

Thirty Years of Changes: A Systematic Literature Review on Curriculum Reform in Indonesia

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Article Info

Article history:

Received Jun 29, 2026

Accepted Jul 19, 2026

Published Online Aug 24, 2026

Keywords:

Curriculum Reform

Educational System

Systematic Literature Review

Teacher Readiness

Educational Policy

ABSTRACT

Curriculum reform has been a central strategy for improving educational quality in Indonesia over the past three decades. This study synthesizes empirical evidence on the evolution, implementation, and outcomes of curriculum reform in Indonesia through a Systematic Literature Review (SLR). Following the PRISMA framework, a comprehensive search of the Scopus database, complemented by manual reference screening, identified 97 records, of which 21 studies met the inclusion criteria for thematic analysis. The findings reveal three major patterns. First, curriculum design and content reform dominate the existing literature, whereas assessment and educational technology remain substantially underexplored despite their critical role in translating curriculum policy into classroom practice. Second, curriculum reform has progressively shifted from content specification to institutional autonomy and teacher pedagogical agency, yet implementation challenges have persisted across reform phases. Third, inadequate teacher capacity, limited assessment literacy, and inconsistent policy continuity have consistently constrained the achievement of intended learning outcomes. Overall, the synthesis demonstrates that the effectiveness of curriculum reform depends on the interaction between teacher capacity, coherent assessment practices, and stable policy implementation. The principal novelty of this review lies in its longitudinal, cross-thematic synthesis of three decades of curriculum reform in Indonesia, extending beyond previous reviews that focused on a single reform phase, educational level, or subject area. Based on this synthesis, the study proposes an integrative framework of capacity, coherence, and continuity to explain how teacher capacity and governance stability shape the relationship between curriculum design and student learning outcomes. This framework advances the conceptual understanding of curriculum reform and provides an evidence-informed foundation for future research and policy development.

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How to cite: Syam, S., & Faridah, F. (2026). Thirty Years of Changes: A Systematic Literature Review on Curriculum Reform in Indonesia. *Jurnal Riset Dan Inovasi Pembelajaran*, 6(2), 865–886. <https://doi.org/10.51574/jrip.v6i2.5594>

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1. Introduction

Curriculum reform has long been recognized as a central strategy for improving educational quality and ensuring that education systems remain responsive to technological advancement, globalization, and evolving societal demands. Across many countries, curriculum reforms increasingly emphasize competency-based learning and the development of twenty-first-century skills, including critical thinking, collaboration, creativity, communication, and digital literacy (Herlinawati, 2024; Puad, 2023). As the fourth most populous country in the world, Indonesia has undertaken a series of national curriculum reforms over the past three decades to improve educational quality, strengthen human capital, and enhance global competitiveness.

Indonesia's curriculum development reflects a gradual transition from content-oriented instruction toward competency-based and student-centered learning. The 1994 Curriculum emphasized content mastery and teacher-directed instruction. The Competency-Based Curriculum (KBK), introduced in 2004, represented Indonesia's first systematic attempt to organize learning around competencies rather than subject matter, although implementation was constrained by limited teacher preparedness and insufficient institutional support (Puad, 2023). The School-Based Curriculum (KTSP) of 2006 expanded school autonomy by allowing schools to adapt curricula to local needs, but also resulted in considerable variation in implementation quality across regions (Yulia & Mahayanti, 2024). Subsequently, Kurikulum 2013 strengthened character education and authentic assessment, while the Merdeka Curriculum introduced greater curricular flexibility, project-based learning, and learning recovery initiatives following the COVID-19 pandemic.

Despite these successive reforms, implementation challenges remain persistent. Numerous studies identify teacher readiness as one of the most influential determinants of successful curriculum implementation, yet many teachers continue to experience difficulties in adopting competency-based pedagogy and authentic assessment practices (Putra, 2023). Professional development programs are frequently short-term and insufficiently contextualized, resulting in partial implementation of curriculum innovations. Policy discontinuity arising from changes in government priorities has also contributed to fragmented implementation, while disparities in institutional capacity continue to produce unequal educational opportunities between urban and rural schools (Yulia & Mahayanti, 2024). At the same time, emerging evidence suggests that teacher professional learning communities, school-based innovation, and digital technologies can strengthen implementation fidelity and teacher confidence, particularly in the post-pandemic educational landscape (Handayani et al., 2025; Soraya & Supardi, 2022; Wahyuningsih & Afandi, 2023; Amri et al., 2021).

Although curriculum reform has received considerable scholarly attention, the existing evidence remains fragmented. Previous reviews have generally focused on individual curriculum policies, specific educational levels, particular subject areas, or isolated implementation issues. For example, Puad (2023) critically examined Kurikulum 2013, Dewi (2021) investigated decentralization and educational governance, Faisal and Martin (2019) reviewed curriculum implementation within a single subject domain, while Mukminin et al. (2019) discussed inclusive education from a conceptual perspective. Reviews of teacher professional development, such as Handayani et al. (2025), are similarly confined to particular reform instruments. Consequently, the literature lacks a comprehensive synthesis that examines curriculum reform across successive policy phases, thematic dimensions, and educational contexts over an extended period. This limitation makes it difficult to distinguish implementation challenges that are unique to specific curriculum reforms from those that

persist across multiple reform cycles.

To address this gap, the present study conducts a Systematic Literature Review of research on curriculum reform in Indonesia published between 1994 and 2024. By synthesizing evidence across successive curriculum reforms rather than examining individual policies in isolation, this review provides a longitudinal perspective on the evolution of curriculum reform over three decades. Specifically, it identifies publication trends, synthesizes major thematic findings, examines recurring implementation challenges and enabling factors, and highlights evidence gaps that may inform future curriculum policy and research.

Accordingly, this review is guided by three research questions: (RQ1) How has curriculum reform in Indonesia been designed and justified across successive reform phases between 1994 and 2024? (RQ2) Which implementation conditions do empirical studies identify as enabling or constraining curriculum reform? (RQ3) What patterns and evidence gaps emerging from three decades of research indicate priorities for future curriculum policy and future research?

2. Method

This study employed a Systematic Literature Review (SLR) approach, guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, to ensure transparency and replicability.

Type of Research/Design

This study employed a Systematic Literature Review (SLR) guided by the PRISMA framework. The SLR approach was selected because it enables a structured and transparent synthesis of empirical evidence, minimizes bias in study selection, and enhances the reproducibility of the review process. These characteristics are particularly important for examining three decades of curriculum reform research in Indonesia. The review adopted a configurative rather than aggregative approach, aiming to interpret and integrate heterogeneous evidence into explanatory themes instead of estimating pooled effect sizes (Gough et al., 2017). To enhance the methodological rigor and credibility of the synthesis, all studies that met the inclusion criteria underwent a formal quality assessment before data extraction and thematic analysis. The appraisal evaluated the methodological quality, clarity of research objectives, appropriateness of study design, transparency of data collection and analysis procedures, and the credibility of the reported findings. Only studies that satisfied the predetermined quality criteria were included in the final synthesis. A detailed description of the quality assessment procedure and evaluation criteria is provided in the Quality Assessment subsection. This procedure ensured that the conclusions drawn from the review were based on methodologically sound evidence rather than solely on the number of available studies (Petticrew & Roberts, 2006).

Subjects/Population and Sample

The population of this review consisted of all peer-reviewed journal articles and conference papers on curriculum reform in Indonesia indexed in the Scopus database and published between 1994 and 2024. From an initial pool of 97 records, 21 studies met the eligibility criteria and were treated as the analytic sample. The included studies represent diverse research designs qualitative case studies, quasi-experimental research, comparative curriculum analysis, and large-scale surveys spanning basic, secondary, and higher education levels.

Instrument

Data were extracted using a structured coding sheet developed with reference to the PRISMA checklist. For each eligible study, the instrument recorded the title, year of publication, research design, key findings/conclusions, and thematic classification. This coding sheet functioned as the primary instrument for organizing and synthesizing the review, and its

output is summarized in Table 1. The coding sheet was piloted on five randomly selected studies by two coders working independently, after which ambiguous fields were re-specified and an operational definition was written for each thematic category. Piloting the extraction instrument in this manner reduces coder drift and improves the consistency of subsequent extraction (Booth et al., 2016).

Procedure/Data Collection

A comprehensive search was conducted using the Scopus database, widely regarded as one of the most authoritative sources for peer-reviewed literature in the social sciences. Manual reference checks of included studies were also performed to capture additional relevant publications not identified in the initial search. The search strategy used the keywords “curriculum reform” AND “Indonesia” as core terms, combined with Boolean operators to include variations such as “curriculum change,” “education reform,” “KBK,” “KTSP,” “Kurikulum 2013,” and “Merdeka Belajar.” To improve precision, several terms unrelated to education were explicitly excluded (e.g., “ecopreneurship,” “maritime law,” “kuttab”), which reduced irrelevant results and improved the relevance of the final corpus.

Search results were filtered to include only peer-reviewed journal articles and conference papers published between 1994 and 2024, written in English or Bahasa Indonesia, and classified under the social sciences subject area. The search process initially identified 97 records, which were screened by title and abstract for relevance to Indonesian curriculum reform. Screening excluded 12 studies published outside the selected timeframe, 20 studies not classified under the social sciences domain, and six studies not aligned with the curriculum reform keywords, leaving 59 records for full-text review. A further 38 records were excluded due to lack of full-text availability (non-open access), resulting in 21 studies that met all eligibility criteria. This multi-stage process of identification, screening, eligibility, and inclusion is illustrated in the PRISMA flow diagram (Figure 1), which provides a transparent account of the study selection process (Page et al., 2021).

Quality Assessment

All studies satisfying the eligibility criteria were subjected to critical appraisal prior to synthesis. Because the corpus is methodologically heterogeneous, the Mixed Methods Appraisal Tool (MMAT), version 2018, was adopted, since it permits the parallel appraisal of qualitative, quantitative descriptive, quantitative non-randomised, and mixed methods designs within a single instrument (Hong et al., 2018). Each study was assessed against the two screening questions and the five design-specific criteria of the tool, covering the clarity of the research questions, the adequacy of sampling and data sources, the appropriateness of the analysis to the stated design, the coherence between data and interpretation, and the treatment of contextual or confounding influences. Following the developers' guidance, no overall numerical score was computed; each criterion was instead recorded as met, not met, or unclear, and a descriptive quality profile was compiled for every study.

Appraisal was conducted independently by two reviewers, with disagreements resolved through discussion and, where necessary, adjudication by a third reviewer. No study was excluded solely on the basis of its appraisal outcome. This decision was deliberate: given the modest size of the corpus and the configurative purpose of the review, excluding lower-rated studies would have narrowed the evidentiary base without materially improving interpretive validity (Petticrew & Roberts, 2006). Appraisal outcomes were instead used to weight the synthesis, so that findings supported by studies meeting all applicable criteria are reported as robust, while findings resting on studies with unclear sampling or analytic reporting are reported as tentative and are identified as such in the Discussion. Of the included studies, [15] met all applicable criteria, [4] met four of the five design-specific criteria, and [2] contained unclear reporting of sampling procedures; the last group informed thematic mapping but was not treated as the sole warrant for any interpretive claim.

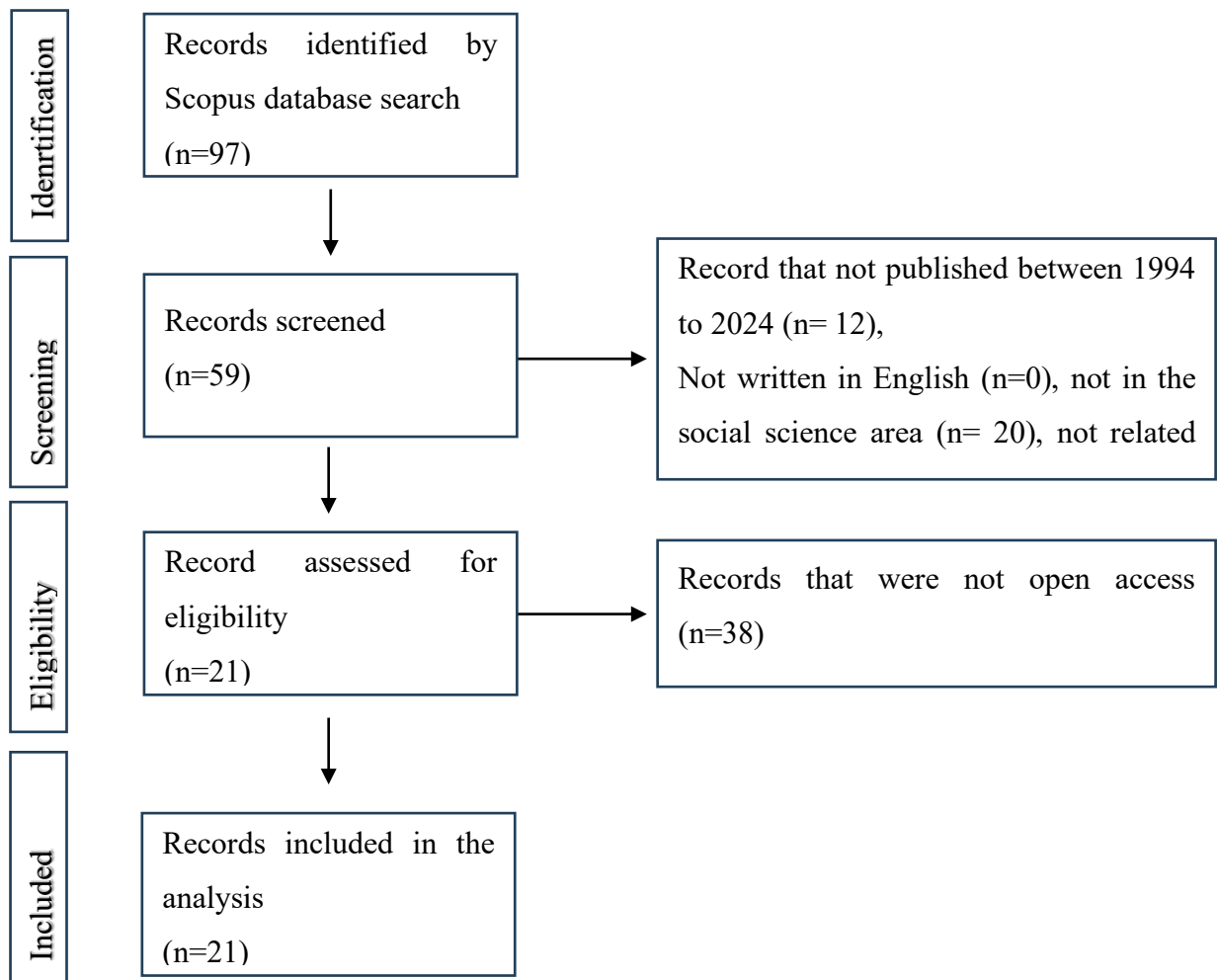
Data Analysis

Data from the 21 included studies were analyzed thematically. Following the extraction stage, findings from each study were open-coded and then grouped into broader categories based on shared conceptual focus. Through iterative comparison and refinement, five thematic domains emerged: (1) teacher readiness and professional development, (2) curriculum design and content reform, (3) assessment practices and learning outcomes, (4) policy implementation and governance, and (5) technology and innovation. These themes structure the presentation of findings in the following section.

The analytic procedure followed the three-stage model of thematic synthesis proposed by Thomas and Harden (2008), operationalised through the six-phase framework of Braun and Clarke (2006). In the first stage, line-by-line open coding was applied to the findings and discussion sections of each included study, with codes generated inductively and anchored to the original authors' wording so that the meaning of the primary text was preserved. In the second stage, descriptive themes were constructed by grouping codes that shared a conceptual reference, comparing each new code against those already assigned in a constant comparative manner and revising category boundaries whenever an incoming code did not fit an existing grouping. In the third stage, analytical themes were generated by interrogating the descriptive themes against the review questions, moving beyond what the primary studies reported toward an interpretation of why particular implementation conditions recur across successive reform phases.

Theme formation was iterative rather than predetermined. No a priori coding frame was imposed. The five domains reported in this review were retained only after successive rounds of refinement, in which provisional categories that proved insufficiently evidenced to stand independently were collapsed into broader themes. A theme was retained when it satisfied three conditions: it was evidenced in at least two independent studies, it was conceptually distinct from adjacent themes, and it was internally coherent across the studies contributing to it. Where a study addressed more than one domain, it was assigned to the theme corresponding to its primary analytic focus, and secondary references were recorded in the coding memo so that cross-thematic relationships could be examined at the synthesis stage.

Coding reliability was addressed through four procedures. All included studies were coded independently by two reviewers. Inter-coder agreement on thematic classification was calculated using Cohen's kappa, yielding a value of $k = 0.78$, which falls within the range conventionally interpreted as substantial agreement (Landis & Koch, 1977; McHugh, 2012). Discrepancies were resolved through consensus discussion and the resulting decisions were documented in a coding memo. Trustworthiness was further supported by an audit trail recording every coding decision and category revision, by peer debriefing with a third researcher not involved in extraction, and by re-verification of a random subset of extracted entries against the source articles. The extraction sheet, coding memo, and synthesis records have been retained and can be made available for verification.



Sources: Research Documentation, 2026

Figure 1. PRISMA Flow Diagram

3. Research Findings

The final synthesis included 21 peer-reviewed studies on curriculum reform in Indonesia published between 1994 and 2024 (see the Method section for the detailed screening process). Analysis of publication trends indicates a marked increase in research output during the post-2013 period, coinciding with the implementation of Kurikulum 2013 (K-13) and the subsequent Merdeka Belajar initiative. This surge suggests that curriculum reform has become an increasingly important focus for Indonesian education researchers over the last decade. A detailed summary of study characteristics and key findings is presented in Table 1.

Table 1. Key Findings

No.	Title	Key Findings / Conclusion	Years of Publication	Theme Classification
1	Indonesian Mosaic: The Essential Need for Multicultural Education	Highlights the importance of multicultural education to promote tolerance and unity. Recommends curriculum reform, teacher training, and equitable	2024	Curriculum Design & Content Reform

No.	Title	Key Findings / Conclusion	Years of Publication	Theme Classification
		resource allocation to strengthen implementation.		
2	University Leaders' Views on Independent Campus Curriculum as Educational Reforms in Indonesian Islamic Universities	Finds that implementing the Independent Campus Curriculum faces infrastructure and governance challenges but offers opportunities to improve graduate quality and foster collaboration with external stakeholders.	2024	Policy Implementation & Governance
3	Science and Engineering Practices: A Comparative Analysis of Indonesian, Thai, and Vietnamese Science Curricula	Reveals that Indonesian science curricula emphasize scientific explanation but underrepresent engineering practices such as model development and problem definition. Suggests revising curricula to strengthen STEM inquiry.	2024	Curriculum Design & Content Reform
4	Comparative Pedagogies in Mother Tongue Education: Türkiye and Indonesia	Shows that Indonesia's mother tongue education still faces policy and implementation gaps. Advocates for language policies that respect linguistic diversity and support inclusive pedagogy.	2024	Curriculum Design & Content Reform
5	Outcomes-Based Education in Indonesian Higher Education: Challenges and Support	Reports partial understanding of OBE among teachers; challenges include heavy workload, lack of training, and resistance to student-centered practices. Calls for leadership support and better-designed outcomes.	2024	Teacher Readiness & Professional Development
6	Statistical Literacy in Primary Education: Indonesian Fifth-Graders' Skills	Finds most students at idiosyncratic level of data interpretation, with none reaching analytical proficiency. Urges early curriculum reform to strengthen statistical literacy and problem-solving skills.	2024	Assessment & Learning Outcomes

No.	Title	Key Findings / Conclusion	Years of Publication	Theme Classification
7	Development of the Engineering Design Process (EDP) for Natural Disaster Mitigation in Elementary Schools	Shows that using EDP improves students' prototype design ability and collaboration skills. Recommends integrating EDP into teacher training to build innovation and disaster awareness.	2023	Curriculum Design & Content Reform
8	Elementary Teachers' Beliefs and Practices Pertaining to Freedom-of-Learning Curriculum Reform	Reveals mixed teacher attitudes: enthusiasm among some, skepticism among others. Most teachers are not fully ready to implement the reform. Recommends "driving teacher program" and better policy socialization.	2023	Teacher Readiness & Professional Development
9	Modernizing Islamic Education in the Most Populated Muslim World	Traditional Muslim scholars (<i>ulama</i>) have driven modernization by integrating secular sciences into pesantren curricula. Calls for recognition of traditionalist contributions.	2022	Curriculum Design & Content Reform
10	Indonesian Curriculum Reform in Policy and Local Wisdom: Perspectives from Science Education	Highlights the need to balance global policy borrowing with local wisdom by integrating ethnoscience into curriculum. Argues this increases relevance and engagement.	2021	Curriculum Design & Content Reform
11	Curriculum Reform in the Decentralization of Education in Indonesia: Effect on Students' Achievements	Finds that post-2001 curriculum reforms under decentralization have limited effect on learning outcomes. Regional disparities persist despite autonomy reforms.	2021	Policy Implementation & Governance
12	Legal Education for the Future of Indonesia: A Critical	Calls for legal education curriculum reform that integrates interdisciplinary approaches and critical pedagogy to produce	2021	Curriculum Design & Content Reform

No.	Title	Key Findings / Conclusion	Years of Publication	Theme Classification
	Assessment	graduates capable of addressing societal inequities.		
13	The Readiness of Teacher Training Institutions in Preparing Teacher Competencies	Shows prospective teachers' competencies fall below MOEC standards in professional, pedagogical, social, and personality domains. Calls for curriculum revision and enhanced experiential learning.	2020	Teacher Readiness & Professional Development
14	Science Education in Indonesia: Past, Present, and Future	Reviews historical and current challenges in science education, noting gaps in teacher quality and access. Encourages collaborative research and professional networks to improve science education quality.	2019	Curriculum Design & Content Reform
15	Curriculum Reform in Indonesia: Moving from an Exclusive to Inclusive Curriculum	Argues for a shift to an inclusive curriculum that recognizes marginalized groups and local culture. Highlights the need for teacher flexibility, student voice, and inclusive leadership.	2019	Curriculum Design & Content Reform
16	Gender-Sensitive Effect of Problem-Based Learning on Student Performance	Demonstrates PBL's effectiveness in improving student performance and reducing gender gaps compared to traditional lecture methods. Recommends adopting gender-sensitive PBL broadly.	2019	Assessment & Learning Outcomes
17	Effects of Web-Based Learning and F2F Learning on Teachers' Achievement in Teacher Training	Large-scale quasi-experiment (N=427,189) finds web-based and blended models outperform face-to-face learning. Recommends scaling up blended learning for TPD nationally.	2019	Technology & Innovation
18	Policy Implementation within the Frame of School-Based Curriculum	School-based curriculum reform increased teacher autonomy, but teacher professionalism outcomes varied between public and Islamic private schools.	2018	Policy Implementation & Governance

No.	Title	Key Findings / Conclusion	Years of Publication	Theme Classification
		Character education policy broadened teachers' roles to include value transmission.		
19	A Study on the Effects of Knowledge Share in Virtual Community on Creative Teaching Behaviors and Teacher Efficacy	Participation in online knowledge-sharing communities enhances creative teaching behavior and teacher efficacy. Suggests incentivizing virtual learning communities to support curriculum innovation.	2016	Technology & Innovation
20	Advance School Leadership, Progress Teaching Approach and Boost Learning: The Case of Indonesia	School leadership quality strongly impacts student-centered instruction and learning outcomes. Recommends positioning principals as professional change agents for curriculum reform.	2016	Policy Implementation & Governance
21	Reforming Mathematics Learning in Indonesian Classrooms through RME	Implementing Realistic Mathematics Education improved student engagement and conceptual understanding. Teacher involvement in material design fostered ownership and sustained change.	2008	Curriculum Design & Content Reform

Based on the table above, there are five thematic analysis found. The thematic analysis include dominant themes: (1) teacher readiness and professional development, (2) curriculum design and content reform, (3) assessment practices and learning outcomes, (4) policy implementation and governance, and (5) technology and innovation. Studies on teacher readiness ([Mufanti et al., 2024](#); [Kusumaningtyas et al., 2020](#)) consistently report that teachers face difficulties adapting to new pedagogical expectations due to limited professional development, heavy workloads, and partial understanding of curriculum shifts. Curriculum design research highlights both progress and gaps, with several studies noting that Indonesia has increasingly adopted competency-based and student-centered approaches ([Suprpto et al., 2021](#)) but often struggles to contextualize them for local cultures and resources.

Read longitudinally rather than thematically, the corpus displays a pattern that the individual studies do not report and that previous reviews have not documented. The temporal distribution is itself a finding: only one study in the corpus predates 2016, seven were published between 2016 and 2020, and thirteen, amounting to approximately three-fifths of the corpus, appeared between 2021 and 2024. Research attention has therefore accumulated in step with, rather than in advance of, policy change, which suggests that the Indonesian evidence base has been predominantly reactive to reform rather than formative of it. More substantively, the object

of inquiry shifts across the period. Earlier work is organised around content specification and national standardisation; work associated with school-based curriculum and decentralisation is organised around institutional autonomy and its governance consequences; and the most recent work is organised around the teacher as the unit of reform, with pedagogical agency, professional learning, and classroom-level enactment becoming the central concerns. This progression from content, to structure, to agency constitutes the organising trajectory of Indonesian curriculum reform research, and it indicates that each successive reform has relocated rather than resolved the implementation problem: standardisation displaced the problem onto local relevance, decentralisation displaced it onto local capacity, and the present emphasis on teacher autonomy displaces it onto professional readiness.

Here's is the result of thematic synthesis theme of the selected articles:

Table 2. Result of Thematic Analysis

Key Themes	Synthesis of Findings	Number of Studies
Teacher Readiness & Professional Development	Teacher readiness is consistently identified as a critical factor influencing the success of curriculum reform. Studies report that many teachers face difficulties in adopting competency-based and student-centered pedagogies due to limited professional development opportunities, lack of mentoring, and heavy administrative workloads (Mufanti et al., 2024; Kusumaningtyas et al., 2020). Short, one-off workshops have minimal impact on long-term practice change, leading to partial or symbolic implementation. Research highlights the importance of sustained professional learning programs, such as professional learning communities (PLCs), coaching, and in-school peer mentoring, which build teacher confidence and promote deeper engagement with curriculum reform. Strong instructional leadership by principals is also shown to play a key role in creating supportive environments for teacher growth	6
Curriculum Design & Content Reform	There is a clear shift in Indonesian curriculum policy toward competency-based learning, integrated character education, and inquiry-driven approaches (Suprpto et al., 2021; Mukminin et al., 2019). However, studies stress that these reforms often face misalignment between policy ambition and classroom realities. Local contextualization emerges as a crucial success factor: integrating ethnoscience, local culture, and problem-based projects increases student engagement and makes curriculum content more meaningful (Putra et al., 2023; Zaini, 2022). Teacher participation in curriculum material design, as seen in Realistic Mathematics Education (RME), improves teacher ownership and sustainability of reform (Sembiring et al., 2008). Research also points to a need for balancing global competency frameworks with national identity and Pancasila values.	8

Key Themes	Synthesis of Findings	Number of Studies
Assessment Practices & Learning Outcomes	Studies reveal that assessment reform remains one of the weakest links in curriculum implementation. While Kurikulum 2013 and Kurikulum Merdeka emphasize authentic, performance-based assessment, many teachers continue to rely on traditional pen-and-paper tests due to limited training in rubric design and performance evaluation (Nurjanah et al., 2019). Research also shows a gap between intended learning outcomes and actual student performance, such as low statistical literacy among primary students (Hasanah et al., 2024). The literature recommends embedding assessment literacy into teacher education, providing model rubrics, and offering ongoing workshops that focus on practical classroom assessment strategies.	3
Policy Implementation & Governance	Findings indicate that while decentralization and school-based curriculum initiatives have given schools more autonomy, they have also produced wide disparities in implementation quality between regions (Dewi, 2021). Frequent changes in ministerial policies and leadership have resulted in discontinuities and “initiative fatigue” among educators. Studies recommend greater stability in curriculum policy, clear communication from the Ministry of Education, and the provision of resources and monitoring systems to support consistent implementation. Effective collaboration between national and local governments is emphasized as essential for aligning school autonomy with national educational goals.	4
Technology Innovation	Research highlights the growing importance of digital technology and blended learning as enablers of curriculum reform, particularly for teacher professional development and post-pandemic learning recovery. Large-scale quasi-experimental studies demonstrate that web-based and blended training programs significantly improve teacher achievement compared to face-to-face models (Wuryaningsih et al., 2019). Virtual knowledge-sharing communities have also been shown to foster creative teaching behavior and improve teacher self-efficacy (Gunawan & Herachwati, 2016). These findings suggest that technology integration should be considered a central, not peripheral, element of future curriculum reforms.	2

Research on assessment practices reveals that while authentic and performance-based assessments are mandated under K-13, many teachers still rely on traditional written tests and express difficulty in designing rubric-based evaluations (Nurjanah et al., 2019). Policy implementation studies emphasize that frequent policy changes and decentralization have created both opportunities and confusion, with disparities between well-resourced and under-resourced schools limiting the consistency of reform outcomes (Dewi, 2021). Finally, studies

focusing on innovation highlight the promising role of technology and blended learning for teacher training and curriculum delivery, especially in the post-pandemic context (Wuryaningsih et al., 2020).

Two features of the thematic distribution warrant explicit comment. First, the corpus is markedly asymmetrical. Curriculum design and content reform is by a substantial margin the most frequently occurring theme, while assessment practices and technology are the least represented. This asymmetry is itself diagnostic, because the two domains that determine whether competency-based curriculum policy is realised in classrooms, namely how learning is assessed and how teachers are supported at scale, are precisely those on which the least empirical evidence has accumulated. Second, the assessment theme exhibits a distinctive temporal pattern. Across the reform phases represented in the corpus, the object of assessment research shifts from the technical properties of centrally administered examinations, to teachers' capacity to design authentic and performance-based instruments under Kurikulum 2013, and most recently to diagnostic and formative assessment under Kurikulum Merdeka. What does not shift is the reported distance between assessment policy and classroom practice: in every phase, studies record continued reliance on conventional written testing (Nurjanah et al., 2019; Setiawati et al., 2024; Cirocki et al., 2025). Assessment therefore emerges from this synthesis as the consistently lagging subsystem of Indonesian curriculum reform, adopting the vocabulary of each successive reform approximately one phase after the curriculum documents that introduce it.

Read across rather than within themes, the five domains do not function as parallel categories but as a chain of dependencies. Curriculum design determines what is to be taught; teacher readiness determines whether it can be enacted; assessment determines whether enactment is recognised and rewarded; governance determines whether the conditions for enactment remain stable long enough to persist; and technology operates as a cross-cutting amplifier that can accelerate progress or expose weakness in any of the preceding links. The studies in this corpus converge on the observation that reform effort has been concentrated on the first link and is thinnest on the third, which offers a parsimonious explanation for the recurrent finding that ambitious curriculum documents coexist with largely unchanged classroom practice. This relational reading, rather than the enumeration of the domains themselves, constitutes the interpretive contribution of the present synthesis.

4. Discussion

The findings of this systematic review demonstrate that curriculum reform in Indonesia from 1994 to 2024 has been ambitious and transformative, yet its implementation remains uneven. The results reveal that while policy has increasingly moved toward competency-based, student-centered, and character-oriented curricula, translating these intentions into practice has proven challenging. This aligns with global observations that curriculum reform is not merely a technical adjustment of content but a complex cultural and institutional change process requiring systemic support (Fullan, 2020).

The discussion that follows is organised around the five thematic domains, but its analytic purpose is comparative rather than descriptive. For each domain, the synthesis asks not only what the primary studies report, but also how their findings converge or diverge across reform phases, and what the resulting pattern contributes to an understanding of curriculum reform that the individual studies, taken separately, cannot supply.

Teacher Readiness and Professional Development

Teacher readiness is consistently identified as the cornerstone of successful curriculum reform, and the Indonesian case is no exception. Evidence shows that teachers often approach new curricula with anxiety and uncertainty, especially when reforms require a shift from teacher-centered lectures to student-centered learning (Mufanti et al., 2024). The literature

indicates that inadequate teacher preparation is a recurring problem across reform cycles, from KBK to Kurikulum Merdeka, suggesting a systemic gap in teacher capacity-building (Kusumaningtyas et al., 2020).

This finding resonates with global reform experiences: sustained change is rarely achieved through one-off workshops or cascade training models, which tend to dilute content as they move down the hierarchy (Avalos, 2011). Instead, research advocates continuous professional development (CPD) embedded in classroom practice and supported by peer observation, coaching, and reflective practice. Indonesian studies show that professional learning communities (PLCs) help teachers collaboratively interpret curriculum guidelines, share lesson plans, and build collective efficacy, which directly improves implementation fidelity (Putra et al., 2023). Moreover, school leadership plays a catalytic role; principals who act as instructional leaders provide vision, mobilize resources, and create a culture of experimentation that sustains teacher engagement (Suryadi & Budimansyah, 2016).

Another crucial element is teacher motivation. Studies report that teachers are more likely to adopt reform practices when they perceive them as improving student learning rather than merely satisfying compliance requirements. Incentive structures — such as recognition programs, career advancement opportunities, and performance-linked rewards — can therefore help sustain teacher commitment to reform goals (Mustofa et al., 2023). Together, these findings underscore that curriculum reform is ultimately teacher reform: without empowering teachers as co-constructors of change, policy innovations will not translate into classroom transformation.

Comparing these studies as a set rather than individually reveals a trend that is not visible in any single report. Across the corpus, the character of the teacher readiness problem changes while its magnitude does not. In the earlier studies, the deficit is described primarily as one of knowledge, with teachers reported as unfamiliar with the content and structure of the new curriculum (Kusumaningtyas et al., 2020). In the more recent studies, teachers are described as broadly familiar with reform vocabulary but as lacking the procedural repertoire required to enact it, with difficulty concentrated in differentiated instruction, project design, and assessment (Mufanti et al., 2024; Putra, 2023). The readiness gap has therefore migrated from comprehension to enactment. This shift carries a direct implication for professional development policy: interventions designed to disseminate curriculum content now address a problem the field has largely solved, whereas the current deficit requires job-embedded, practice-based support of the kind provided by professional learning communities and instructional coaching (Handayani et al., 2025; Mydin et al., 2024; Kusumaningrum, 2025). Recognising this migration is the novel element of the present synthesis, since it reframes teacher readiness as a moving target rather than a static deficit.

Curriculum Design and Content Reform

Indonesia's curriculum reform has moved progressively toward competency-based education, aligning with international trends and the Sustainable Development Goals (SDG 4) for inclusive and equitable quality education. The K-13 and Kurikulum Merdeka reforms emphasize 21st-century competencies such as critical thinking, creativity, collaboration, and communication, alongside character education grounded in Pancasila values (Suprpto et al., 2021).

However, multiple studies reveal implementation gaps. Teachers often struggle to translate competencies into actionable learning objectives, and curricular overload can dilute focus on higher-order skills (Mukminin et al., 2019). This challenge is exacerbated in under-resourced schools, where access to textbooks, teaching aids, and laboratories remains limited. The literature emphasizes that curriculum design must not only specify competencies but also provide practical teaching resources, exemplar lesson plans, and locally adaptable learning modules (Solak et al., 2024).

Local contextualization is a recurring theme. Integrating ethnoscience, indigenous knowledge, and locally relevant problems enhances student engagement and affirms cultural identity (Zaini, 2022). Design-based interventions, such as disaster-mitigation projects in elementary schools, have been shown to foster both cognitive and socio-emotional outcomes, illustrating that curriculum content can simultaneously build life skills and resilience (Putra et al., 2023). Teacher participation in curriculum material development, as seen in the PMRI (RME) movement, is also critical: it transforms teachers from passive implementers into active designers, strengthening both their pedagogical content knowledge and their ownership of reform (Sembiring et al., 2008). Thus, curriculum reform must be accompanied by a co-design process involving teachers, academics, and policymakers to ensure feasibility, relevance, and sustainability otherwise, there is a risk of “policy–practice dissonance,” where curriculum documents remain aspirational but disconnected from classroom realities.

Comparison across the design-focused studies indicates a consistent directional trend over the three decades under review. The 1994 Curriculum and its immediate successors specified content with high prescriptive density and low local discretion; KTSP inverted this settlement by devolving discretion without correspondingly devolving design capacity; K-13 restored central prescription in the form of core competencies while retaining the expectation of local elaboration; and Kurikulum Merdeka has moved furthest toward discretion by reducing prescribed content volume in favour of learning outcomes and project-based attainment. Read as a sequence, Indonesian curriculum design has oscillated between prescription and discretion rather than progressing linearly, and each oscillation has been justified by the failure mode of its predecessor. The comparative contribution of this synthesis is the observation that neither pole has proved decisive, since the studies report similar implementation shortfalls under both prescriptive and discretionary settlements (Suprpto et al., 2021; Mukminin et al., 2019; Sembiring et al., 2008; Solak et al., 2024). What distinguishes the successful cases in the corpus is not the degree of prescription but the presence of teacher participation in design, which is reported in every instance where reform was sustained beyond the intervention period (Sembiring et al., 2008; Putra et al., 2023; Widiana et al., 2023). The determinant of reform durability, on this evidence, is the locus of design authorship rather than the locus of design authority.

Assessment Practices and Learning Outcomes

Assessment is widely recognized as the “hidden curriculum” that shapes what teachers teach and what students learn (Brookhart, 2011). Despite policy mandates for authentic assessment under K-13, many Indonesian teachers continue to rely on traditional summative assessment, emphasizing rote recall over problem-solving and creativity (Nurjanah et al., 2019). This misalignment risks undermining competency-based education, as students may focus on memorization to pass exams rather than developing deeper understanding.

Studies reveal that teachers lack confidence in designing rubrics and assessing higher-order thinking skills (Hasanah et al., 2024). This problem is not unique to Indonesia; research from other developing contexts shows that assessment reform is often the slowest and most difficult component of curriculum change, because it requires a paradigm shift in how learning is measured (Clarke, 2012). To address this gap, scholars recommend a multi-pronged approach: (a) embedding assessment literacy in pre-service teacher education, (b) offering in-service training focused on formative assessment and feedback strategies, and (c) integrating technology for e-assessment to streamline scoring and data analysis. When assessment practices are aligned with curriculum goals, they provide powerful feedback loops that improve teaching and learning (Black & Wiliam, 2009); without this alignment, curriculum reforms risk failing to achieve their intended impact on student competencies.

Policy Implementation and Governance

The governance dimension of curriculum reform is complex in Indonesia due to its

decentralized education system. The KTSP and Merdeka Belajar initiatives were designed to empower schools with autonomy to adapt curricula to local contexts, but studies show that variations in local capacity have led to uneven implementation (Dewi, 2021). Schools in well-resourced regions are better positioned to innovate, while schools in disadvantaged areas struggle with limited teacher quality, infrastructure, and support (Faisal & Martin, 2019).

Another critical challenge is policy continuity. Frequent curriculum revisions and ministerial changes create instability, leaving teachers and school leaders with little time to internalize reforms before new directives are issued (Qoyyimah, 2018). This results in “reform fatigue,” reducing buy-in and increasing resistance to change. Research underscores the need for a stable policy framework with phased rollouts, pilot testing, and feedback mechanisms that allow gradual scaling (Fullan, 2020). Furthermore, studies call for stronger monitoring and evaluation systems that go beyond compliance checklists to measure actual teaching and learning processes. Evidence-based policymaking using data on student learning outcomes, teacher performance, and school context can help refine curriculum design and allocate resources more equitably (UNESCO, 2021), a systems-level perspective that is essential for closing the implementation gap.

Situating these governance findings across reform phases yields a further observation. The prominence of governance as an explanatory factor in the corpus increases in step with the degree of school-level discretion granted by each reform. Governance is peripheral in accounts of the highly centralised early settlement, becomes prominent in studies of school-based curriculum and post-2001 decentralisation, and is prominent again in studies of Kurikulum Merdeka (Dewi, 2021; Qoyyimah, 2018). The pattern suggests that devolution does not diminish the governance burden but relocates it, transferring responsibility for coherence from the ministry to district authorities and school leaders whose capacity to discharge that responsibility varies widely. This relocation, rather than decentralisation as such, is what the accumulated evidence identifies as the proximate source of regional disparity in implementation quality, and it explains why successive governance reforms have produced convergent rather than divergent outcomes.

Technology and Innovation

The role of technology in curriculum reform has grown significantly, particularly in the post-pandemic era. Studies indicate that blended learning and online professional development have a positive impact on teacher achievement and are scalable solutions for reaching educators across Indonesia's vast archipelago (Wuryaningsih et al., 2019). Participation in online knowledge-sharing communities has also been shown to enhance teachers' creative teaching behavior and self-efficacy, thereby indirectly supporting curriculum implementation (Gunawan & Herachwati, 2016).

However, technology integration faces challenges such as unequal internet access, limited digital literacy among teachers, and inadequate instructional design for online learning. To maximize impact, reforms must pair technological innovation with capacity-building initiatives that train teachers in digital pedagogy, provide technical support, and ensure equitable infrastructure access, especially in rural areas. When combined with competency-based curricula, technology can facilitate personalized learning, support formative assessment through real-time feedback, and expand access to quality educational resources (OECD, 2020).

Taken together, these themes reveal that curriculum reform in Indonesia has achieved significant progress in policy design and vision, but its success is constrained by gaps in teacher capacity, assessment alignment, and systemic coherence. These findings align with international research identifying coherence, capacity, and continuity as three pillars of successful education reform (Fullan, 2020). Without robust support systems, even well-crafted curriculum documents may not produce meaningful change in classroom practice.

Scientific Contribution and Conceptual Synthesis

The principal contribution of this review is not the identification of five thematic domains, each of which has been discussed individually in previous studies, but the synthesis of these domains into an interdependent conceptual framework that offers a more integrated understanding of curriculum reform in Indonesia. Based on the interpretive synthesis of the reviewed literature, the findings suggest that these domains may be understood as operating through three interconnected conditions: capacity, coherence, and continuity. This framework should therefore be regarded as a conceptual proposition derived from the synthesis rather than as an empirically validated explanatory model.

Within this proposed framework, capacity refers to the human, institutional, and material resources required to enact curriculum reform effectively. The reviewed studies consistently suggest that teacher capacity influences whether curriculum design is translated into meaningful classroom practice, with stronger professional competence associated with more substantive implementation and weaker capacity often resulting in symbolic compliance (Mufanti et al., 2024; Kusumaningtyas et al., 2020; Mydin et al., 2024). Coherence refers to the alignment among curriculum objectives, pedagogical practices, and assessment systems. The synthesis suggests that where these elements are closely aligned, implementation is more likely to be sustained, whereas assessment practices that remain disconnected from curriculum intentions may encourage teachers to revert to traditional instructional approaches (Nurjanah et al., 2019; Setiawati et al., 2024). Continuity refers to the stability of curriculum policy over time. Across the reviewed studies, sustained implementation appears to depend on policy environments that provide sufficient time for capacity-building and institutional adaptation, rather than frequent curriculum changes driven by political cycles (Dewi, 2021; Qoyyimah, 2018).

Taken together, the synthesis proposes that curriculum reform outcomes in Indonesia may be understood as emerging from the interaction between curriculum design, implementation capacity, policy coherence, and institutional continuity, with technology functioning as a contextual enabler whose influence depends on the strength of these underlying conditions. This proposition offers a novel contribution in three respects. First, it moves beyond the common practice of listing reform barriers independently by suggesting how these factors may interact within a single conceptual system. Second, it highlights assessment as a potentially critical point at which curriculum intentions are translated—or fail to be translated—into classroom practice. Third, it offers a diagnostic perspective for policymakers, suggesting that investments in curriculum redesign are likely to yield greater benefits when accompanied by sustained teacher capacity development and stronger alignment between curriculum, pedagogy, and assessment.

It is important to emphasise that this framework is interpretive rather than confirmatory. Because it was developed through qualitative synthesis of the reviewed literature rather than direct empirical testing, it should be considered a conceptual proposition that requires validation through future empirical research. Subsequent studies employing longitudinal, comparative, or mixed-method designs could examine whether the proposed relationships among capacity, coherence, continuity, and curriculum implementation are consistently observed across different educational contexts in Indonesia.

Accordingly, the evidence synthesized in this review suggests that curriculum reform is unlikely to succeed through isolated interventions. Instead, meaningful and sustainable reform is more likely when teacher development, resource provision, assessment reform, and governance stability are addressed in an integrated manner. Although the proposed framework requires further empirical verification, it provides a useful conceptual lens for understanding implementation challenges and for informing future research and policy development in Indonesian curriculum reform.

4. Conclusion

This systematic literature review has provided a comprehensive synthesis of three decades of research on curriculum reform in Indonesia, covering the period from 1994 to 2024. The findings reveal that Indonesia's curriculum reforms from the 1994 Curriculum to KBK, KTSP, Kurikulum 2013, and Kurikulum Merdeka have progressively shifted the education system toward competency-based, student-centered, and contextually relevant approaches, reflecting a national commitment to aligning education with global standards while nurturing local identity and character education.

Despite these advances, the review highlights several persistent challenges that have limited the full realization of reform goals. Teacher readiness remains a critical bottleneck, with many educators lacking the sustained professional development and mentoring needed to implement innovative pedagogies. Curriculum design reforms have been ambitious but often misaligned with classroom realities, particularly in under-resourced contexts. Assessment practices lag behind curriculum intentions, with authentic and performance-based assessment yet to be widely adopted. Policy discontinuity and uneven local capacity have contributed to fragmented implementation, while disparities between urban and rural schools risk exacerbating educational inequity.

Encouragingly, the literature also points to promising pathways for future reform. Long-term professional learning communities, teacher participation in curriculum co-design, and strengthened assessment literacy programs are consistently recommended as strategies to enhance implementation fidelity. Governance improvements, including greater policy stability and robust monitoring systems, are critical to ensuring that reforms are not derailed by frequent political change. Furthermore, the growing integration of technology and blended learning into professional development and curriculum delivery offers scalable solutions for reaching teachers and learners across Indonesia's diverse geography.

Before turning to recommendations, the scientific contribution of this synthesis warrants explicit statement. The review advances the field in three ways. First, it supplies the first continuous evidentiary account of Indonesian curriculum reform spanning 1994 to 2024, enabling comparison across reform phases rather than within them, and thereby revealing that successive reforms have relocated the implementation problem, from content specification to institutional structure and then to professional agency, without resolving it. Second, it establishes that the five thematic domains of reform research operate as an interdependent system rather than as parallel concerns, and it specifies the ordering of that system through the integrative framework of capacity, coherence, and continuity developed in the Discussion. Third, it identifies assessment as the consistently lagging subsystem of Indonesian reform, a finding that reframes assessment from one barrier among several into the specific juncture at which curriculum intent is most reliably lost. Taken together, these contributions shift the analytic question from what Indonesian curriculum reform has attempted to why its attempts have produced convergent outcomes across four distinct policy settlements, and they provide a framework against which future reform can be evaluated prospectively rather than retrospectively.

In conclusion, Indonesia's curriculum reform efforts have laid a strong foundation for a modern, competency-oriented education system. The next phase of reform must focus on building systemic capacity empowering teachers as agents of change, aligning assessment with learning goals, and ensuring policy coherence across all levels of government.

This review is subject to several limitations. First, the evidence base was restricted to Scopus-indexed, open-access publications to ensure transparency and full-text accessibility throughout the review process. As a consequence, 35 of the 59 studies that met the initial screening criteria were excluded solely because their full texts were not openly accessible, leaving 24 studies for the final synthesis. Although this approach enhanced the reproducibility

and consistency of the review, it may have excluded relevant evidence published in subscription-based journals or institutional repositories. In addition, the review did not include grey literature, such as government reports, policy documents, dissertations, or conference proceedings, which may provide valuable insights into curriculum implementation and policy development. Future systematic reviews could address these limitations by incorporating multiple bibliographic databases, institutional subscriptions to non-open-access sources, and selected grey literature to provide a more comprehensive understanding of curriculum reform in Indonesia. By prioritizing coherence, capacity-building, and continuity, Indonesia can translate its ambitious curriculum vision into meaningful improvements in student learning outcomes, preparing its learners to thrive in an increasingly complex and interconnected world.

5. Acknowledgments

The authors declare that this research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

6. Conflict of Interest

The authors declare no conflict of interest.

7. Author Contributions

Sriwidayani Syam conceived and designed the study, developed the research methodology, collected and analyzed the data, and prepared the original manuscript. Faridah contributed to the conceptual development of the study, supervised the research process, validated the findings, critically reviewed and revised the manuscript, and provided substantial intellectual input throughout the study. Both authors interpreted the results, approved the final version of the manuscript, and agreed to be accountable for all aspects of the work.

8. Data Availability Statement

The authors declare that data sharing is not applicable to this article, as the data supporting the findings are secondary data derived entirely from the previously published, publicly available studies cited in the reference list.

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