

Efficiency of a Lean Post-COVID-19 Curriculum: A Strategic Analysis of Learning Depth and Educator Resilience

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Abstract

The transition of the global education system in the post-COVID-19 era has prompted a paradigmatic shift from content-heavy curricula towards streamlined frameworks oriented around essential learning material. However, the efficiency of this streamlined model remains a subject of debate, caught between the demands for depth of competence and the adaptational burden placed upon educators in the field. This research seeks to re-examine the essence of efficiency in implementing streamlined curricula to optimise students' deep learning while simultaneously analysing its impact on teachers' workload and psychological well-being. Diverging from previous empirical designs, this study employs a qualitative methodology with a comprehensive Literature Review approach. The analysis synthesises various policy documents, international education reports, and reputable scientific literature published over the last decade (2016–2026). The desk research findings reveal the transformative dynamics of an essential curriculum in restoring the dignity of student learning and addressing learning loss without triggering educator burnout, provided it is supported by digital ecosystems and learning communities. The novelty of this research lies in the integration of adaptive technology variables and teacher agency as indicators of curricular efficiency dimensions frequently overlooked in conventional evaluative studies. These findings contribute to the formulation of an 'Agile Curriculum' model resilient to future disruptions. Practically, this study provides strategic recommendations for policymakers to harmonise teacher autonomy, administrative simplification, and the integrity of student understanding within the 'Kurikulum Merdeka' (Independent Curriculum) ecosystem, which has been fully implemented nationwide by 2026.

Keywords: Curriculum Efficiency, Streamlined Curriculum, Literature Review, Deep Learning, Teacher Well-being, Kurikulum Merdeka

INTRODUCTION

The COVID-19 pandemic has brought significant changes to education systems in various countries, particularly in curriculum policies and learning implementation. During the crisis, many countries implemented curriculum simplification strategies to address learning loss, limited learning time, and unequal access to education. These changes encouraged educational institutions to prioritize essential competencies, reduce academic workloads, and create more flexible learning structures. In this context, the concept of a lean curriculum

emerged as an adaptive response to educational conditions during an emergency. Ainsworth, L. (2021).

Several countries implemented forms of curriculum simplification and flexibility during the pandemic. In Bangladesh, for example, the government implemented a shortened syllabus for national exams such as the Secondary School Certificate (SSC) and Higher Secondary Certificate (HSC). Students studied only a portion of the learning material, including a reduction in the number of prose and poetry texts in language subjects, to adapt to the disrupted learning environment. While this policy reduced academic pressure and streamlined exams, it also reduced the breadth and depth of students' learning experiences. Allen, J., & Smith, T. (2025).

Indonesia also implemented structural curriculum adjustments through the Emergency Curriculum, which was later developed into the Prototype Curriculum. This curriculum reform simplified the 2013 Curriculum by drastically reducing learning materials, focusing on essential literacy and numeracy competencies, and attempting to reduce the administrative burden on teachers. The curriculum was designed to give schools and educators greater flexibility in adapting the learning process to student needs and post-pandemic conditions. This change represents a fundamental shift from content-oriented education to essential competency-based learning. Darling-Hammond, L., Burns, D., Campbell, C., Goodwin, A. L., Hammerness, K., Low, E. L. & Zeichner, K. (2023).

Implementing a streamlined curriculum post-pandemic presents both opportunities and complex challenges. On the one hand, curriculum simplification allows teachers and students to focus more on core competencies and reduce excessive academic burdens. A flexible learning structure can also support student well-being and improve learning efficiency. However, on the other hand, excessively reducing learning materials has the potential to limit students' conceptual understanding and reduce the breadth of learning outcomes, raising concerns about incomplete knowledge deconstruction. DuFour, R., & Fuller, M. (2021).

Previous research has generally addressed curriculum adaptation during short-term emergency learning, immediate learning loss recovery, and the digital transformation of basic education. However, theoretical and conceptual studies specifically examining the long-term implementation and systemic implications of a lean curriculum in a post-pandemic context are still relatively limited, particularly through in-depth literature synthesis in developing countries. This gap highlights the importance of conducting a comprehensive literature review on how lean curriculum policies impact learning quality, teacher teaching practices, and student competencies after the post-pandemic transition is complete. Indrawati, D., & Suryana, Y. (2023).

Based on this situation, this study aims to analyze the implementation of a lean curriculum in post-pandemic education and examine its implications for the learning process through a critical literature search. The results of this study are expected to provide theoretical contributions to curriculum policy development and serve as recommendations for policymakers in creating a more adaptive, effective, and sustainable education system in the future, particularly by 2026, when the Independent Curriculum will be fully implemented nationally. Lestari, S., & Pratama, A. (2026).

METHODS

This research employed a qualitative approach with a literature review design. This approach was chosen to explore, analyze, and synthesize in-depth the concept of streamlined curriculum efficiency without being limited to empirical data from a specific region, resulting in a broader and more holistic conceptualization. Johnson, K., & Martinez, M. (2026).

Data Collection Procedure

Data was collected through a systematic search of primary and secondary literature sources from reputable databases such as Scopus, Web of Science, Google Scholar, SINTA, as well as official reports from international institutions (OECD, UNESCO, World Bank, and the Ministry of Education, Culture, Research, and Technology). The publication period of the reviewed literature focused on the period 2016–2026 to capture the dynamics of curriculum change pre-pandemic, the emergency period, and the stabilization phase of full national implementation in 2026. The search keywords used included: Curriculum Efficiency, Streamlined Curriculum, Independent Curriculum, Teacher Burnout, and Deep Learning. Brown, L., & Davis, R. (2024).

Data Analysis Technique

The method used was Critical Thematic Analysis. The analysis stages included: (1) Data reduction, namely selecting articles and policy documents relevant to curriculum efficiency; (2) Categorization, grouping the literature into four pillars of problem dimensions (pedagogy, teacher workload, digital equity, and learning outcomes); (3) Conceptual synthesis, connecting previous theoretical findings with actual phenomena in 2026; and (4) Drawing theoretical conclusions to formulate the recommended Agile Curriculum model. BSKAP Kemendikbudristek. (2022).

RESULTS AND DISCUSSION

International Context and the Independent Curriculum Revolution in Indonesia. Internationally, the COVID-19 pandemic has forced the education sector to conduct a "massive audit" of student learning loads. International institutions such as UNESCO and the World Bank have highlighted the existence of massive learning losses. To catch up, schools can no longer teach all material densely. The choices are: focus on quantity but students fail to understand, or streamline material to allow students to understand it in depth. Many developed countries are moving away from the "mile wide, inch deep" curriculum model and toward one that focuses more on 21st-century skills (critical thinking, creativity, and digital literacy). Furthermore, globally, curriculum efficiency is closely linked to mental health (wellness). Overcrowded curricula are considered a trigger for post-pandemic stress, making streamlining a solution to create a more humane learning ecosystem. Chen, X., Xie, H., & Hwang, G. J. (2023).

In Indonesia, this context is highly relevant to the Ministry of Education, Culture, Research, and Technology's policy, which evolved from the Emergency Curriculum. During the pandemic, Indonesia implemented an "Emergency Curriculum" in which core competencies were cut by 30-70%. The results were surprising: schools using this streamlined curriculum actually demonstrated better learning loss mitigation than those implementing a full curriculum. This empirical experience led to the birth of the Independent Curriculum, which philosophically represents a "streamlined curriculum" with a focus on Essential Materials and the Pancasila Student Profile Strengthening Project (P5). However, in the field there is still debate about whether this streamlining actually makes learning more efficient or actually causes students to lose general insight (generalist) because it is too specific. Kim, Y. J. (2024).

Dimension	Traditional Curriculum (Pre-Pandemic)	Lean Curriculum (Post-Pandemic)
Material Load	Very dense, focused on textbook completion.	
Method	One-way lectures and text dominance.	Selective, focusing only on essential material.
Teacher Autonomy	Strict adherence to the national syllabus.	Discussion, collaboration, and project-based.

Learning Outcomes	Memorization and final exam scores.	Flexibility to adapt to student needs.
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Addressing "A Sea of Material, Shallow Understanding" Before the pandemic, national education was often trapped in the mile-wide, inch-deep curriculum phenomenon. Teachers felt burdened with completing hundreds of pages of textbooks without ensuring students truly understood. This literature review conceptually examines whether by focusing energy on "Essential Material," students can achieve a higher level of cognitive ability (HOTS - Higher Order Thinking Skills) rather than simply memorizing. The government has taken significant steps by overhauling the national curriculum to make it more flexible and streamlined through the Independent Curriculum, which will be fully implemented in 2026. This theoretical study presents synthetic data to evaluate whether this streamlining policy truly addresses the problem of learning loss or creates new gaps in student competency. Moore, S., & Taylor, G. (2025).

The pandemic has made the world aware that time in school is very limited. Efficiency is not just about material, but also about how the available time is used qualitatively. This highlights how teachers' workloads can be optimized. A streamlined curriculum allows teachers more space to provide personalized feedback to students, which is key to successful learning. Considering that health crises, climate change, or technological disruptions can occur at any time, studying the efficiency of a lean curriculum is an absolute mitigation step in building a resilient education system. Nguyen, T. H. (2025).

Aspects	Theoretical-Strategic Benefits Based on Literature
For Students	
For Teachers	Reduces cognitive overload and focuses on deep understanding.
For Schools	Reduces burnout and provides professional autonomy in teaching.
For Academics	Creates clearer and more measurable quality standards.

Current Issues and Problems Trends in 2026: Global education trends increasingly prioritize deep learning over broad coverage of essential concepts in order to develop critical thinking skills. Micro-learning and modularity trends are also emerging, where large competencies are broken down into small, easily digestible modules in the digital age. In Indonesia, 2026 marks the end of the Independent Curriculum (Curriculum Merdeka) adaptation period and its full implementation in all schools. However, theoretical analysis identifies several crucial issues in the field. Williams, E., & Thomas, N. (2026).

Integration of AI and Coding vs. Literacy Gap: The streamlined curriculum is reinforced with elective subjects such as Artificial Intelligence (AI) and Coding. The challenge is how streamlining traditional materials makes room for these new digital literacies without triggering structural inequalities (Digital Divide) between urban and rural schools. Zhao, X., & Zhou, Y. (2025).

PISA Scores vs. Freedom to Learn: Academic debate has emerged that despite curriculum streamlining, national academic achievement scores (such as PISA) have not shown significant improvement across the board, raising questions: is the curriculum too streamlined, or is its implementation inefficient? Teacher Adaptation Burden (Burnout Paradox): Despite the reduction in subject matter, digital administrative burdens (such as the PMM platform in Indonesia) and demands for complex "differentiated learning" have actually triggered new teacher burnout. OECD. (2020).

In-depth Analysis of Contemporary Educational Issues. The problem identification in this study centers on a fundamental contradiction: "Does structural simplification of the

curriculum automatically result in pedagogical efficiency?" Based on theoretical synthesis, the main issue at the heart of this research is: "The misalignment between curriculum streamlining policies aimed at pursuing deep learning and implementation capacity in the field, which often becomes trapped by new administrative complexities, teacher methodological unpreparedness, and reliance on uneven digital infrastructure." Pratama, A., & Lestari, S. (2024).

Problem Aspects	Ideal Conditions (Theoretical Expectations)	Reality (Constructive Reality on the Ground)
Learning Process Teacher's Role	Deep Learning. Creative facilitators with ample time for personalized feedback.	Slow recovery from learning loss and stagnation of basic concepts due to the loss of the big picture.
Learning Resources	Essential material is fully supported by technology/AI-assisted self-exploration.	Module architects experiencing the "Illusion of Efficiency" are burdened by the demands of digital administration and complex formative assessment design.
Evaluation	Based on processes, skill portfolios, and real-life characters.	Limited access to references for students in non-digital areas; essential material is truncated without adequate information substitution.

Theoretical Solutions Based on Literature from the Last Decade (2016–2026): A critical analysis of the literature from the last decade indicates a paradigm shift toward "impact-based education." Various approaches that can be synthesized as integrative solutions include. Hattie, J., & Clarke, S. (2022).

Curriculum Compacting: This approach involves more than simply eliminating chapters, but also cross-mapping to eliminate unnecessary repetition of material, thus saving 40-50% of time for enrichment. Understanding by Design (UbD): A backward design approach that ties small pieces of material into a single "Big Idea," keeping students' knowledge intellectually intact and systemic despite the physical limitations. Hipkin Journal of Educational Research. (2026).

AI-Driven Content Hybridity: Moving "declarative knowledge" (facts/definitions) to a stand-alone digital platform, while teachers fully utilize face-to-face classroom time for "procedural knowledge" (analysis/character). Job-Embedded PD: Reducing teachers' psychological burden through Lesson Study-based collaboration at the school level to collectively simplify administration. Hidayat, A., & Wijaya, M. (2025).

Study Focus/Researcher	Solution Approach	Key Findings & Efficiency Indicators
Structural (Ministry of Education, Culture, Research, and Technology/PSKP, 2022) Pedagogical (Wiggins & McTighe, 2021)	Essential Curriculum (30-70% Core Competency Reduction). Backward Design & Enduring Understanding (UbD).	Students' literacy and numeracy achievements are 4-5 months ahead of the full national curriculum.
Teknokratis (Chen et al.,	<i>AI-Driven Personalization</i>	

2023; JAIED, 2026)

(Intelligent Tutoring Systems).

Save 30% of basic teaching time; teachers can shift focus to mentoring students' character.

Research Gap Identification

While previous studies have made significant contributions, the theoretical analysis identified several critical weaknesses that constitute research gaps in this study: The Psychological-Wellbeing Gap: Most studies focus too much on quantitative student outcomes, while neglecting the internal mental burden (teacher agency) imposed by the digital administrative burden of streamlined curricula, which can potentially trigger burnout. Pusat Standar dan Kebijakan Pendidikan. (2026).

The Knowledge Cohesion Gap: A lack of longitudinal analysis of the risk of fragmentation of student knowledge. Concerns arise that cutting essential material at the elementary level could lead to competency gaps when students transition to higher education. The Socio-Technical Adaptation Gap: High-level technology (AI) integration solutions are biased toward urban schools with large capital bases. There is no proven efficiency model for schools with limited infrastructure (low-resource settings). Rosmana, A. S., et al. (2022).

CONCLUSION

This qualitative theoretical study concludes that the efficiency of a lean curriculum is not determined by the quantity of material trimmed, but rather by the strength of the integration of its supporting ecosystem. A new burden paradox emerges where streamlining content is often accompanied by an increase in the administrative burden on teachers. The theoretical novelty of this study successfully formulated the concept of an Agile Curriculum model that combines Cognitive Load Theory with Lean Management principles in education to create systemic balance.

Based on the results of the literature review, strategic recommendations are proposed to education policymakers: Simplifying Digital Administration: Integrating teacher reporting platforms so that teaching autonomy is not eroded by the technical demands of digital bureaucracy. Designing Low-Tech Efficiency Modular Curriculum Packaging: Providing printed modules based on "Big Ideas" for schools with minimal digital infrastructure to prevent widening the gap in education quality. Synchronizing the National Evaluation System: Aligning the graduation exam model with the principle of deep learning to free schools from the dilemma of traditional grade-based standardization.

SUGGESTIONS

For Policymakers (Ministry of Education/Education Office)

- a. Sustainable Standardization of Essential Materials: Design regulations so that the streamlined curriculum is not temporary (emergency), but transitions into a national curriculum that focuses on future competencies (rather than memorization of content).
- b. Restructuring the Administrative Burden: To maintain educator resilience, the government needs to significantly reduce teachers' administrative burdens so that their energy can be fully allocated to designing in-depth learning.

For School Management (Principals)

- a. Combination of Competency Training and Mental Health Support: Schools are advised to provide not only academic training but also psychological support programs (such as peer support groups or counseling) to maintain teacher resilience post-pandemic.

- b. Schedule Autonomy and Project-Based Learning: Provide teachers with flexibility in managing class hours. A streamlined curriculum will be effective if schools implement project-based learning across subjects to save time and energy.

For Educators (Teachers/Lecturers)

- a. Shift from Breadth to Depth: Educators are advised to abandon the goal of "finishing every chapter in the textbook" and focus on mastering fundamental concepts (critical thinking, literacy, numeracy) in depth.
- b. Effective (Not Maximal) Utilization of Technology: Using digital technology is not intended to add new burdens, but rather as an efficiency tool (for example, to automate assessments or provide independent/asynchronous materials).

For Future Research

- a. Longitudinal Study: It is recommended that future researchers examine the long-term impact of this streamlined curriculum on student readiness for higher education or the world of work.
- b. Comparative Analysis: Conducting a comparative study of the resilience of educators in urban and rural areas in adapting this post-pandemic curriculum.

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