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Curriculum, Instruction, and Assessment Coherence: An Integrative Literature Review for Strengthening Educational Policy

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Abstract:
Coherence among curriculum, instruction, and assessment is essential to achieving educational objectives and student competencies. However, misalignment among curriculum standards, instructional implementation, and assessment practices may hinder intended learning outcomes. This study synthesizes literature on curriculum, instruction, and assessment coherence, identifies factors influencing its implementation, and proposes an integrative framework for strengthening educational policy. An integrative literature review was conducted using sources retrieved from Scopus, ERIC, Google Scholar, Crossref, Garuda, and relevant journal websites. Eligible sources comprised empirical studies, theoretical publications, and relevant policy documents, primarily published between 2018 and 2026; earlier seminal works were retained for their foundational conceptual contributions. Thematic synthesis identified four dimensions: curriculum and instructional coherence, assessment alignment with learning outcomes, factors supporting or constraining implementation, and an integrative coherence framework. The proposed framework connects curriculum objectives, instructional activities, assessment evidence, and continuous improvement through three mechanisms: coherence audits, teacher professional development, and evidence-informed assessment feedback. Its contribution is to connect classroom-level alignment with institutional support and policy improvement in a continuous, reciprocal process. Further empirical validation across educational contexts is required.

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Introduction (مقدمة)

The quality of education is determined not only by the existence of a comprehensively designed curriculum but also by the capacity of the education system to translate curriculum

objectives into consistent instructional and assessment practices. The curriculum establishes the competencies to be achieved, instruction provides learning experiences through which students develop those competencies, and assessment generates evidence of the extent to which learning objectives have been attained. These three components should constitute an integrated system in which each component is interconnected and mutually reinforcing. When the competencies established in the curriculum are not supported by relevant instructional activities, or when assessment measures abilities that differ from the intended learning objectives, the educational process risks experiencing a misalignment between objectives, implementation, and learning outcomes. Therefore, efforts to improve educational quality should focus not only on improving each individual component but also on strengthening coherence among curriculum, instruction, and assessment (Ali, 2018; Atuhurra & Kaffenberger, 2022; Jin et al., 2019).

Although these perspectives share an emphasis on the relationship between learning objectives, teaching, and assessment, they explain coherence from different analytical starting points. Shepard (2000) foregrounds the cultural and epistemological role of assessment, arguing that assessment should be embedded in a learning culture rather than isolated as a terminal measurement. Black & Wiliam, (2009), by contrast, provide a more explicitly formative account in which evidence of learning informs immediate instructional adjustments and subsequent learning activity. Constructive alignment, as articulated by (J. Biggs, 1996) and J. B. Biggs & Tang, (2011), focuses more directly on the design relationship between intended outcomes, learning activities, and assessment tasks. Wiggins & McTighe, (2005) share this design-oriented concern but organize it through backward planning, beginning with desired results and acceptable evidence before selecting learning experiences. These approaches are therefore complementary, but not interchangeable: constructive alignment and backward design primarily clarify how coherence should be planned, whereas formative assessment and the learning-culture perspective explain how evidence should inform learning during implementation. Jin et al., (2019) extend the discussion beyond the design of an individual course or classroom by distinguishing horizontal relationships among curriculum, instruction, and assessment from vertical connections across classroom and large-scale assessment. Taken together, these perspectives suggest that coherence requires both a planned correspondence among components and an ongoing process through which evidence is interpreted and acted upon.

In educational research, curriculum, instruction, and assessment coherence refers to the interconnectedness among targeted competencies, designed learning experiences, and the evidence used to evaluate student achievement. Through their review of research on learning progressions, Jin et al., (2019) identified horizontal coherence, which connects curriculum, instruction, and assessment, and vertical coherence, which links classroom assessment with large-scale assessment. Consistent with this perspective, Ali, (2018) explains the importance of constructive alignment, namely, the alignment among intended learning outcomes, teaching and learning activities, and assessment tasks.

This conceptual foundation can be further developed through J. B. Biggs & Tang, (2011), who position constructive alignment as a fundamental principle of outcomes-based instructional design. Within this approach, instructional planning begins with the identification of expected competencies, which are subsequently translatedz into learning activities and assessment tasks that enable students to demonstrate those competencies. Through the Understanding by Design approach, Wiggins & McTighe, (2005) likewise emphasize the importance of designing instruction by first identifying desired learning outcomes, determining acceptable evidence of achievement, and subsequently developing appropriate learning experiences. Both approaches demonstrate that the relationships among objectives, evidence, and learning activities need to be established during the planning stage rather than merely examined after instruction has been completed.

Although coherence has received considerable attention in the literature, its implementation within education systems continues to face significant challenges. Through their research on curriculum standards, national examinations, and teaching practices in Tanzania and Uganda, Atuhurra & Kaffenberger, (2022) identified substantial misalignment among these three components. Their findings demonstrate that the existence of curriculum documents and formal assessment instruments does not automatically guarantee coherence in educational practice. In the context of higher education, Derouich, (2025) also proposed an alignment framework connecting course learning outcomes with program learning outcomes, complemented by feedback mechanisms to support continuous curriculum improvement.

These findings should also be interpreted by considering the characteristics of assessment and the interpretation of its results. However, the existing studies address different parts of the coherence problem rather than examining the full relationship between classroom-level instructional processes and system-level policy arrangements. Atuhurra & Kaffenberger, (2022) offer an important system-level analysis by comparing curriculum standards, national examinations, and teacher instruction across two national contexts; their emphasis is on identifying the extent and pattern of system alignment. Derouich, (2025), in contrast, concentrates on outcome-based alignment between course learning outcomes and program learning outcomes in higher education, with feedback loops directed toward curriculum improvement. Studies in Indonesia have a more context-specific emphasis: Tiana & Maruf, (2024) examine the alignment of summative test items with curriculum learning objectives, while Shintia Ningrum et al., (2025) review assessment alignment in the implementation of the Merdeka Curriculum in primary education. These contributions clarify important dimensions of alignment, but their respective units of analysis and emphases do not, on their own, explain how curriculum intentions are translated into classroom learning activities, how assessment evidence is used to adjust those activities, and how such classroom processes connect to institutional and policy-level support. The gap, therefore, is not an absence of research on alignment, but a lack of an integrated synthesis that brings together (1) the substantive quality of alignment among intended competencies, instructional experiences, and assessment evidence; (2) the formative use of that evidence in classroom decision-making; and (3) the policy and organizational conditions that enable or constrain these practices. This distinction provides the specific rationale for the present integrative review.

The issue of coherence has become increasingly relevant in the Indonesian context, particularly as curriculum policy changes require adjustments in instructional planning, teacher competencies, assessment practices, and school governance. Through an integrative literature review on the transformation of Indonesian curriculum policy, Mursidah et al., (2026) discuss the need for policy adaptation in response to global changes, alongside implementation challenges associated with the capacity of implementing actors and the conditions of the education system. Meanwhile, Shintia Ningrum et al., (2025) examine the alignment of assessment with learning outcomes in the implementation of the Merdeka Curriculum in Indonesian elementary schools.

Regarding policy implementation, Fullan, (2007) emphasizes that educational change involves a complex process, including understanding the objectives of change, developing the capacity of implementing actors, and establishing organizational conditions that support implementation. This perspective is relevant because curriculum change cannot be treated merely as the replacement of documents or administrative instruments. Its success depends on the ability of schools and teachers to translate policy directions into meaningful practices for students. However, this perspective serves as a conceptual foundation for examining implementation issues rather than direct evidence that all schools in Indonesia experience the same coherence-related problems. Overall, previous studies have made important contributions to explaining coherence from the perspectives of learning progressions, instructional design, the alignment of

standards with teaching practices, learning outcome alignment, and curriculum policy transformation (Ali, 2018; Atuhurra & Kaffenberger, 2022; Derouich, 2025; Jin et al., 2019; Mursidah et al., 2026; Shintia Ningrum et al., 2025). Nevertheless, these studies differ in their respective research focuses and units of analysis.

The connection between classroom coherence and educational policy is consequential because policy objectives become educational outcomes only through the instructional decisions made by teachers and the learning experiences encountered by students. Policy establishes expected competencies, curriculum structures, assessment expectations, and conditions for implementation; schools interpret these directions through institutional planning, resource allocation, professional learning, and instructional supervision. Teachers then translate them into lesson objectives, learning tasks, assessment practices, and feedback. The relationship is not simply a one-way process. Classroom assessment and evidence of student learning can reveal whether policy expectations are feasible, whether teachers have sufficient support, and where curriculum or assessment guidance requires clarification. In this sense, classroom-level coherence provides an operational point at which policy intentions can be examined, while policy-level coherence determines whether teachers have the time, expertise, resources, and institutional support needed to enact those intentions. Without this connection, policy implementation may be evaluated through document compliance or formal adoption, even when the intended competencies are not consistently represented in teaching and assessment. Conversely, evidence from classroom practice can inform institutional review and subsequent policy refinement. This reciprocal relationship gives practical significance to the horizontal coherence of curriculum, instruction, and assessment and the vertical coherence linking classroom practice with institutional and system-level decisions (Elmore, 2005; Fullan, 2007; Jin et al., 2019).

These differences create an opportunity to develop a synthesis that connects instructional design with educational governance. Through his discussion of the relationship between policy and the core practices of instruction, Elmore, (2005) demonstrates the importance of understanding how decisions at the organizational and system levels relate to the teaching activities that actually take place. Within the framework of this study, this perspective helps explain why coherence needs to be analyzed at more than one level: the relationships among objectives, activities, and assessment in the classroom, as well as the relationships among policy, implementation support, and educational practices. Accordingly, the research gap is not based on the claim that coherence has never been examined, but rather on the need to synthesize pedagogical and policy dimensions within a single operational analytical framework.

The need to examine this issue carries both conceptual and practical significance. Conceptually, coherence needs to be understood as an interrelationship among components operating horizontally, namely, between curriculum objectives, instructional activities, and assessment, as well as vertically, namely, between policy directions, implementation at the institutional level, and the evaluation of learning outcomes. Regarding the use of assessment results, Hattie & Timperley, (2007) demonstrate that feedback can support learning, although its effectiveness depends on its form and manner of delivery. Information about learning outcomes only has improvement value when it helps students understand their current level of achievement, the goals they are expected to attain, and the subsequent steps they need to take. Therefore, coherence extends beyond the alignment of objectives and assessment instruments to encompass the capacity of the education system to utilize assessment results as a basis for improvement actions.

Based on the foregoing discussion, this study aims to analyze and synthesize the literature on curriculum, instruction, and assessment coherence; identify factors that support or hinder the realization of coherence at the policy and educational practice levels; and formulate policy recommendations to strengthen the interconnections among these three components in a

sustainable manner. This study employs an integrative literature review approach, using thematic analysis of relevant scholarly sources.

Method (منهج)

This study employs a qualitative approach using the integrative literature review method to synthesize empirical findings, theoretical perspectives, and policy studies concerning curriculum, instruction, and assessment coherence (Snyder, 2019). The literature search was conducted through Scopus, ERIC, Google Scholar, Crossref, Garuda, and relevant journal websites, with priority given to publications from 2018 to 2026. The keywords used included curriculum coherence, curriculum alignment, constructive alignment, learning assessment, and education policy implementation, along with their Indonesian equivalents.

The literature was selected based on its relevance to the research focus, the clarity of bibliographic information, and its contribution to explaining the relationships among curriculum, instruction, assessment, and educational policy implementation. The selection process involved title and abstract screening, duplicate removal, and full-text examination. The data were analyzed thematically through the identification, categorization, and comparison of findings to uncover patterns of coherence, supporting and inhibiting factors, and their implications for educational policy. The synthesis results were used to formulate a conceptual framework and policy recommendations based on the analyzed literature evidence.

The inclusion criteria were: (1) publications addressing at least one substantive relationship among curriculum, instruction, and assessment, or examining the connection of these components with educational policy or institutional implementation; (2) empirical studies, theoretical or conceptual publications, and relevant policy documents that contributed evidence or an analytical perspective to the review questions; (3) publications written in English or Indonesian; and (4) publications from 2018 to 2026, with earlier seminal works included when their conceptual contribution was necessary to explain the development of coherence, alignment, or assessment theory. Sources were excluded when they (1) discussed curriculum, teaching, or assessment without a substantive connection to the review focus; (2) addressed unrelated educational topics; (3) were duplicate records; (4) lacked sufficient bibliographic or substantive information for appraisal; or (5) consisted of non-scholarly materials that did not provide an authoritative policy or conceptual contribution. These criteria were applied during title and abstract screening and subsequently confirmed through full-text examination.

The relevance and quality of each full-text source were considered separately. Relevance was assessed according to the source's direct contribution to the review questions, its treatment of the relationships among curriculum, instruction, and assessment, and its usefulness for explaining classroom practice, institutional support, or policy implementation. Quality appraisal was adapted to the type of publication rather than applying a single instrument indiscriminately. Empirical studies were examined in terms of clarity of purpose, appropriateness of research design, transparency of data collection and analysis, support for the reported findings, and acknowledgement of limitations. Theoretical and conceptual publications were considered in terms of conceptual clarity, logical consistency, engagement with relevant scholarship, and contribution to explaining coherence. Policy documents were considered in terms of issuing authority, relevance to the review focus, clarity of policy provisions, and usefulness for understanding implementation. Sources with limited methodological or conceptual strength were not treated as equivalent to stronger evidence; their claims were interpreted cautiously and used only where their contribution was relevant.

The thematic analysis followed an iterative process. First, the included sources were read

to obtain an overall understanding of their aims, contexts, methods, and findings. Second, relevant information was extracted and coded according to concepts concerning curriculum objectives, instructional activities, assessment design and use, teacher capacity, institutional conditions, and policy implementation. Third, related codes were compared and grouped into broader categories. Fourth, the categories were examined across empirical, theoretical, and policy sources to identify convergences, differences, and gaps. Finally, the categories were refined into the main themes reported in the Results section: (1) curriculum and instructional coherence as the foundation for competency achievement; (2) alignment of assessment with learning outcomes; (3) supporting and inhibiting factors in coherence implementation; and (4) an integrative framework for curriculum, instruction, and assessment coherence. The synthesis emphasized both recurring patterns and context-specific differences, rather than treating all sources as providing the same type or strength of evidence.

Result (نتائج)

This section presents a synthesis of the literature on curriculum, instruction, and assessment coherence in supporting the achievement of student competencies. The synthesis was conducted by identifying patterns of findings, common perspectives, and differences in research findings concerning the relationships among curriculum objectives, instructional implementation, and assessment practices. The findings were categorized into four main themes: curriculum and instructional coherence as the foundation for competency achievement; alignment of assessment with learning outcomes; supporting and inhibiting factors influencing coherence implementation; and an integrative framework for curriculum, instruction, and assessment coherence. This categorization aims to provide a systematic overview of coherence across various educational contexts while identifying key aspects that serve as the foundation for developing the integrative framework proposed in this study.

Curriculum and Instructional Coherence as the Foundation for Competency Achievement

The literature synthesis indicates that coherence among curriculum, instruction, and assessment can be understood through three main issues: alignment between targeted competencies and learning experiences, alignment between competencies and assessment instruments, and the interconnectedness between educational policies and practices within educational institutions. Jin et al., (2019) identify horizontal and vertical coherence as important dimensions in the relationship among curriculum, instruction, and assessment. Meanwhile, Atuhurra & Kaffenberger, (2022) demonstrate that misalignment can occur simultaneously across curriculum standards, examinations, and teaching practices. The literature also indicates that coherence should be understood as a substantive relationship rather than merely an administrative correspondence. J. B. Biggs & Tang, (2011) emphasize the relationship among learning outcomes, learning activities, and assessment, whereas Wiggins & McTighe, (2005) position evidence of achievement as a primary consideration in instructional design. These two perspectives provide a foundation for evaluating whether learning activities genuinely facilitate the development of targeted competencies.

The examination of substantive coherence also has a methodological foundation in studies of alignment evaluation. Roach et al., (2008) reviewed various approaches to evaluating alignment among curriculum, instruction, and assessment. Their review indicates that alignment cannot be adequately assessed solely on the basis of content correspondence but must also consider the cognitive demands placed on students. In the context of higher education, J. Biggs, (1996) emphasizes that, through the principle of constructive alignment, learning activities and assessment tasks must be designed to enable students to construct meaning and demonstrate learning outcomes as specified in the intended learning objectives.

In instructional contexts, coherence requires learning activities to provide students with opportunities to achieve the competencies established in the curriculum. Learning objectives emphasizing analysis, problem-solving, or evaluation need to be translated into activities that require students to apply knowledge, develop reasoning, and construct arguments. Anderson & Krathwohl, (2018) taxonomy can be used to help map differences in cognitive demands across learning objectives, activities, and assessments. The findings of Atuhurra & Kaffenberger, (2022) provide empirical evidence of the importance of these relationships. By analyzing curriculum standards, national examinations, and teaching practices in Tanzania and Uganda, they identified discrepancies in content coverage and cognitive demands across the three components. These findings indicate that misalignment does not necessarily occur to the same extent across all subjects or educational contexts.

A comparative reading of these studies reveals a strong convergence on the principle that coherence involves more than matching topic labels across documents. Jin et al., (2019) provide a conceptual synthesis by distinguishing horizontal coherence among curriculum, instruction, and assessment from vertical coherence across classroom and large-scale assessment. Roach et al., (2008) add an evaluative dimension by showing that alignment judgments should consider both content coverage and the cognitive demands required of students. Atuhurra & Kaffenberger, (2022) provide empirical evidence that these dimensions may not be consistently aligned in practice, identifying discrepancies among curriculum standards, examinations, and teacher instruction in Tanzania and Uganda. J. B. Biggs & Tang, (2011), in contrast, primarily offer a design principle: intended learning outcomes, learning activities, and assessment tasks should be deliberately aligned. These contributions are complementary but operate at different analytical levels. The main variation is therefore not a direct contradiction in findings, but a difference between conceptual prescriptions for coherent design, methods for evaluating alignment, and empirical evidence of system-level gaps. Together, they indicate that coherence must be examined both as an intended design and as an observable feature of educational practice.

Alignment of Assessment with Learning Outcomes

The second theme emerging from the literature concerns the importance of alignment between assessment and learning outcomes. Assessment serves to generate evidence of the knowledge, skills, and competencies developed by students. Therefore, assessment quality should not be evaluated solely in terms of the technical accuracy of instruments but also in terms of their alignment with learning objectives and their ability to provide relevant information for subsequent instructional actions. The National Research Council, (2001) emphasizes that the interpretation of assessment results should be based on a clear relationship among the competencies to be assessed, the observed performance evidence, and the conclusions drawn. Black & Wiliam, (2009) complement this perspective by emphasizing the use of assessment information to adjust instruction and support learning development.

In the Indonesian context, Tiana & Maruf, (2024) examined the alignment of English summative tests with learning objectives established in curriculum documents. Their findings indicate that several test items were related to the targeted topics and skills, although certain areas of misalignment remained. The study by Shintia Ningrum et al., (2025) also identified variations in assessment practices and factors that potentially influence alignment. Hattie & Timperley, (2007) demonstrate that feedback should provide information that helps students and teachers determine subsequent learning steps. Accordingly, aligned assessment not only measures competencies in a relevant manner but also provides actionable information for instructional follow-up.

Evidence from the secondary education context further reinforces the importance of diagnostic assessment in instructional planning. Through a case study of the implementation of

the Merdeka Curriculum in senior high schools, Angelika & Setiawan, (2023) found that the use of diagnostic assessment to support instructional planning remained suboptimal and continued to face several implementation challenges. These findings indicate that relevant assessment is necessary not only at the end of instruction but also at the initial stage to understand students' needs and characteristics.

The studies reviewed converge on the view that assessment alignment depends on whether assessment evidence represents the intended learning outcomes and can inform subsequent instructional decisions. The National Research Council, (2001) provides a measurement-oriented account, emphasizing the relationship among a model of student learning, observed performance, and interpretation of evidence. Black & Wiliam, (2009) and Hattie & Timperley, (2007) extend this concern toward the formative use of evidence and feedback to guide next steps in learning. Empirical studies in Indonesia, however, show that the realization of these principles is uneven. Tiana & Maruf, (2024) report that some summative test items correspond to curriculum topics and skills while areas of misalignment remain; Shintia Ningrum et al., (2025) identify variations in assessment alignment in primary education; and Angelika & Setiawan, (2023) indicate that diagnostic assessment has not been optimally used to inform instructional planning in the senior high school context they examined. These findings do not negate the theoretical value of formative or diagnostic assessment. Rather, they expose a gap between the functions assigned to assessment in conceptual frameworks and the extent to which those functions are enacted in practice. The specific contribution of these empirical studies is to locate the implementation problem in assessment design, teacher understanding, and the use of assessment information, rather than in the formal existence of assessment instruments alone.

Supporting and Inhibiting Factors in the Implementation of Coherence

The literature synthesis indicates that coherence is influenced by the interaction among instructional design quality, teacher competence, assessment characteristics, and support from the education system. At the design level, clearly defined learning outcomes constitute a prerequisite for developing relevant activities and assessment instruments. At the implementation level, teachers need to understand how these outcomes are translated into learning experiences and evidence of achievement. At the system level, policies, resources, professional development, and evaluation mechanisms influence the capacity of educational institutions to consistently implement the principles of coherence. Fullan, (2007) explains that policy change requires implementation support and capacity development, whereas Elmore, (2005) emphasizes the importance of connecting policy with instructional practice. These two perspectives indicate that barriers to coherence may extend beyond the classroom, for example, when new policies are not accompanied by conceptual understanding, opportunities for collaboration, or appropriate mentoring mechanisms.

Shintia Ningrum et al., (2025) highlight teachers' understanding of learning outcomes and their skills in developing assessment instruments as factors influencing alignment in the implementation of the Merdeka Curriculum in elementary schools. Angelika & Setiawan, (2023) also demonstrate that the implementation of diagnostic assessment faces various challenges, thereby requiring continuous socialization, training, and mentoring. Administrative workload and time constraints are also identified as aspects that need to be considered in implementing coherence. When teachers devote a greater proportion of their energy to fulfilling documentation requirements, opportunities to analyze the quality of learning tasks, examine assessment results, and improve instructional strategies may become limited. Nevertheless, appropriately designed documentation can still help teachers trace the relationships among objectives, activities, and evaluation.

Across these studies, teacher capacity emerges as a recurring condition for coherence,

particularly the ability to interpret learning outcomes, design appropriate assessment tasks, and use evidence to adjust instruction. Shintia Ningrum et al., (2025) and Angelika & Setiawan, (2023) emphasize practical challenges in the Indonesian implementation context, including teachers' assessment competence and the need for socialization, training, and mentoring. Fullan, (2007) and Elmore, (2005) offer a broader explanation by locating implementation within organizational and system conditions: policy change requires capacity development and support, while educational improvement depends on connecting policy decisions with the core practices of teaching. The perspectives are consistent in rejecting the assumption that policy adoption alone guarantees classroom change, but they differ in emphasis. The Indonesian studies identify specific classroom-facing capacity and implementation issues, whereas Fullan and Elmore explain why such issues are shaped by wider institutional arrangements and implementation support. The discussion of administrative workload and time constraints in the reviewed literature further suggests a potential tension: accountability and documentation can support traceability, yet excessive procedural demands may reduce the time available for collaborative planning and analysis of learning evidence. Thus, coherence is not solely an individual teacher responsibility; it depends on whether institutional and policy arrangements enable teachers to enact it.

An Integrative Framework for Curriculum, Instruction, and Assessment Coherence

Based on the literature synthesis, this study proposes an integrative framework that positions coherence as a cyclical relationship among curriculum objectives, instructional implementation, assessment, and policy improvement. The framework consists of four stages. First, the curriculum establishes the expected competencies and instructional directions. Second, these objectives are translated into learning activities that provide students with opportunities to develop the intended competencies. Third, assessment collects relevant evidence to evaluate achievement. Fourth, assessment results and instructional reflections are used to review teaching strategies, school support, and the policies required. The framework integrates three main ideas from the literature: horizontal and vertical coherence, as discussed by Jin et al., (2019) the principle of alignment among learning outcomes, activities, and assessment, as explained by J. B. Biggs & Tang, (2011) and the utilization of evidence and feedback to improve learning, as discussed by Black & Wiliam, (2009) and Hattie & Timperley, (2007).

As a supporting instrument, a coherence audit can employ a matrix mapping learning outcomes, learning experiences, assessment formats, generated evidence, and improvement actions. The content mapping and cognitive demand approach discussed by Porter, (2002) can serve as one of the methodological references for developing diagnostic tools. This matrix is not intended to standardize instructional processes but rather to help educational institutions identify areas that have not received adequate support.

The reviewed contributions also differ in the aspect of an integrative framework they make visible. Jin et al., (2019) clarify the structural relationship between horizontal and vertical coherence; J. B. Biggs & Tang, (2011) specify the instructional design relationship among outcomes, activities, and assessment; Black & Wiliam, (2009) and Hattie & Timperley, (2007) explain how evidence and feedback can support improvement; while Porter, (2002) offers a content-mapping approach that can inform the examination of what is taught. Atuhurra & Kaffenberger, (2022), together with the Indonesian studies, demonstrate why such connections need to be examined against actual implementation rather than assumed from policy or curriculum documents. The present synthesis brings these contributions together in a cyclical framework in which curriculum objectives guide instruction, assessment generates evidence, and evidence-informed reflection informs classroom, institutional, and policy improvement. Its contribution is integrative rather than a claim that any single reviewed study has already validated the complete framework.

Discussion (مناقشة)

The discussion interprets the reviewed literature through a central distinction: coherence is both a design relationship among curriculum objectives, instructional activities, and assessment, and an implementation process in which evidence is used to adjust teaching and institutional support. The studies do not offer a single, uniform account of how this relationship operates. Rather, conceptual contributions explain the conditions for alignment, while empirical studies show that these conditions are not consistently realized across educational settings. This distinction is important because formal correspondence among curriculum documents does not necessarily demonstrate that students encounter learning experiences or assessment tasks capable of developing and evidencing the intended competencies. The following discussion therefore considers what the convergence and variation across the reviewed studies mean for understanding coherence as a classroom and system-level process.

Coherence as Substantive Alignment within the Instructional System

The synthesis findings indicate that curriculum, instruction, and assessment coherence represents a systemic relationship that cannot be understood merely through similarities in the formulations contained in educational documents. Coherence must be reflected in the interconnectedness among planned competencies, provided learning experiences, and evidence of achievement generated through assessment. Therefore, coherence evaluation needs to address not only whether curriculum documents, instructional plans, and assessment instruments refer to one another but also whether learning experiences and assessment tasks enable students to demonstrate the expected competencies. This perspective is consistent with J. B. Biggs & Tang, (2011), who emphasize the interconnectedness among learning outcomes, learning activities, and assessment. Wiggins & McTighe, (2005) also position evidence of achievement as the foundation for designing learning experiences. These two perspectives demonstrate that meaningful alignment must begin with clearly defined competencies to be achieved, which are subsequently translated into relevant activities and evaluated through appropriate assessment.

In this regard, the principle of constructive alignment proposed by J. Biggs, (1996) explains that learning activities and assessment tasks need to be designed to support the achievement of learning objectives. This means that similarities in the formulation of objectives across educational documents do not necessarily guarantee that students receive adequate learning experiences to achieve the intended competencies. For example, learning objectives emphasizing analytical skills cannot be adequately supported by activities that merely require students to recall information. Learning activities need to provide opportunities for students to identify problems, establish connections between information, compare evidence, and formulate conclusions. Cognitive demands can be mapped using the taxonomy developed by (Anderson & Krathwohl, 2018). However, such mapping needs to be conducted contextually because the level of thinking required is determined not only by the action verbs used in learning objectives but also by the complexity of problems, types of evidence, and quality of reasoning required. Accordingly, a coherence framework can help identify whether differences between objectives and activities represent genuine misalignment or pedagogical adaptations that still support competency achievement.

This perspective is further supported by Roach et al., (2008), who demonstrate that alignment evaluation needs to consider both content coverage and the cognitive demands placed on students. The findings of Atuhurra & Kaffenberger, (2022) in Tanzania and Uganda provide empirical evidence that discrepancies can occur simultaneously across curriculum standards, national examinations, and teaching practices. Nevertheless, findings from these two countries cannot be directly generalized as a representation of educational conditions in Indonesia. Rather, they are more appropriately used to demonstrate that coherence-related issues can arise across

various components of an education system and need to be analyzed within their respective contexts.

The apparent difference between these contributions should be interpreted in relation to their purposes rather than treated as a direct contradiction. (J. Biggs, 1996; J. B. Biggs & Tang, 2011; Wiggins & McTighe, 2005) primarily explain how coherent instruction can be designed, whereas Roach et al., (2008) address how alignment can be evaluated and Atuhurra & Kaffenberger, (2022) show how misalignment may appear across components of an education system. Their findings converge on the need to examine more than the presence of matching topics or terminology. They differ, however, in the level at which coherence is examined and in the evidence used to establish it. The theoretical significance of this distinction is that coherence should not be treated as a static property of curriculum documents; it is a relationship whose quality must be examined through both the design of learning and the evidence of its enactment.

Assessment as a Source of Evidence and a Foundation for Instructional Improvement

Assessment occupies a strategic position in establishing coherence because it connects targeted competencies with evidence of student achievement. The National Research, (2001) explains that the interpretation of assessment results needs to be based on the relationship among the competencies to be assessed, the observed performance evidence, and the conclusions drawn. Accordingly, assessment should not be understood merely as an activity for generating scores but also as a process of obtaining information that can be used to understand the development of students' competencies. Alignment between assessment and learning outcomes needs to consider at least three aspects: competency representation, alignment of cognitive demands, and utilization of assessment results. Competency representation concerns the extent to which an instrument measures the abilities that constitute the actual targets of instruction. Alignment of cognitive demands concerns the level of thinking complexity required to complete an assessment task. Meanwhile, the utilization of assessment results concerns how the information obtained is used to improve the instructional process.

The findings of (Shintia Ningrum et al., 2025; Tiana & Maruf, 2024) indicate that assessment alignment continues to exhibit variations in its implementation. This suggests that the relationship between learning objectives and assessment instruments requires more in-depth examination. Assessment instruments that are thematically aligned do not necessarily measure the targeted competencies comprehensively if their cognitive demands differ from those specified in the learning objectives. Beyond serving as a measurement tool, assessment also needs to function as a basis for instructional decision-making. Black & Wiliam, (2009) emphasize the importance of utilizing assessment information to adjust instruction and support learning development. Hattie & Timperley, (2007) also explain that effective feedback must provide information that helps students and teachers determine subsequent steps. Thus, aligned assessment does not end with evaluating competency achievement but also generates information that can be used to improve instructional strategies.

Taken together, these studies suggest that the central issue is not simply whether assessment is present or aligned in content, but whether the evidence it produces changes subsequent teaching and learning. The measurement perspective of The National Research Council, (2001) clarifies the need for defensible connections between intended competencies, observed performance, and interpretation. (Black & Wiliam, 2009; Hattie & Timperley, 2007) extend this logic by emphasizing the instructional consequences of evidence and feedback. The Indonesian studies indicate that this potential is not always realized: partial alignment in summative tests and limited use of diagnostic assessment point to different stages of the same problem. The former concerns whether assessment adequately represents intended learning, while the latter concerns whether information is translated into instructional decisions. This

distinction positions assessment as a feedback mechanism within the coherence cycle, rather than as the final stage of instruction.

In this context, diagnostic assessment plays an important role by providing initial information about students' needs and characteristics. The findings of Angelika & Setiawan, (2023) indicate that the utilization of diagnostic assessment in the implementation of the Merdeka Curriculum at senior high schools remains suboptimal. This situation demonstrates that assessment policies need to be accompanied by efforts to strengthen teachers' understanding of the diagnostic function of assessment and the utilization of its results in instructional planning. Accordingly, assessment needs to be positioned as an integral part of the entire instructional process rather than merely an activity conducted at the end of a particular topic or instructional period.

Teacher Capacity and Systemic Support as Determinants of Coherence Implementation

Coherence is determined not only by the quality of curriculum design and assessment instruments but also by the capacity of educational institutions to translate policies into instructional practices. Teachers play an important role because they serve as the link between the competencies established in the curriculum and the learning experiences received by students. Therefore, teachers' understanding of learning outcomes, their ability to design learning activities, and their skills in developing assessment instruments are essential aspects of achieving coherence. The findings of Shintia Ningrum et al., (2025) regarding teachers' understanding of learning outcomes and their skills in developing assessment instruments demonstrate that alignment cannot be separated from teachers' professional capacity. Similarly, Angelika & Setiawan, (2023) show that the implementation of diagnostic assessment continues to face various challenges. These two findings indicate that efforts to strengthen teacher competence need to focus on practical abilities to connect objectives, instructional activities, and assessment.

This comparison also changes how implementation difficulties should be interpreted. The classroom-focused findings reported by (Angelika & Setiawan, 2023; Shintia Ningrum et al., 2025) identify practical demands on teachers, while (Elmore, 2005; Fullan, 2007) explain why teachers' capacity is shaped by organizational conditions and the relationship between policy and instructional practice. The convergence lies in the importance of implementation support; the difference lies in the explanatory level. Consequently, professional development should not be framed as remediation for individual teacher shortcomings alone. It should be connected to the institutional conditions that allow teachers to plan collaboratively, examine student work, discuss assessment evidence, and revise instruction. This interpretation treats coherence as a shared organizational responsibility rather than an isolated classroom obligation.

Nevertheless, misalignment should not immediately be regarded as a consequence of teachers' deficiencies. Fullan, (2007) explains that policy change requires implementation support and capacity development. Meanwhile, Elmore, (2005) emphasizes the importance of connecting educational policy with instructional practice. These two perspectives indicate that the successful implementation of policies is strongly influenced by systemic support, including the availability of resources, time for collaboration, mentoring, and relevant evaluation mechanisms. Administrative workload and time constraints also need to be considered within this analytical framework. When teachers allocate more time to fulfilling documentation requirements, opportunities to examine the quality of learning activities and analyze assessment results may be reduced. Nevertheless, administration does not always constitute a barrier. Proportionately designed documentation can actually help teachers trace the relationships among objectives, activities, and evaluation. The main issue lies in how administrative procedures are designed to support the instructional process rather than becoming activities detached from efforts to improve instructional quality.

On this basis, implementation support should include activities directly connected to instructional practice, such as collaborative reviews of instructional materials, assessment item analysis, discussions of learning evidence, and the planning of follow-up actions. This approach enables schools to identify professional development needs more specifically than training programs that focus solely on policy dissemination. However, the effectiveness of such support mechanisms still needs to be evaluated based on contextual considerations and implementation evidence.

An Integrative Framework as a Foundation for Strengthening Educational Policy

Based on the synthesis findings, the integrative framework proposed in this study positions coherence as a cycle connecting curriculum objectives, instructional implementation, assessment, and policy improvement. This framework emphasizes that the curriculum provides the direction for competencies, instruction offers experiences for developing those competencies, assessment generates evidence of achievement, and evaluation provides the basis for improving educational processes and policies. The framework integrates three main ideas. First, horizontal and vertical coherence, as discussed by (Jin et al., 2019), emphasizes interconnectedness among components and across educational levels within the education system. Second, the principle of alignment among learning outcomes, learning activities, and assessment, as explained by (J. B. Biggs & Tang, 2011). Third, the utilization of evidence and feedback to improve learning, as proposed by (Black & Wiliam, 2009; Hattie & Timperley, 2007). The integration of these three ideas produces an analytical framework that examines not only alignment among components but also how evidence from instructional implementation is used to improve decision-making at both classroom and policy levels.

This integrative framework has three policy implications. First, at the government and policymaking levels, competency standards, instructional guidelines, and assessment policies need to be developed with traceable interconnections. This is important to ensure that the competencies established in the curriculum are supported by consistent instructional and assessment policies. Second, at the educational institution level, quality assurance needs to focus on coherence audits that examine the relationships among learning outcomes, instructional plans, classroom activities, and assessment instruments. Such audits can employ a matrix mapping learning outcomes, learning experiences, assessment formats, generated evidence, and improvement actions. The content mapping and cognitive demand approach discussed by Porter, (2002) can serve as one methodological reference for developing diagnostic instruments. Its application needs to be adjusted to the characteristics of individual subjects and educational levels. Third, at the teacher level, professional development needs to strengthen teachers' abilities to translate learning outcomes into instructional activities and assessments, utilize learning evidence, and design follow-up actions based on students' needs. Accordingly, professional development should not focus solely on understanding policies but also on enhancing teachers' ability to apply coherence principles in instructional practice.

Operationally, a coherence audit can be organized as a recurring school-based review rather than a one-time compliance exercise. First, a review team identifies the intended competencies from the curriculum and translates them into observable learning outcomes. Second, the team maps each outcome against planned learning activities, assessment tasks, and the cognitive demands required of students. Third, teachers examine samples of student work and assessment results to determine whether the evidence represents the intended competencies and where learning difficulties occur. Fourth, the team records gaps, such as outcomes that are not adequately taught, activities that do not provide opportunities to demonstrate the targeted thinking, or assessment tasks that measure only a limited part of the intended competency. Finally, the team agrees on proportionate improvement actions, assigns responsibility, and

revisits the evidence in the next review cycle. The audit should therefore generate instructional decisions, not merely a completed documentation matrix.

Professional development can be linked directly to the audit findings. Rather than relying exclusively on general policy briefings, schools can organize collaborative lesson planning, review of assessment items, moderation of student work, and peer discussion of instructional responses. These activities enable teachers to practise translating learning outcomes into tasks and assessment criteria, while mentoring can support teachers who need assistance in interpreting evidence or adapting instruction. The focus is on building a continuing professional learning cycle in which identified coherence gaps determine the content of support and subsequent classroom evidence informs whether that support has been useful.

Assessment feedback completes this cycle when it is specific, timely, and connected to an actionable next step. At the student level, feedback should indicate the relationship between current performance, the intended competency, and what the learner can do next. At the teacher level, patterns in student responses should inform decisions to reteach, provide differentiated tasks, adjust pacing, or extend learning. At the institutional level, aggregated evidence can identify recurring curriculum or resource needs that require further support. These uses should be distinguished: feedback to students supports immediate learning, feedback to teachers supports instructional adaptation, and aggregated evidence supports institutional and policy review. In this way, assessment information moves across classroom and system levels without assuming that every classroom result should automatically produce a policy change.

Nevertheless, this integrative framework should not be interpreted as a model that has been empirically proven effective across all educational contexts. The reviewed literature encompasses different national contexts, educational levels, subjects, and research designs. Evidence from Tanzania and Uganda, for example, provides insights into systemic misalignment but cannot be directly generalized as a representation of educational conditions in Indonesia. Furthermore, conceptual literature and empirical research serve different evidentiary purposes. Conceptual literature helps establish theoretical explanations, whereas empirical research demonstrates patterns identified within specific contexts. Therefore, the proposed framework still requires testing through field research, analyses of curriculum and assessment documents, and implementation studies across different educational institutions. Such testing is necessary to determine whether the formulated coherence indicators can be applied consistently and whether the resulting recommendations correspond to the needs of educational practitioners.

Thus, the main contribution of this synthesis is to position coherence not as an administrative requirement to standardize documents but as a principle of educational quality management that connects objectives, processes, learning evidence, and policy improvement. The curriculum provides direction, instruction offers learning experiences, assessment generates evidence, and policy evaluation ensures that findings from educational practices are utilized to improve the education system.

Conclusion (خاتمة)

Based on the literature synthesis, coherence among curriculum, instruction, and assessment is an essential principle for ensuring the interconnectedness of targeted competencies, the learning experiences provided, and evidence of student achievement. This study demonstrates that coherence cannot be achieved merely through consistency among planning documents; rather, it must also be reflected in instructional implementation, the extent to which assessment represents the targeted competencies, and the use of evaluation results to improve instruction. Factors that support or hinder coherence include teachers' understanding of learning outcomes,

their ability to develop assessment instruments, administrative workload, support for professional development, and the consistency of educational policies. As a conceptual contribution, this study formulates an integrative framework that connects curriculum objectives, instructional implementation, assessment, and continuous policy improvement. The framework positions coherence as an integral component of evidence-based educational quality management rather than merely a matter of fulfilling administrative requirements.

Based on these conclusions, policymakers are encouraged to strengthen the connections among competency standards, instructional guidelines, and assessment systems, while ensuring that changes to one component take into account their implications for the others. Educational institutions need to develop coherence evaluation mechanisms that examine the relationships among learning outcomes, classroom activities, assessment instruments, and follow-up actions based on learning results. Teachers should also receive continuous professional development, particularly in designing instruction that addresses competency requirements, developing relevant assessments, and using assessment results to improve instructional strategies. The implementation of these recommendations should take into account student characteristics, educational levels, subject areas, and institutional conditions to ensure that efforts to strengthen coherence do not lead to the standardization of instructional practices.

This study has several limitations because it relies on a literature synthesis encompassing diverse contexts, educational levels, subject areas, and research designs. Furthermore, the proposed integrative framework is the result of a conceptual synthesis and has not yet been directly tested to establish its effectiveness in educational practice. Therefore, future research is encouraged to adopt a more systematic and transparent literature search process, including reporting the number of sources identified, screened, and analyzed, as well as providing detailed selection criteria. Empirical studies across various educational levels in Indonesia are also needed to test coherence indicators, identify variations in implementation, and evaluate the effectiveness of coherence audits in improving instructional quality. In this way, future policy recommendations can be supported by stronger empirical evidence and better adapted to the contexts in which they are implemented.

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