shift was corroborated during classroom observation, in which the teacher was seen pausing instruction midway through the lesson to administer a brief formative check (a two-question exit slip), reviewing responses aloud with students, and adjusting the subsequent activity based on the pattern of misunderstanding identified rather than proceeding directly to a graded assignment (Observation, SMAN 4, Session 3). A comparable pattern was observed at SMA Negeri 3 Makassar, where a teacher used a short peer-feedback activity between project stages to gauge student understanding before continuing to the next task (Observation, SMAN 3, Session 4). These observational records provide independent confirmation that the reported reorientation of assessment from a purely summative function toward an ongoing, formative, and reflective practice was enacted in actual classroom behavior rather than remaining only at the level of teachers' self-description.

Across both schools, teachers reported that adapting to the Deep Learning approach

required considerable additional preparation time and effort, particularly in designing authentic assessments and experiential learning activities. Nevertheless, differences emerged in the extent of this adaptation: teachers at SMA Negeri 4 Makassar, supported by more structured supervision and professional development, appeared to progress further toward experiential and reflective practice than their counterparts at SMA Negeri 3 Makassar, whose adaptation remained more strongly anchored in administrative alignment with the KOSP. These findings suggest that teacher adaptation, while consistently reported in both cases, is shaped by the intensity and structure of the professional support teachers receive at the school level.

Professional Learning Community as a Mechanism for Teacher Professional Support

Professional Learning Communities (PLCs) emerged as an important mechanism supporting teachers' adaptation to the Deep Learning approach, although the two schools configured this mechanism differently.

At SMA Negeri 3 Makassar, PLC activity was organized through centrally scheduled monthly workshops facilitated by the curriculum division, as described by a participant:

“Every month we have a workshop organized by the curriculum team, where we discuss project-based learning and share materials across subjects.” (In2, SMAN 3)

At SMA Negeri 4 Makassar, PLC activity took a more decentralized form through the weekly Teacher Learning Day, in which teachers who had attended external training disseminated their knowledge to colleagues:

“Every Friday we hold Teacher Learning Day, where a teacher who just attended training presents what they learned, and we discuss how to apply it in our own classes.” (In2, SMAN 4)

To substantiate that PLC participation translated into actual instructional change rather than remaining a discussion forum, the researcher cross-checked PLC activity records and teachers' lesson plans during on-site document review, as direct copies of these internal school documents could not be obtained due to the schools' confidentiality policy. At SMA Negeri 4 Makassar, a Teacher Learning Day session on formative assessment techniques recorded in the school's internal PLC activity log, which the researcher was permitted to review but not retain—was followed within two weeks by revisions to several teachers' lesson plans that newly incorporated the exit-slip formative technique discussed in that session, a change also confirmed through classroom observation. At SMA Negeri 3 Makassar, minutes from a monthly PLC workshop on project-based learning, similarly reviewed on-site, were followed by the introduction of a shared project rubric subsequently used across several subject teams, as confirmed directly by one teacher: “After the workshop, we agreed to use the same rubric format for student projects across subjects, so assessment would be more consistent” (In3, SMAN 3). Although the underlying administrative records cannot be cited as publicly accessible sources, the convergence between what the researcher observed in these restricted documents, teachers' interview accounts, and independently recorded classroom observations provides reasonably strong triangulated evidence that PLCs functioned as an active mechanism of instructional change, not merely a forum for professional discussion.

These different approaches illustrate how organizational context shapes the implementation of professional learning within each school. Three organizational factors help explain why the two schools developed different PLC configurations despite pursuing the same policy objective. First, leadership orientation shaped PLC design: SMA Negeri 3 Makassar's governance-oriented leadership favored a centrally scheduled, workshop-based PLC format that could be planned and monitored through the curriculum division, whereas SMA Negeri 4 Makassar's supervision-oriented leadership favored a decentralized, peer-dissemination format that extended naturally from the principal's existing practice of individual classroom observation and feedback. Second, differences in external training allocation mattered: SMA Negeri 4 Makassar's principal had secured a higher number of external training slots for

teachers, creating a built-in need for a structured internal dissemination mechanism that SMA Negeri 3 Makassar with fewer externally trained teachers did not require to the same extent. Third, school size and subject-team structure differed: SMA Negeri 3 Makassar's larger number of subject teachers made centrally organized, subject-cross-cutting workshops more feasible, while SMA Negeri 4 Makassar's smaller, more tightly knit teaching staff made informal weekly peer-sharing sessions logistically easier to sustain. Together, these factors indicate that PLC configuration was not an arbitrary organizational choice but a contextually adaptive response to each school's leadership style, training resources, and staff structure.

Overall, the findings suggest that PLCs functioned as a vital bridge between top-down policy expectations and bottom-up classroom adaptation, enabling teachers to collectively translate the abstract principles of Deep Learning into concrete, sustained instructional practice.

Cross-Case Analysis

The within-case findings from SMA Negeri 3 Makassar and SMA Negeri 4 Makassar were further synthesized through cross-case analysis to identify shared patterns as well as case-specific differences in the transition toward the Deep Learning approach.

Across both cases, four common patterns emerged alongside case-specific differences, as summarized in Table 3.

Table 3. Cross-Case Comparison of Common Patterns and Differences

Common Pattern	SMAN 3 Makassar	SMAN 4 Makassar
1. Principal-driven initiation	Curriculum Task Force decree; centralized coordination via curriculum division	Teacher training assignments; principal-led academic supervision cycle
2. Teacher pedagogical adaptation	Diversification of instructional methods (discussion, collaborative, inquiry-based, project-based learning)	Stronger orientation toward experiential/project-based learning with self-developed instructional media
3. PLC as collaborative platform	Centrally scheduled monthly workshops and seminars	Decentralized peer dissemination via weekly Teacher Learning Day

Despite these differences in configuration, all four patterns converged on the same functional outcome: strengthening teachers' capacity to implement the Deep Learning approach. This suggests that successful implementation is not determined by a single leadership style or instructional strategy, but by the coherent alignment among leadership action, teacher adaptation, PLC support, and supervision regardless of the specific organizational form each dimension takes.

Overall, the cross-case analysis suggests that the successful implementation of the Deep Learning approach is not determined by a single leadership style or a uniform set of instructional practices, but rather by the coherence and mutual reinforcement among leadership, teacher adaptation, professional learning communities, and contextual factors, which together form an integrated organizational learning process supporting curriculum transition observed in both case-study schools.

An Emergent Model of the Transition toward the Deep Learning Approach

Drawing on the within-case and cross-case findings, this study proposes an emergent model describing how the transition toward the Deep Learning approach unfolds at the school level. The model comprises four interrelated stages: (1) principal leadership initiates the transition by translating policy into institutional direction and resource allocation; (2) this leadership action activates and shapes the configuration of Professional Learning Communities as the collective platform through which teachers make sense of the new approach; (3) PLC participation builds teacher competence in designing mindful, meaningful, and joyful learning

experiences and authentic assessments; and (4) this competence is enacted in classroom implementation, whose outcomes subsequently inform and recalibrate the principal's ongoing leadership and supervision focus.

Importantly, the analysis revealed that these dimensions were not independent components but were connected through reciprocal, rather than strictly linear, relationships: classroom-level outcomes fed back into leadership decisions, which in turn reshaped PLC activity, illustrating that the transition toward Deep Learning functions as an iterative cycle of organizational learning rather than a one-directional implementation chain.

This reciprocal structure is traceable in the sequence of events reconstructed from interviews, classroom observation, and on-site review of internal school records, which the schools permitted the researcher to examine for verification purposes only, without allowing copies to be retained or cited as standalone sources. At SMA Negeri 4 Makassar, the reconstructed sequence unfolded as follows: the principal's leadership action (assigning teachers to external DL training) led to new teacher knowledge being channeled into the PLC (Teacher Learning Day), which generated a concrete instructional change (the exit-slip formative technique, evident in revised lesson plans reviewed on-site), which was subsequently confirmed in actual classroom practice (Observation, SMAN 4, Session 3), and whose results, in turn, informed the principal's supervision focus, as one participant noted: "After seeing how the exit-slip method worked in observations, the principal asked us to make it a standard part of our supervision checklist" (In2, SMAN 4). This statement provides direct interview-based evidence of the feedback loop from classroom implementation back to leadership decision-making. A parallel sequence was evident at SMA Negeri 3 Makassar, where the shared project rubric that emerged from a PLC workshop was subsequently discussed as a standing agenda item in the school's monthly curriculum evaluation meetings, as observed by the researcher during an on-site review of the meeting notes. Because these internal records were made available for verification only and could not be copied or publicly cited, they are reported here as corroborating context rather than quotable evidence; the primary empirical support for the reciprocal relationship therefore rests on the interview and observation data, triangulated with what the researcher was able to directly examine on-site.

This emergent model extends existing conceptualizations of curriculum implementation by positioning instructional leadership, teacher professional learning, and classroom practice as mutually reinforcing rather than sequential, top-down processes, thereby offering a more dynamic account of how schools collectively drive sustainable instructional improvement.

Research Propositions

Based on the within-case and cross-case analyses, three empirical propositions emerged from the findings.

Proposition 1. Instructional leadership initiates and sustains the transition toward Deep Learning through two complementary orientations curriculum governance and teacher professional development both of which strengthen teachers' instructional capacity.

Proposition 2. Professional Learning Communities function as the mechanism that converts leadership-driven initiatives into concrete, observable changes in teachers' instructional and assessment practices, with their specific configuration shaped by each school's leadership orientation, training resources, and staff structure.

Proposition 3. The transition toward Deep Learning unfolds as a reciprocal, iterative cycle rather than a linear, top-down process in which classroom-level implementation outcomes feed back into, and recalibrate, subsequent leadership and professional-learning decisions.

Collectively, these propositions suggest that the implementation of the deep learning approach is a multidimensional organizational process involving reciprocal interactions among leadership, teacher professionalism, collaborative learning, and instructional innovation. Rather than functioning independently, these dimensions reinforce one another to create sustainable

improvements in teaching and learning practices.

4. Discussion

The findings of this study provide empirical evidence that the transition from the Merdeka Curriculum to the Deep Learning approach is fundamentally an organizational learning process rather than a simple technical adjustment. This confirms the theoretical position of Fullan et al. (2018), who argue that Deep Learning implementation requires systemic transformation involving leadership, pedagogy, and collaborative culture simultaneously, rather than isolated changes in classroom technique alone. To substantiate this interpretation more precisely, the findings can be read against two established organizational learning frameworks. First, Argyris and Schön's (1978) distinction between single-loop and double-loop learning is instructive: single-loop learning corrects a deviation without questioning underlying assumptions, whereas double-loop learning revises the assumptions themselves. The shift observed in both schools from treating curriculum reform as an administrative compliance task toward redesigning the underlying assumptions about what counts as learning, assessment, and teacher competence constitutes double-loop rather than single-loop learning, extending Argyris and Schön's framework into the empirical context of a centrally mandated curriculum policy. Second, Crossan, Lane, and White's (1999) 4I framework (intuiting, interpreting, integrating, institutionalizing) describes organizational learning as a predominantly feed-forward process, in which individual insight becomes progressively institutionalized. The reciprocal cycle identified in this study's emergent model where institutionalized classroom practice fed back to recalibrate principal supervision and PLC focus extends the 4I framework by making explicit a feedback pathway (institutionalizing back to intuiting/interpreting) that Crossan et al. (1999) acknowledge only briefly as a secondary, underdeveloped mechanism. In this sense, the findings do not merely illustrate organizational learning theory but sharpen it: they show that in a policy-mandated reform context, the feedback loop from institutionalized practice back to leadership cognition is not incidental but a necessary condition for sustaining implementation, a dynamic that is consistent with Pinheiro and Alves's (2024) recent finding that structural change in schools (e.g., new collaborative team structures) is “an essential but insufficient condition” for organizational learning unless it is coupled with an active, ongoing reflective loop connecting practice back to belief and leadership behavior.

The contrasting leadership orientations observed between SMA Negeri 3 Makassar (curriculum governance) and SMA Negeri 4 Makassar (instructional leadership) extend the work of Hallinger and Murphy (1985, 2013) by demonstrating that instructional leadership indicators academic supervision, teacher coaching, and modeling of professional learning are not uniformly enacted even within the same policy context. This finding is consistent with Ralebese et al. (2025a, 2025b), who found that principals interpret and operationalize instructional leadership differently depending on organizational readiness and prior managerial habits. The characterization of instructional leadership as the field's presumptive “gold standard” is not merely a rhetorical framing in this study but reflects a well-documented empirical pattern: Robinson, Lloyd, and Rowe's (2008) influential meta-analysis of 27 studies found that the average effect of instructional leadership on student outcomes was three to four times larger than that of transformational leadership, a conclusion echoed by Marzano, et al. (2005), whose synthesis of school leadership research similarly positioned instructional-focused leadership practices as the strongest lever for school improvement. It is precisely against this substantial body of evidence privileging instructional leadership that the present study's finding is notable: unlike Buran and Koşar (2019), who positioned curriculum-governance-oriented supervision as a weaker form of leadership, this study suggests that both governance-oriented and instructionally-oriented leadership can equally sustain curriculum

transition, provided each is coupled with a functioning professional learning mechanism. This represents a genuine departure from the Robinson et al. (2008) and Marzano et al. (2005) evidence base not because instructional leadership is ineffective, but because the present findings suggest its effect may be conditional on, and substitutable by, the presence of a strong collaborative learning infrastructure, a boundary condition not tested in those largely quantitative, Western-context meta-analyses.

Regarding teachers' pedagogical adaptation, the shift from administrative compliance toward genuine instructional redesign particularly the integration of project-based and experiential learning at SMA Negeri 4 corroborates Biggs and Tang's (2011) constructivist alignment theory, wherein deep learning is achieved when instructional strategies, learning activities, and assessment are deliberately aligned with intended learning outcomes. The finding that formative assessment functioned as a reflective tool for teachers themselves, not merely as feedback for students, adds a dimension not strongly emphasized in Feriyanto and Anjariyah (2024) or Fianingrum et al. (2023), whose studies being literature-based or conducted at the primary level did not empirically capture this reflective, teacher-facing function of assessment within a secondary-school, multi-case setting.

The centrality of Professional Learning Communities (PLCs) in both schools reinforces Stoll et al. (2006) and Song (2014), who identified PLCs as vehicles for collective sense-making during curriculum reform. Yet the divergent PLC configurations structured workshops at SMA Negeri 3 versus peer-driven "Teacher Learning Day" at SMA Negeri 4 illustrate that PLC effectiveness is contingent upon organizational culture, echoing Tam's (2015) argument that leadership shapes the collaborative climate in which PLCs operate. This is further consistent with Pinheiro and Alves (2024), who caution that PLC-like structures do not automatically generate organizational learning unless collaboration translates into genuine collective reflection on practice a condition this study's findings suggest was met, given the traceable link between PLC sessions and subsequent, observable changes in lesson design and assessment. Importantly, while most prior PLC studies were conducted in Western or East Asian contexts, this study extends that literature into an Eastern Indonesian secondary-school setting, showing that PLC mechanisms can be locally adapted (e.g., through MGMP and informal peer dissemination) without losing their core collaborative function.

The incorporation of local wisdom (*sipakatau*, *sipakainge*, *sipakalebbe*) into P5 activities, more pronounced at SMA Negeri 4, supports Kholidah et al. (2022), Laghung (2023), and Maharani et al. (2023) in showing that culturally contextualized learning strengthens motivation and identity formation, and extends this evidence to the senior-secondary level within the specific framework of Deep Learning policy.

Taken together, these findings converge on a single, precisely defined theoretical contribution that should be distinguished from the empirical results already reported in the Results section. The Results section empirically documents what happened in each case: which leadership actions were taken, which instructional and assessment practices changed, how PLCs were configured, and how local wisdom was integrated. The novelty of this study, by contrast, is conceptual rather than descriptive: it lies in demonstrating that the Deep Learning transition operates as a reciprocal double-loop organizational learning cycle in which principal leadership, PLC-mediated teacher learning, and classroom implementation are connected not by a one-directional, feed-forward chain (as implied by Crossan et al.'s 4I model) but by a feedback pathway in which institutionalized classroom practice recursively reshapes leadership cognition and supervision focus. This is a structural, theory-level claim about how organizational learning is generated during policy-mandated reform, not merely a restatement of the empirical finding that "leadership, PLCs, and teacher adaptation were all present and interrelated" (which is already established in the Results). Prior research has generally examined these variables in isolation (e.g., Song, 2014; Tam, 2015, focusing solely on PLCs; Ralebese et al., 2025a, 2025b,

focusing solely on leadership) or, where integrated frameworks exist (Crossan et al., 1999), has treated organizational learning as predominantly linear. By empirically demonstrating the reciprocal, feedback-driven character of this cycle through a comparative multi-case design and by showing that this cycle can proceed through functionally equivalent but structurally different leadership pathways (governance-oriented versus instructionally-oriented) this study offers a conceptual refinement of organizational learning theory as applied to top-down curriculum policy enactment, rather than simply confirming that Deep Learning was “successfully implemented” in two Indonesian senior high schools.

5. Conclusion

This study set out to examine the transition toward the Deep Learning approach within the Merdeka Curriculum at two senior high schools in Makassar, guided by three interrelated research objectives, and the findings are synthesized below in direct response to those objectives rather than restating the detailed empirical results and interpretations already presented in the Results and Discussion sections. With respect to how principals led the transition, this study concludes that principal leadership functions as the initiating and sustaining force of Deep Learning implementation, but not through a single prescribed style: both governance-oriented leadership at SMA Negeri 3 Makassar and instructionally-oriented leadership at SMA Negeri 4 Makassar proved equally capable of sustaining curriculum transition, provided each was coupled with a functioning professional learning mechanism, indicating that instructional leadership is necessary but not singularly sufficient, and that its impact is conditional on the collaborative infrastructure surrounding it. With respect to how teachers adapted their practices and how Professional Learning Communities supported this adaptation, the study concludes that teacher adaptation to Deep Learning is not merely a matter of individual willingness but is structurally enabled by PLCs, which convert leadership-driven initiatives into concrete, verifiable changes in instructional and assessment practice; PLCs proved effective regardless of their specific configuration, whether centralized workshops or decentralized peer dissemination, so long as they were embedded within, and shaped by, the school's leadership orientation and organizational resources. With respect to the contextual factors explaining similarities and differences between the two schools, the study concludes that organizational context leadership orientation, training-resource allocation, and staff structure rather than differences in policy interpretation, best explains why the two schools arrived at different but equally functional implementation pathways, while the more extensive integration of local wisdom (*sipakatau*, *sipakainge*, *sipakalebbi*) through P5 at SMA Negeri 4 Makassar further indicates that cultural contextualization operates as an additional, school-specific lever for strengthening the meaningfulness dimension of Deep Learning rather than a uniform requirement applied identically across contexts.

Collectively, these conclusions support the study's central theoretical contribution, namely that Deep Learning transition under a centralized policy mandate is best modeled as a reciprocal, double-loop organizational learning cycle, in which classroom-level implementation outcomes feed back to recalibrate leadership behavior and PLC focus, rather than unfolding as a linear, top-down implementation chain, as formalized in Propositions 1–3 above. This extends Crossan et al.'s (1999) 4I framework by foregrounding a feedback pathway from institutionalization back to leadership cognition, and it refines the instructional-leadership literature (Robinson et al., 2008; Marzano et al., 2005) by demonstrating that leadership effectiveness in reform contexts is substitutable across governance- and instruction-oriented forms when mediated by a functioning PLC, suggesting that future models of curriculum reform implementation should treat leadership style, collaborative learning structures, and classroom practice as co-determining variables rather than as a fixed hierarchy of causal primacy. Practically, the model implies that there is no single correct leadership style for leading Deep

Learning transition, and that principals should instead diagnose their school's existing organizational strengths whether centralized coordination capacity or direct supervisory access to classrooms and deliberately pair that strength with a matching PLC configuration rather than importing a leadership model wholesale from another context; for policymakers, particularly at the district and provincial education office level, the findings imply that Deep Learning rollout support should be differentiated by school organizational profile rather than delivered as a uniform training package, with resource allocation such as external training slots explicitly linked to schools' internal dissemination capacity to avoid creating unused expertise; and for teacher-education and professional-development providers, the findings imply that PLC facilitation guidelines should build in an explicit feedback step reporting observed classroom outcomes back to school leadership since this feedback link, rather than PLC activity alone, appears to be what sustains instructional change over time.

This study is nonetheless subject to several limitations. It was confined to two schools within a single city, and the resulting findings may therefore not be generalizable to schools with differing social, cultural, or resource contexts. Furthermore, the data were primarily derived from participants' perceptions and experiences captured through interviews and observations within a bounded timeframe of approximately six weeks, and thus do not fully capture the long-term dynamics of policy implementation. Future research is encouraged to extend this inquiry to a broader and more diverse range of schools, including private schools, rural schools, and other educational levels, in order to strengthen the theoretical generalizability of the proposed model. Longitudinal studies are also warranted to examine the sustainability of Deep Learning implementation and its longer-term impact on student learning outcomes, and subsequent research may develop quantitative instruments derived from the propositions generated in this study to test the interrelationships among variables on a broader and more measurable scale.

6. Acknowledgments

The authors sincerely thank all participants from the participating senior high schools in Makassar for their cooperation and valuable contributions to this research. The authors also acknowledge the support of their affiliated institution and colleagues whose constructive feedback helped improve the quality of this manuscript.

7. Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article. The authors confirm that the research was conducted independently and that no financial, institutional, or personal relationships influenced the study design, data collection, analysis, interpretation of the findings, or the preparation of this manuscript.

8. Author Contributions

G.I. conceptualized the research, designed the study, developed the research instruments, collected and analyzed the data, interpreted the findings, prepared the original manuscript, and coordinated the revision and finalization of the article. S.S.S. contributed to the research design, methodology refinement, data validation, interpretation of the findings, critical review of the manuscript, and manuscript revision. S.H. contributed to data organization, interpretation of the results, manuscript review, language refinement, and critical revision of the final manuscript. All authors actively participated throughout the research process, from the preparation stage to the completion of the study, have read and approved the final version of this manuscript, and agree to be accountable for all aspects of the work. The percentage contributions to the conceptualization, execution, writing, and revision of this manuscript are as follows: G.I.: 50%, S.S.S.: 25%, and S.H.: 25%.

REFERENCES

- Argyris, C., & Schön, D. A. (1978). *Organizational Learning: A Theory of Action Perspective*. Addison-Wesley.
- Bantwini, B. D. (2010). How teachers perceive the new curriculum reform: Lessons from a school district in the Eastern Cape Province, South Africa. *International Journal of Educational Development*, 30(1), 83–90. <https://doi.org/10.1016/j.ijedudev.2009.06.002>
- Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, 13(4), 544–559. <https://doi.org/10.46743/2160-3715/2008.1573>
- Biggs, J., & Tang, C. (2011). *Teaching for Quality Learning at University* (4th ed.). Open University Press.
- Buran, K., & Koşar, S. (2019). An analysis of school principals' course supervision activities in regard of instructional leadership. *Eğitimde Nitel Araştırmalar Dergisi*, 7(3), 1–34. <https://doi.org/10.14689/issn.2148-624.1.7c.3s.14m>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage Publications.
- Crossan, M. M., Lane, H. W., & White, R. E. (1999). An organizational learning framework: From intuition to institution. *Academy of Management Review*, 24(3), 522–537. <https://doi.org/10.2307/259140>
- Feriyanto, F., & Anjariyah, D. (2024). Deep learning approach through meaningful, mindful, and joyful learning: A library research. *Electronic Journal of Education, Social Economics and Technology*, 5(2), 45–53. <https://doi.org/10.33122/ejeset.v5i2.321>
- Fianingrum, F., Novaliyosi, N., & Nindiasari, H. (2023). Kurikulum Merdeka pada pembelajaran matematika. *Edukatif: Jurnal Ilmu Pendidikan*, 5(1), 132–137. <https://doi.org/10.31004/edukatif.v5i1.4507>
- Fullan, M., Quinn, J., & McEachen, J. (2018). *Deep Learning: Engage the World Change the World*. Corwin Press.
- Hallinger, P., & Murphy, J. (1985). Assessing the instructional management behavior of principals. *The Elementary School Journal*, 86(2), 217–247.
- Hallinger, P., & Murphy, J. F. (2013). Running on empty? Finding the time and capacity to lead learning. *NASSP Bulletin*, 97(1), 5–21. <https://doi.org/10.1177/0192636512469288>
- Hattie, J. (2012). *Visible Learning for Teachers*. Routledge.
- Kementerian Pendidikan Dasar dan Menengah Republik Indonesia (Kemendikdasmen). (2025). Peraturan Menteri Pendidikan Dasar dan Menengah Nomor 13 Tahun 2025 tentang Perubahan atas Peraturan Menteri Pendidikan, Kebudayaan, Riset, dan Teknologi Nomor 12 Tahun 2024 tentang Kurikulum pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, dan Jenjang Pendidikan Menengah.
- Kholidah, L. N., Winaryo, I., & Inriyani, Y. (2022). Evaluasi program kegiatan P5 kearifan lokal fase D di sekolah menengah pertama. *Edukatif: Jurnal Ilmu Pendidikan*, 4(6), 7569–7577. <https://doi.org/10.31004/edukatif.v4i6.4177>
- Laghung, R. (2023). Pendidikan karakter sebagai upaya mewujudkan profil pelajar Pancasila. *Cendekia: Jurnal Ilmu Pengetahuan*, 3(1), 1–9. <https://doi.org/10.51878/cendekia.v3i1.1950>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.
- Maharani, A. I., Isharoh, & Putri, P. A. (2023). Program P5 sebagai implementasi Kurikulum Merdeka: Faktor penghambat dan upayanya. *Jurnal Pendidikan, Bahasa, Sastra, Seni, Budaya, dan Sosial Humaniora*, 1(2), 176–187. <https://doi.org/10.59024/atmosfer.v1i2.153>

- Marzano, R. J., Waters, T., & McNulty, B. A. (2005). *School Leadership That Works: From Research to Results*. ASCD.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook* (4th ed.). Sage Publications.
- Nurhayati, N., Khairunnisa, K., Tarigan, S., & Lubis, M. (2025). Implementasi dan tantangan Kurikulum Merdeka di SMA: Strategi pengajaran berpusat pada siswa untuk pembelajaran yang lebih fleksibel dan kreatif. *Jurnal Pendidikan*, 13(1), 69–79.
- OECD. (2020). *The Future of Education and Skills 2030*. OECD Publishing.
- Pellegrino, J. W., & Hilton, M. L. (2012). *Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century*. National Academies Press.
- Pinheiro, G., & Alves, J. M. (2024). Organizational learning within the context of the functioning of educational teams: The progressive emergence of a professional metamorphosis. *Education Sciences*, 14(3), 247. <https://doi.org/10.3390/educsci14030247>
- Rahmawati, Y., Herlina, Lapasere, S., Gagaramusu, Y. B. M., Mas'adi, & Surahman. (2026). Teachers' understanding and implementation of the Merdeka Curriculum in Indonesian elementary schools. *Journal of Innovation and Research in Primary Education*, 5(1), 1094–1107. <https://doi.org/10.56916/jirpe.v5i1.2966>
- Ralebese, M. D., Jita, L. C., & Badmus, O. T. (2025a). Examining primary school principals' instructional leadership practices: A case study on curriculum reform and implementation. *Education Sciences*, 15(1), 70. <https://doi.org/10.3390/educsci15010070>
- Ralebese, M. D., Jita, L. C., & Badmus, O. T. (2025b). Perceptions and practices of principals: Examining instructional leadership for curriculum reform. *Frontiers in Education*, 10, 1591106. <https://doi.org/10.3389/feduc.2025.1591106>
- Robinson, V. M. J., Lloyd, C. A., & Rowe, K. J. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, 44(5), 635–674. <https://doi.org/10.1177/0013161X08321509>
- Shaked, H. (2022). Instructional leadership during the COVID-19 pandemic: The case of Israel. *Educational Management Administration & Leadership*, 52(3), 289. <https://doi.org/10.1177/17411432221102521>
- Senge, P. M. (1990). *The Fifth Discipline: The Art and Practice of the Learning Organization*. Doubleday.
- Song, H. (2014). The role of teachers' professional learning communities in the context of curriculum reform in high schools. *Chinese Education & Society*, 45(4), 81–95. <https://doi.org/10.2753/CED1061-1932450406>
- Stoll, L., Bolam, R., McMahon, A., Wallace, M., & Thomas, S. (2006). Professional learning communities: A review of the literature. *Journal of Educational Change*, 7(4), 221–258. <https://doi.org/10.1007/s10833-006-0001-8>
- Tam, A. C. F. (2015). The role of a professional learning community in teacher change: A perspective from beliefs and practices. *Teachers and Teaching*, 21(1), 22–43. <https://doi.org/10.1080/13540602.2014.928122>
- Widiansyah, S., Hidayat, S. P., Kamil, S. I., Purba, I. D. L. B., Rahmawati, U., & Khairo, F. M. A. (2024). Kesiapan guru dalam menghadapi tantangan implementasi Kurikulum Merdeka: Studi kasus di Sekolah Menengah Atas. *Harmoni Pendidikan: Jurnal Ilmu Pendidikan*, 2(1), 344–362. <https://doi.org/10.62383/Hardik.V2i1.1120>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage Publications.

Author Biographies

	Gita Irawanda, is a lecturer and researcher in the Educational Administration Study Program, Faculty of Education, Universitas Negeri Makassar, South Sulawesi, Indonesia. Her research interest focuses on Educational Institution Management. Email: gita.irawanda@unm.ac.id
	Sriwidayani Syam, is a lecturer and researcher in the Educational Administration Study Program, Faculty of Education, Universitas Negeri Makassar, South Sulawesi, Indonesia. Her research interest focuses on Educational Institution Management. Email: sriwidayani.syam@unm.ac.id
	Sri Hastuti, is a lecturer and researcher in the Educational Administration Study Program, Faculty of Education, Universitas Negeri Makassar, South Sulawesi, Indonesia. Her research interest focuses on Educational Institution Management. Email: sri.hastuti@unm.ac.id