Pilar Nusantara
Journal of Education
Vol 1 No 1 September 2026
ISSN: XXXX-XXXX (Print) ISSN: XXXX-XXXX (Electronic)
Open Access: https://edu.jurnalpilarnusantara.id/pnje/

Cultivating Higher-Order Thinking in Islamic Education: A Systematic Review of Pedagogical, Curricular, Assessment, and Institutional Pathways

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Article Info:
Received: 5 May 2026
Revised: 8 August 2026
Accepted: 21 Augst 2026

ABSTRACT

Background: Higher-order thinking had become a central concern in Islamic education, but evidence on its development remained fragmented across pedagogy, curriculum, assessment, teacher capacity, and institutional conditions. **Objective:** This review examined how these pathways jointly shaped critical, creative, and related higher-order thinking. **Methods:** Scopus was searched for articles published from 2021 to 2026. Of 188 records identified, 101 remained after database filters and 43 passed scope screening. Five secondary or conceptual records were reclassified as contextual literature, leaving 38 primary empirical studies for thematic synthesis. **Results:** Active, inquiry-oriented, reflective, collaborative, and problem-centred learning generally supported higher-order cognition when cognitive demand, teacher facilitation, and assessment were aligned. Faith integration was most productive when it structured authentic reasoning rather than functioning as symbolic content. Teacher competence, assessment literacy, leadership, resources, and institutional culture explained substantial variation in implementation. **Conclusion:** Higher-order thinking in Islamic education was best understood as an alignment problem across four interacting pathways. The evidence remained limited by Scopus-only retrieval, a 2021–2026 window, heterogeneous measures, and geographically concentrated studies.

Keywords: higher-order thinking skills; critical thinking; creative thinking; Islamic education; systematic review

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INTRODUCTION

Higher-order thinking, including critical and creative thinking, has become a central educational capability because learners must interpret complex information, generate alternatives, evaluate claims, solve unfamiliar problems, and act responsibly under uncertainty. Critical thinking is strengthened when instruction develops transferable skills, dispositions, structural understanding, and metacognitive monitoring (Halpern, 1998), while creativity requires both originality and effectiveness (Runco & Jaeger, 2012). The revised taxonomy of educational objectives further distinguishes progressively complex cognitive processes (Krathwohl, 2002). In Islamic education, these cognitive demands coexist with moral, social, and knowledge-development purposes rather than replacing them (Halstead, 2004). This combination makes higher-order thinking a particularly useful lens for evaluating how Islamic education reconciles continuity of values with intellectually generative learning.

The contemporary evidence base shows that transformation is already under way. Curriculum reform in Indonesian madrasahs has sought to reconcile learner-centred principles with Islamic educational values, while internationalization initiatives have combined national, international, and Islamic curricula in efforts to broaden students' global outlook and critical capacities (Amalia et al., 2024; Hadisi, 2025). At the classroom level, Islamic schools are experimenting with lesson study, open approaches, learning by doing, structured inquiry, project work, gamification, adaptive learning, and other forms of active pedagogy (Assalihee et al., 2024; Desrani et al., 2023; Sudiantini et al., 2026). These developments challenge any simple portrayal of Islamic education as uniformly transmissive. They instead reveal a heterogeneous field in which traditional, reformist, digitally mediated, and inquiry-oriented models coexist, sometimes within the same institution.

Evidence of cognitive gains is encouraging but uneven. The BW-ExPort model in madrasah physics shifted student ability upward on the Wright Map, while Hikmah pedagogy moved the quality of student questioning from lower- toward higher-order levels and promoted greater independence of thought (Balulu et al., 2026; Hussien et al., 2021). The Cyber Scientific Approach similarly produced moderate but consistent gains in critical thinking across grade levels (Sapiudin et al., 2026). Yet a multi-subject STEAM intervention improved collaboration without statistically significant gains in critical thinking or creativity, showing that innovative labels do not guarantee higher-

order outcomes (Zaqiah et al., 2024). The contrast suggests that the mechanism of learning - questioning, reflection, argumentation, inquiry, autonomy, or iterative problem solving - may matter more than the nominal pedagogical model itself.

However, the institutionalization of higher-order thinking remains fragile because policy, curriculum, pedagogy, and assessment do not always move together. Indonesian madrasahs may formally meet curriculum-development standards while still lacking instructional strategies, resources, media, and learning approaches that adequately support higher-order thinking (Nasir, 2021). Research on Sirah teaching similarly finds only moderate integration of higher-order thinking in parts of the lesson sequence, and teachers' competence is repeatedly identified as a key condition for translating curriculum goals into practice (Mohamed et al., 2024; Kosasih et al., 2022). Assessment exposes the same alignment problem: educators can report familiarity with higher-order thinking while their test items remain dominated by lower-order demands, and many teachers demonstrate only moderate ability to construct higher-order items (Wigati et al., 2023; Otaya et al., 2025).

The broader environment of Islamic educational institutions further conditions what teachers and learners can do. Madrasahs face uneven access to infrastructure, technology, professional support, and adaptive quality-management systems (Hidayah et al., 2025; Parinduri & Ibarra, 2025). In pesantren, governance, participation, relational conditions, and the operationalization of Islamic ethical principles shape the space available for critical engagement (Uyuni et al., 2026). At higher levels of education, students' perceptions of instructional relevance and strategy influence how critical thinking contributes to learning development, reinforcing the point that cognitive outcomes are embedded in educational systems rather than produced by isolated techniques (Sayekti et al., 2026).

Conceptual fragmentation remains a further problem. The literature uses critical thinking, creative thinking, higher-order thinking skills, analytical thinking, inquiry, problem solving, scientific reasoning, and computational thinking as overlapping but non-identical constructs. The present review therefore uses higher-order thinking as the umbrella construct while retaining critical and creative thinking as distinct focal outcomes. This revision reflects the observed evidence base, in which critical thinking and broader higher-order constructs were substantially more frequent than direct measures of creativity. Constructive alignment provides the connecting theoretical principle: learning objectives, activities, and assessment should be designed to elicit the same level of cognitive performance (Biggs, 1996).

The unresolved problem is therefore not whether Islamic education can cultivate higher-order thinking, but how pedagogical, curricular, assessment-related, teacher, and institutional conditions combine to enable or constrain that development. Existing studies commonly isolate one intervention, subject, teacher factor, or policy initiative, leaving the field without an integrated explanation of the pathways through which higher-order thinking develops. This review addressed that gap by synthesizing recent Scopus-indexed evidence from Islamic schools, madrasahs, pesantren/boarding-school settings, and relevant Islamic higher-education contexts. It examined: (1) pedagogical approaches and reported outcomes; (2) curriculum and faith-integration processes; (3) assessment and teacher capacity; (4) institutional and contextual enablers and barriers; and (5) the configuration of these domains in an Integrated Pathways Framework. The contribution is explanatory integration: the review shifts attention from identifying a single 'best method' to explaining the alignment conditions under which higher-order cognition is more likely to emerge and be sustained.

RESEARCH METHODS

This study used a systematic literature review design and reported the selection process in accordance with PRISMA 2020 (Page et al., 2021), with search reporting informed by PRISMA-S (Rethlefsen et al., 2021). Scopus was used as the predetermined database because the topic crosses education, curriculum, religious studies, assessment, and learning sciences. The Scopus-ready query was: TITLE-ABS-KEY(("critical thinking" OR "creative thinking" OR "higher order thinking" OR HOTS OR "higher-order thinking skills" OR creativity OR "thinking skills") AND ("Islamic education" OR "Islamic school*" OR "Muslim education" OR "faith-based school*" OR madrasa* OR madrasah*)). Search construction followed recommendations for explicit concept blocks, synonyms, Boolean operators, and reproducible syntax (Bramer et al., 2018), and was checked against PRESS principles for Boolean logic, text words, syntax, and filters (McGowan et al., 2016). The 2021–2026 window was retained as a contemporary-review boundary focused on the recent phase of competency-based, digitally mediated, and higher-order-thinking-oriented reform.

The search identified 188 records. Sequential Scopus filters excluded 87 records: publication year (n = 40), subject area Social Sciences (n = 36), document type Article (n = 6), and publication stage Final (n = 5), leaving 101 records for scope and eligibility screening. Fifty-eight records were excluded as out of scope, leaving 43 evidence records. An evidence-type audit then separated primary empirical studies from secondary or conceptual literature. Five records - a

systematic review or non-empirical/library/conceptual contributions - were retained only as contextual literature and were not counted in the main synthesis. The primary empirical synthesis therefore comprised 38 unique studies. Because the source screening log did not preserve reason-specific counts for the 58 scope exclusions, the review reports that category transparently rather than reconstructing unverified exclusion reasons. Figure 1 summarizes the selection process.

Primary studies were eligible when they addressed an Islamic educational context; investigated critical thinking, creative thinking, higher-order thinking, creativity, or a closely related higher-order cognitive competency; and provided empirical evidence relevant to pedagogy, curriculum/epistemology, assessment/teacher capacity, or institutional/contextual conditions. Secondary reviews, theoretical papers, library research, and literature-based conceptual models could inform the Introduction or Discussion but were excluded from the 38-study primary synthesis to avoid double counting and mixed levels of evidence. Studies focused only on non-cognitive outcomes, or in which Islam was merely a demographic descriptor, were excluded from the synthesis.

Methodological appraisal was design-sensitive. MMAT domains were used as the organizing framework for qualitative, quantitative, and mixed-method evidence (Hong et al., 2018), and nonrandomized intervention studies were additionally interpreted against ROBINS-I concerns such as confounding, participant selection, missing data, outcome measurement, and selective reporting (Sterne et al., 2016). Because reporting depth varied across designs, appraisal was summarized as lower, moderate, or higher methodological concern rather than as a single numerical score. Study-level judgments and their evidential implications are provided in Supplementary Table S1. Data extraction covered setting, educational level, study design, target construct, intervention or exposure, principal outcome, pathway, and methodological limitations.

The synthesis combined deductive coding around four pathways with inductive identification of recurring mechanisms such as questioning, reflection, learner autonomy, collaboration, assessment alignment, teacher self-efficacy, and institutional support. Thematic synthesis was used to move from study-level findings to descriptive and analytical themes while preserving traceability to the primary evidence (Thomas & Harden, 2008). Given substantial heterogeneity in designs, interventions, constructs, and measurement approaches, statistical pooling was not attempted. The review instead developed conditional propositions and a configurational framework describing how pathways may reinforce or constrain one another.

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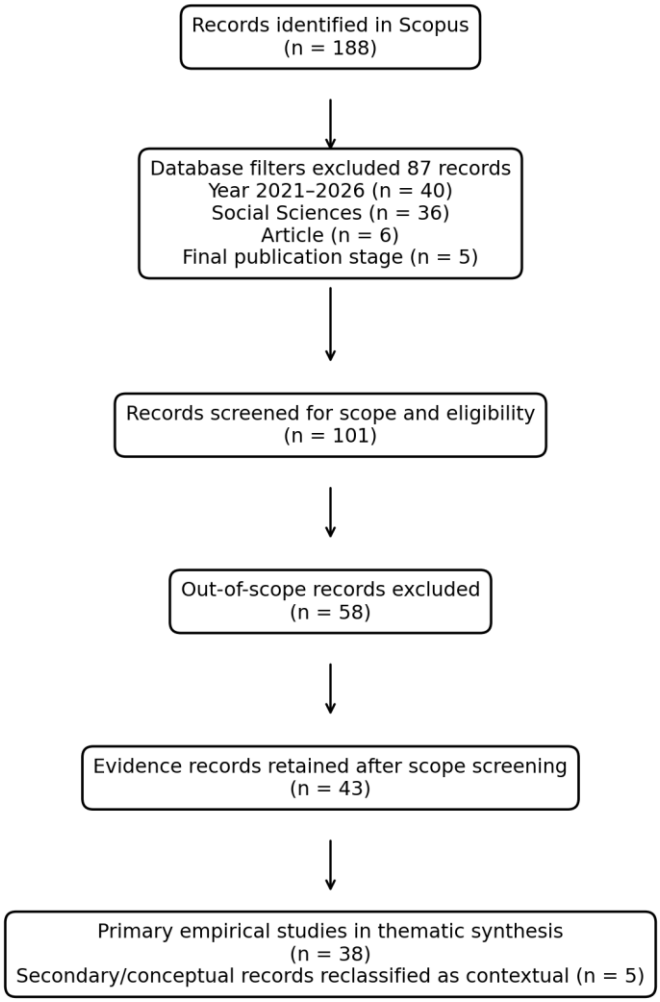


Figure 1. PRISMA-Style Study Identification and Evidence-Type Audit

RESULTS AND DISCUSSION

The final primary synthesis comprised 38 unique empirical studies published between 2021 and 2026: six in 2021, seven in 2022, four in 2023, seven in 2024, eight in 2025, and seven in 2026. Studies covered primary and secondary madrasahs, Islamic schools, pesantren/boarding schools, teacher-education settings, and selected Islamic higher-education contexts. Indonesia and Malaysia dominated the evidence base, with additional studies from Jordan, Saudi Arabia, Southern Thailand, Iran, Uzbekistan, and a Malaysia-Sudan comparison. Across the four pathway tables there were 39 study placements representing 38 unique studies; Assalihee et al. (2024) legitimately contributed to both the pedagogical and teacher-capacity pathways. The concentration of studies on critical thinking and broader higher-order constructs was substantially greater than the number directly measuring creativity, which was treated as an evidence imbalance rather than obscured by the umbrella terminology.

Pedagogical pathways: Active, inquiry-oriented, and generative learning

Table 1 shows a consistent movement toward active and cognitively demanding pedagogy, but it also demonstrates that the effectiveness of innovation depends on the learning mechanism and implementation conditions. The BUXTON model outperformed traditional instruction for jurisprudence concepts and critical thinking in ninth-grade Islamic Education (Alqudah et al., 2024). Structured inquiry in an Islamic boarding-school Social Studies context produced progressive gains in facilitation, engagement, higher-order thinking, and learning outcomes (Amaliyah et al., 2026). Lesson Study combined with the Open Approach shifted Islamic Studies teachers toward

more learner-centred questioning and reflection (Assalihee et al., 2024), while learning by doing supported critical and creative thinking through experiential participation, collaboration, and communication (Desrani et al., 2023). Together, these studies indicate that active pedagogy is most promising when students must explain, question, evaluate, or produce rather than merely receive information.

Comparable patterns appear in cooperative, inquiry, reflective, and technology-supported models. Jigsaw learning was associated with a 43% average improvement in critical-thinking skills in a madrasah mathematics class (Fitriana et al., 2023), while Hikmah pedagogy increased the quality and quantity of student questions and shifted inquiry toward higher-order thinking (Hussien et al., 2021). Problem-based learning with argument mapping and an online laboratory produced the strongest scientific-argumentation gains among the compared conditions (Jumadi et al., 2021), and a 5E learning cycle integrated with local wisdom generated high critical-thinking gains (Ramdani et al., 2021). Reflective teaching in Islamic cultural history supported idea construction, argument evaluation, and problem solving (Suntiah, 2021). Gamification and adaptive learning further suggest that engagement and motivation can mediate the relationship between digital innovation and critical/creative outcomes (Sudiantini et al., 2026).

The evidence also cautions against assuming that any 'innovative' model will automatically generate higher-order cognition. The 4C teaching model was judged valid, practical, and effective for mathematical critical thinking (Tolla & Jabu, 2022), yet a short STEAM intervention produced significant collaboration gains without significant improvement in critical thinking or creativity (Zaqiah et al., 2024). This contrast supports the review proposition: outcomes depend less on labels such as STEAM, problem-based learning, or gamification than on whether the intervention creates sustained opportunities for inquiry, reasoning, reflection, explanation, and idea generation.

Table 1. Pedagogical Approaches and Higher-Order-Thinking Outcomes in Islamic Education

References	Educational Context	Pedagogical Approach	Thinking Construct	Mechanism of Learning	Main Outcome	Limitations / Conditions
Alqudah et al. (2024)	Jordan; ninth-grade Islamic Education	BUXTON model	Critical thinking	Concept acquisition and structured learning	Experimental group outperformed traditional instruction in critical thinking and jurisprudence concepts	Small sample (n=50); single grade/context
Amaliyah et al. (2026)	Islamic boarding school; Social Studies	Structured inquiry in transdisciplinary curriculum	Higher-order thinking	Inquiry routines, conceptual links, reflection	Progressive gains in teacher facilitation, engagement, HOTS, and learning outcomes	Qualitative action research; context-specific
Assalihee et al. (2024)	Private Islamic schools, Southern Thailand	Lesson Study + Open Approach	Critical thinking	Learner-centred questioning, reflection, ICT	Shift from teacher-centred to learner-centred practice emphasizing critical thinking	Focus on teacher practice; student outcomes not isolated
Desrani et al. (2023)	Islamic high school	Learning by doing	Critical and creative thinking	Experiential learning, collaboration, communication	Significant pre-post improvement; supports creative, logical, systematic, and critical thinking	Mixed-method single setting
Fitriana et al. (2023)	Madrasah Aliyah; mathematics	Jigsaw cooperative learning	Critical thinking	Peer explanation, judgment, correction, idea generation	Average critical-thinking improvement reported at 43%	Classroom action research; n=25
Hussien et al. (2021)	Form 4 Islamic Education	Hikmah pedagogy / Community of Inquiry	HOTS, inquiry, independent thinking	Questioning, philosophical inquiry, reflection	Questions increased in quality and quantity and shifted toward HOTS after four sessions	Single class; short intervention
Jumadi et al. (2021)	MAN Yogyakarta; science	PBL + argument mapping + online laboratory	Scientific argumentation / higher-order thinking	Argument mapping and online experimentation	PBL-AMOL most effective; gain score 0.43	Specific science context; quasi-experimental
Ramdani et al. (2021)	Madrasah Tsanawiyah; science	5E learning cycle + local wisdom	Critical thinking	Inquiry cycle and contextual local wisdom	Significant, high N-gain in critical thinking; some	One context; one indicator remained weak

References	Educational Context	Pedagogical Approach	Thinking Construct	Mechanism of Learning	Main Outcome	Limitations / Conditions
					indicator differences by gender	
Suntiah (2021)	MAN 1 & MAN 2 Bandung; Islamic cultural history	Reflective teaching	Critical thinking	Reflection, discussion, journal writing, argument evaluation	Students showed progressive capacity in idea-building, argument evaluation, and problem solving	Qualitative; no control group
Sudiantini et al. (2026)	Islamic boarding school; secondary	Gamification + adaptive learning	Critical thinking and creativity	Engagement, motivation, adaptive/deep learning	All four predictors positive; engagement was strongest predictor	Single school; exploratory PLS-SEM
Tolla & Jabu (2022)	Madrasah Aliyah; mathematics	4C teaching model	Mathematical critical thinking	4C-oriented learning model	Model judged valid, practical, and effective for mathematical critical thinking	Small implementation sample
Zaqiah et al. (2024)	Two State Madrasahs, West Java	STEAM multi-subject approach	Critical thinking, creativity, collaboration	Interdisciplinary project/activity integration	Significant collaboration gains, but not significant for critical thinking or creativity	Short, three-meeting intervention

Curricular and epistemological pathways: Integrating knowledge, faith, and context

The primary empirical evidence in Table 2 indicates that curriculum influences higher-order thinking by defining which forms of knowledge, values, and cognitive activity are enacted in practice. Comparative syllabus research in Malaysia and Sudan recommended embedding critical thinking and shared values more explicitly in secondary Islamic education (Abdelgadir et al., 2023). A humanizing teacher-education curriculum using socio-scientific issues coupled critical judgment with ethical sensitivity and responsible action (Baihaqi & Huda, 2025), while higher-order-thinking-oriented Islamic Religious Education connected religious moderation with everyday issues (Basri et al., 2022). Competency-based Arabic curriculum reform linked contextual language use, student autonomy, clearer assessment, and critical engagement (Raswan et al., 2025).

Empirical integration was strongest when religious knowledge became part of authentic cognitive work. STEM-R connected science, religion, investigation, and real-life application and produced differences in reflective and critical thinking between experimental and control groups (Sarwi et al., 2024). Cluster-integrative history pedagogy combined religious-historical integration, role play, simulation, and inquiry and yielded stronger academic and higher-order outcomes (Toshtemirova et al., 2025). Project-based moral-theology learning likewise linked Islamic identity and behavior with scientific thinking (Zamsiswaya et al., 2024). Secondary and conceptual sources were used only to contextualize these findings, not to inflate the primary evidence count.

Table 2. Curricular and Epistemological Approaches to Higher-Order Thinking

References	Curriculum / Subject	Form of Integration	Cognitive Competency	Curriculum Strategy	Reported Outcome	Gap / Limitation
Abdelgadir et al. (2023)	Secondary Islamic education syllabus	Comparative syllabus development	Critical thinking	Malaysia-Sudan comparison; values and curriculum content	Recommends embedding critical thinking and shared values in syllabus reform	Comparative qualitative design
Baihaqi & Huda (2025)	Teacher education for madrasah	Humanizing curriculum + socio-scientific issues	Critical thinking, moral judgment	Issue exposure, ethical dialogue, reflection, action response	Enhanced ethical sensitivity and responsible action; supports transformative pedagogy	Pre-service context; design research
Basri et al. (2022)	Madrasah Aliyah; PAI	HOTS integrated with religious moderation	HOTS / analytical ability	Connect moderation values with everyday issues	HOTS-oriented PAI strengthened understanding of religious moderation	Survey-oriented mixed approach
Raswan et al. (2025)	Indonesian madrasahs; Arabic curriculum	Competency-based curriculum + Merdeka Belajar	Critical thinking, autonomy	Contextual language use and competency orientation	High reported motivation/enjoyment/understanding; links proficiency with critical thinking	Case study; thinking outcomes not isolated

References	Curriculum / Subject	Form of Integration	Cognitive Competency	Curriculum Strategy	Reported Outcome	Gap / Limitation
Sarwi et al. (2024)	Islamic boarding schools; science	STEM-R	Reflective and critical thinking	Science-religion integration, investigation, real-life connection	Experimental group differed from control on reflective and critical thinking	Context-dependent implementation
Toshtemirova et al. (2025)	Islamic university / multi-level history education	Cluster-integrative Islamic pedagogy	Critical thinking, creativity, inquiry	Religious-historical integration, role-play, simulation	Experimental group improved understanding, performance, spiritual growth, HOTS	Complex multi-level design
Zamsiswaya et al. (2024)	Madrasah Aliyah; Akidah Akhlak	PjBL grounded in Islamic identity/behavior	Scientific thinking, creativity	Project-based moral theology with Islamic principles	Teacher identity and Islamic behavior supported stronger PjBL practice and scientific thinking	Teacher-focused phenomenology

Assessment and teacher-capacity pathways: From intended outcomes to classroom enactment

Table 3 identifies teacher capacity and assessment as the principal translation mechanism between curricular intention and student experience. Content analysis of Islamic Education curricula in Saudi Arabia found weak representation of creative-thinking skills in evaluation questions (Aldossari, 2021). Lesson Study with the Open Approach improved teacher practice through collaborative lesson design and reflection (Assalihee et al., 2024), while a survey of 642 Malaysian Islamic Education teachers showed that professional learning communities and self-efficacy were positively associated with higher-order-thinking-integrated teaching, with self-efficacy functioning as a mediator (Dzul et al., 2022).

Instructional planning and assessment literacy are equally consequential. Sirah teachers reported moderately high higher-order-thinking integration in lesson composition, although cognitive progression required strengthening (Jima'ain et al., 2026). Primary-school Islamic Education teachers identified understanding, resources, instructional strategy, and learner knowledge as key implementation conditions (Kosasih et al., 2022), while mixed-method evidence on Sirah instruction found only moderate integration during lesson closure (Mohamed et al., 2024). Teachers' ability to construct higher-order items was also mostly moderate, with difficulties aligning stimulus, indicator, and cognitive level (Otaya et al., 2025). In higher education, 65.3% of religious lecturers reported using higher-order questions, yet documentary analysis showed that many items remained lower-order and student outcomes were weak (Wigati et al., 2023).

Teacher creativity adds another layer. Islamic Education lecturers reported high levels of creative teaching, although differences by gender, age, and experience were not significant (Zulkifli et al., 2022). Organizational research in madrasahs shows that transformational leadership and teamwork can support teacher creativity (Rais & Rubini, 2022). Overall, the teacher/assessment pathway reveals a recurring alignment gap: systems may endorse higher-order thinking, but learners experience higher cognitive demand only when teachers can design tasks, questions, feedback, and assessments that actually require analysis, evaluation, generation, and justification.

Table 3. Teacher Capacities and Assessment Practices Shaping Higher-Order Thinking

References	Teacher / Educator Context	Capacity / Assessment Dimension	Thinking Skill Targeted	Evidence / Mechanism	Key Finding	Major Limitation
Aldossari (2021)	Islamic Education curricula, Saudi Arabia	Assessment content quality	Creative thinking	Fluency, flexibility, originality, elaboration in evaluation questions	Creative-thinking skills were weakly represented in assessment questions	Content analysis; no learner outcome
Assalihee et al. (2024)	Islamic Studies teachers, Southern Thailand	Professional development via Lesson Study	Critical thinking	Collaborative lesson design, Open Approach, reflection	Teacher practice improved toward learner-centred critical-thinking pedagogy	Teacher-focused outcome
Dzul et al. (2022)	Primary Islamic Education teachers, Malaysia	Professional learning community + self-efficacy	HOTS integration	Professional learning community and teacher self-efficacy	Both positively associated with HOTS-integrated teaching; self-efficacy mediated relationship	Survey; self-report

References	Teacher / Educator Context	Capacity / Assessment Dimension	Thinking Skill Targeted	Evidence / Mechanism	Key Finding	Major Limitation
Jima'ain et al. (2026)	Secondary Sirah teachers, Malaysia	Instructional planning framework	HOTS	Induction-development-closure alignment	Moderately high HOTS integration; cognitive progression still needed strengthening	Descriptive survey
Kosasih et al. (2022)	Primary-school PAI teachers, Indonesia	Teacher understanding and implementation	HOTS	Understanding, resources, instructional strategies	Teacher competence and support identified as central to HOTS-oriented PAI	Case study; teacher-reported
Mohamed et al. (2024)	Sirah education, Malaysia	Teacher planning and lesson components	HOTS	Attitude, planning, aids, PAK21, assessment	HOTS integration only moderate in lesson closure; integrative model proposed	Mixed-method; context-specific
Otaya et al. (2025)	Madrasah & Islamic education teachers, Indonesia	HOTS item construction	HOTS assessment	Cognitive-level alignment with stimuli and indicators	Most teachers only moderate in HOTS-item development; major construction difficulties	Cross-sectional; teacher-training population
Wigati et al. (2023)	Religious lecturers / online learning	Perception versus assessment practice	HOTS	Lecturer perception and test-item analysis	65.3% reported applying HOTS, but documents showed mainly LOTS items; student outcomes low	Higher education context
Zulkifli et al. (2022)	Islamic Education lecturers	Creative teaching practice	Creativity	Creative teaching behaviors	Creative teaching reported high; no significant differences by gender, age, or experience	Lecturer context; self-report
Rais & Rubini (2022)	Madrasah Tsanawiyah teachers	Leadership/teamwork/work engagement	Teacher creativity	Organizational and professional factors	Transformational leadership and teamwork supported teacher creativity	Teacher creativity rather than direct student cognition

Institutional and contextual pathways: Conditions enabling or constraining higher-order thinking

Table 4 demonstrates that classroom innovation is embedded in institutional conditions. State Islamic senior high schools institutionalized creativity and responsibility through combinations of learning integration, school culture, cooperative learning, and teacher exemplarity (Ak et al., 2026). Internationalization at an Indonesian madrasah improved critical thinking and global outlook while simultaneously exposing competency and facility challenges (Hadisi, 2025), and quality-management research in elementary madrasahs linked leadership, teacher development, collaboration, and external support with creativity and institutional resilience (Hidayah et al., 2025).

Digitalization introduces both opportunity and inequality. Technology-based learning in boarding schools does not operate independently of wellbeing, social skills, and critical-thinking profiles (Madjid & Shodiq, 2026). Teachers confronting technological disruption can promote reasoning and tolerance, yet unequal access to digital resources and facilities remains a barrier (Parinduri & Ibarra, 2025). Program implementation for religious moderation and twenty-first-century competencies likewise shows that strong conceptual context does not remove weaknesses in process, teacher competence, or infrastructure (Sri Mardiyanti Syam, 2025). These findings indicate that technology should be conceptualized as part of an institutional ecology rather than as an intervention with a uniform cognitive effect.

Culture and governance further mediate intellectual openness. Ethnographic work at an elite Islamic school in Iran identifies contradictory socialization between religious conservatism and elite professionalism that can compromise life-skills teaching, particularly critical thinking (Mousavi & Vidal, 2026). Traditional Islamic schools in Indonesia report weaknesses in resources and instructional approaches supporting higher-order thinking despite formal curriculum and accreditation structures (Nasir, 2021). Instructional leadership and creative teaching are associated with student satisfaction and self-actualization (Suyudi et al., 2022), while child-friendly pesantren design links governance, participation, critical thinking, and adab but also reveals governance and pedagogical gaps (Uyuni et al., 2026).

Table 4. Institutional and Contextual Enablers and Barriers

References	Institutional Context	Institutional Factor	Thinking-Related Focus	Mechanism / Condition	Reported Effect / Implication	Evidence Limitation
Ak et al. (2026)	Four State Islamic Senior High Schools, Indonesia	School culture + value institutionalization	Creativity, responsibility, social solidarity	Learning integration, school culture, cooperative learning, teacher exemplarity	Six institutional strategies supported creativity and character-related outcomes	Qualitative; value-development focus
Hadisi (2025)	MTs Ummusshabri Kendari	Internationalization + curriculum integration	Critical thinking, global outlook	Cambridge + national curriculum + Islamic values	Transformation improved critical thinking and global outlook; competency/facility challenges remained	Single case
Hidayah et al. (2025)	Madrasah Ibtidaiyah	Quality management / resilience	Creativity, participation	Leadership, teacher development, collaboration, external support	Participatory management and teacher innovation supported creativity and resilience	Two-site case study
Madjid & Shodiq (2026)	Islamic boarding schools, Yogyakarta	Technology-based learning environment	Critical thinking as moderator	Digital learning, wellbeing, social skills	Technology-character relationship varied by psychosocial profile; reflection/dialogue recommended	Cross-sectional SEM
Mousavi & Vidal (2026)	Elite Islamic school, Iran	Organizational habitus	Critical thinking	Religious-conservative versus elite-professional norms	Institutional contradiction compromised life-skills teaching, especially critical thinking	Ethnographic; elite-school context
Nasir (2021)	Traditional Islamic schools, Indonesia	Accreditation/curriculum/instruction quality	HOTS, creative/productive/critical thinking	Academic climate, methods, media, resources	Weaknesses found in learning resources and approaches supporting HOTS	Qualitative institutional review
Parinduri & Ibarra (2025)	MAN in Medan	Technological disruption + ideology	Critical thinking, reasoning	Digital resources, facilities, contextual teaching	Teachers emphasized reasoning/tolerance, but infrastructure gaps created unequal access	Case study
Sri Mardiyanti Syam (2025)	Madrasahs, South Sulawesi	P5-PPRA implementation	Creativity / 21st-century competencies	Context, input, process, product support	Context strong, but process/input/product only good; teacher competence and infrastructure need strengthening	Small implementation sample
Suyudi et al. (2022)	Madrasah Aliyah & Islamic vocational school	Instructional leadership + creative teaching	Student actualization	Leadership, teaching creativity, satisfaction	Leadership and creative teaching affected satisfaction; leadership also supported self-actualization	Cross-sectional SEM
Uyuni et al. (2026)	Pesantren in Java region	Governance + engagement pedagogy + adab ecosystem	Critical thinking	Child-friendly governance and engagement-based pedagogy	Model integrates protection, participation, critical thinking, and adab; reveals governance/pedagogical gaps	Design research

Cross-Pathway Synthesis and Implications

Across the four pathways, the synthesis consistently suggests cross-pathway interactions rather than statistically tested interaction effects. Pedagogical innovation produced the clearest cognitive benefits when it was supported by curricular relevance, competent facilitation, demanding assessment, and institutional conditions that permitted

sustained implementation. Conversely, weak or null outcomes were associated with short exposure, limited scaffolding, assessment misalignment, insufficient teacher preparation, or infrastructure constraints. This configurational interpretation is consistent with constructive alignment: cognitive objectives become educationally consequential only when learning activities and assessment require performances at the intended cognitive level (Biggs, 1996).

A second implication is that the mechanism of learning matters more than the pedagogical label. Problem-based learning in Islamic Religious Education has been associated with better conceptual understanding, critical reflection, and engagement, although time and facilitator support remain constraints (Amirudin et al., 2025). Project-based learning in university writing contexts supports sustained engagement, inquiry, feedback, and refinement (Angraini et al., 2025), while Jigsaw cooperative learning improved critical thinking through peer explanation and judgment (Fitriana et al., 2023). These studies converge on a mechanism-level account: explanation, questioning, feedback, problem representation, collaborative reasoning, and iterative revision make thinking visible and therefore developable.

The results also clarify why creative thinking should not be treated as an automatic by-product of activity. Google Sites-supported project learning enhanced creativity and collaboration (Asyari et al., 2024), and artificial-intelligence applications have been associated with creative-thinking development among students in Quranic Sciences and Islamic Education (Hamid & Salman, 2025). Yet assessment content in Islamic Education curricula can still contain weak representation of fluency, flexibility, originality, and elaboration (Aldossari, 2021). The implication is structural: if curriculum, pedagogy, and technology invite creativity but assessment rewards reproduction, the educational signal received by learners remains contradictory.

Faith integration emerges as a potential cognitive resource when it is operationalized through authentic reasoning rather than appended symbolically. Culturally integrated flipped learning improved conceptual understanding and problem solving (Ferdiansyah et al., 2025), while Bahtsul Masa'il demonstrates how a traditional Islamic deliberative practice can be adapted to structured learning (Hudri & Al Haj Zaini, 2023). Religious or cultural content therefore becomes cognitively consequential when learners must interpret, compare, justify, resolve tensions, or apply principles to complex situations.

Teacher capacity is a central mediating mechanism. Preservice Islamic Education teachers in online field practice reported deficits in pedagogical expertise and difficulties sustaining interaction (Alkandari, 2024). Transformational leadership, teamwork, and work engagement can strengthen teacher creativity (Rais & Rubini, 2022), while leadership style, competence, emotional intelligence, and motivation contribute to teacher performance in madrasahs (Ramly et al., 2024). These findings reinforce the appraisal result that many institutional conclusions rest on observational or self-reported evidence: they are important for explaining implementation conditions, but they should not be interpreted as causal estimates.

The evidence also exposes a curriculum-to-assessment gap. Some teachers employ varied learning models and higher-order questions to promote higher cognitive levels (Mislikhah, 2021), yet other studies show that assessment practice remains dominated by lower-order items. Assessment therefore communicates what counts as legitimate knowledge. When inquiry-oriented lessons culminate in examinations that reward memorization, students receive contradictory signals; when evaluation requires explanation, comparison, argumentation, originality, and application, curriculum aspirations become more consequential. The high critical-thinking gains reported for a 5E learning cycle integrated with local wisdom illustrate the value of aligned task structures (Ramdani et al., 2021).

A further theoretical implication is that the four pathways should be treated as a configuration rather than a causal ladder. Pedagogy can activate reasoning, but curriculum determines which problems are worth reasoning about; assessment determines which performances are rewarded; and institutions determine whether teachers have the time, resources, authority, and professional support to sustain those practices. This explains why apparently similar interventions can yield different outcomes without assuming that one study is simply 'right' and another 'wrong'. The framework therefore shifts the unit of explanation from isolated methods to educational configurations.

Several limitations constrain inference. The review used Scopus only and deliberately focused on 2021–2026, which may underrepresent older foundational studies or records indexed exclusively in other databases. The original search employed umbrella Islamic-education terms rather than every local institutional label, so studies indexed only under terms such as pesantren may have been missed. The empirical evidence is geographically concentrated, especially in Indonesia and Malaysia, and many studies use single-site samples, short interventions, self-report measures, or locally developed instruments. Measurement heterogeneity also complicates comparisons across critical thinking, creativity, higher-order thinking, inquiry, problem solving, and related constructs. Future research should

prioritize longitudinal, mechanism-focused, multi-site, and cross-national designs with validated measures and simultaneous assessment of critical and creative thinking.

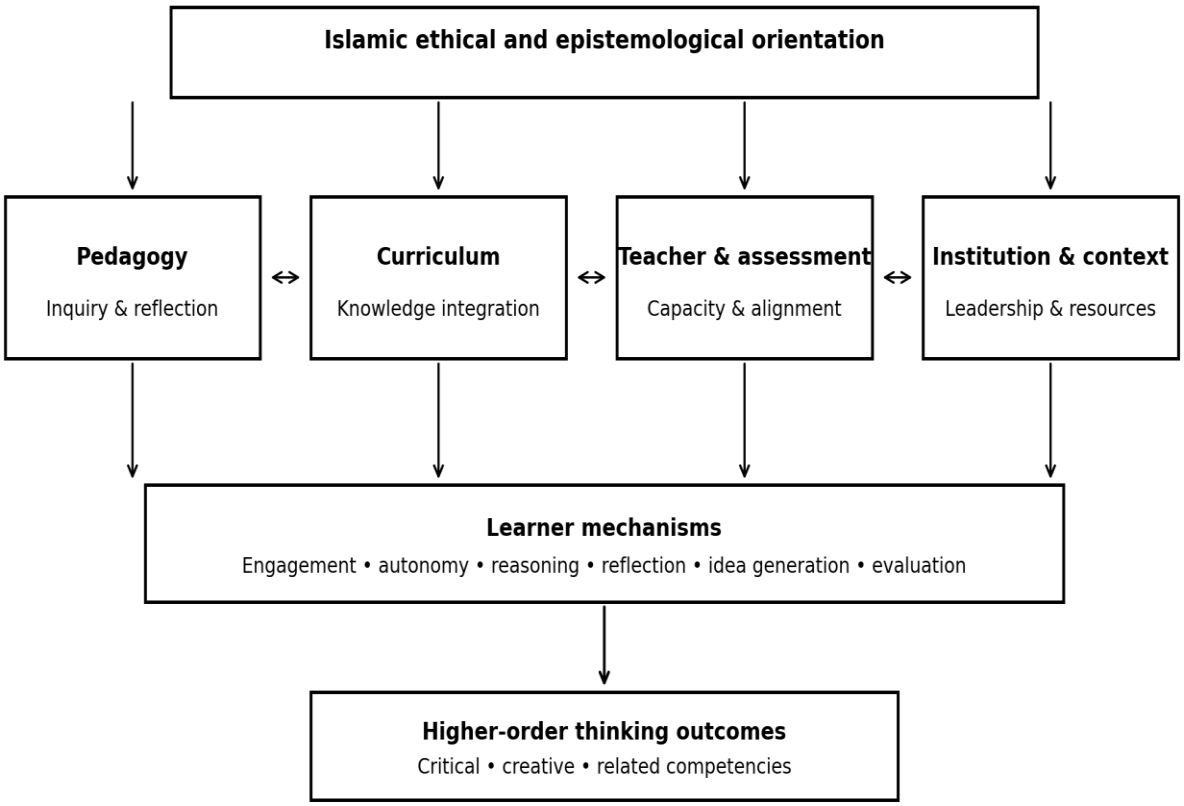


Figure 2. Integrated Pathways Framework for Higher-Order Thinking in Islamic Education

Figure 2 presents the Integrated Pathways Framework as an interpretive synthesis rather than a tested causal model. It proposes that Islamic ethical and epistemological orientation can shape four interacting pathways - pedagogy, curriculum, teacher/assessment capacity, and institution/context - which influence learner engagement, autonomy, reasoning, reflection, idea generation, and evaluation. The framework offers testable propositions for future research while preserving appropriate caution about the heterogeneity and methodological limitations of the current evidence.

CONCLUSION

This systematic review found that higher-order thinking in Islamic education developed through a multi-level educational ecology rather than through a single instructional technique. Active, inquiry-based, reflective, collaborative, problem-oriented, and digitally supported approaches frequently produced positive outcomes, but their effects depended on the cognitive mechanisms they activated and the conditions under which they were implemented. Curriculum mattered when Islamic ethical and epistemological perspectives functioned as resources for authentic reasoning rather than as decorative additions. Teacher knowledge, professional learning, self-efficacy, and assessment literacy determined whether curricular aspirations became cognitively demanding classroom experiences, while leadership, resources, technology, school culture, and governance influenced whether such practices could be sustained. The Integrated Pathways Framework therefore links pedagogical, curricular/epistemological, teacher/assessment, and institutional/contextual domains through learner-level mechanisms. The evidence remains heterogeneous and geographically concentrated, so causal generalization should remain cautious.

The practical implication is not to add another isolated 'innovative method', but to design a coherent educational configuration in which curriculum, pedagogy, assessment, teacher development, institutional support, and religious-ethical purpose consistently demand and reward higher-order thought.

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REFERENCES

Abdelgadir, R. M., Yahaya, A. M. B., & Arshad, A. B. M. (2023). The Development of Islamic Education Syllabus in Secondary Schools between Malaysia and Sudan: Challenges and Prospects. Global Journal Al-Thaqafah, 13(2), 213–227. https://doi.org/10.7187/GJAT122023-12

Ak, W. W., Imran, I., Darwani, D., & Sulaiman, S. (2026). Beyond Classroom Learning: Institutionalizing Mental Revolution Values in Indonesian State Islamic Senior High Schools. Jurnal Ilmiah Peuradeun, 14(2), 1465–1486. https://doi.org/10.26811/peuradeun.v14i2.1355

Aldossari, A. T. (2021). Creative thinking skills included in the content of evaluation questions in the curricula of the Kingdom of Saudi Arabia. International Journal of Education and Practice, 9(3), 520–531. https://doi.org/10.18488/journal.61.2021.93.520.531

Alkandari, K. (2024). Impact of Online Field Practice on Islamic Education Preservice Teachers: Expectations, Learning Loss, and Professional Skill Formation. International Journal of Distance Education Technologies, 22(1). https://doi.org/10.4018/IJDET.347215

Alqudah, H. A., Mustafa, M. K., & Al Salhi, N. R. (2024). The Effect of Using BUXTON Model in Aquiering Jurisprudence Concepts and Developing the Critical Thinking Skills in Islamic Education Subject for the Ninth-Grade Students. Dirasat: Human and Social Sciences, 51(3), 1–14. https://doi.org/10.35516/hum.v51i3.1379

Amalia, E. R., Dwi Bhakti Indri, M., Khoiriyati, S., Ummah, N., Oviani, M., Wardhani, J. K., & Umayyah, U. (2024). Bridging Educational Reform and Faith: Evaluating Kurikulum Merdeka's Compatibility with Islamic Values in Madrasahs. Munaddhomah, 5(4), 483–500. https://doi.org/10.31538/munaddhomah.v5i4.1413

Amaliyah, N., Abdullah, Z., Omonovich, K. D., & As'ad, M. (2026). STRUCTURED INQUIRY WITHIN A TRANSDISCIPLINARY CURRICULUM: ADVANCING SOCIAL STUDIES PEDAGOGY IN ISLAMIC SCHOOLS. Jurnal Pendidikan Islam, 12(1), 161–174. https://doi.org/10.15575/jpi.v12i1.54111

Amirudin, A., Muzaki, I. A., & Nurhayati, S. (2025). Problem-Based Learning as a Pedagogical Innovation for Transforming Higher Education Students' Islamic Religious Comprehension. Educational Process: International Journal, 18. https://doi.org/10.22521/edupij.2025.18.412

Angraini, D., Sulistiyo, U., Haryanto, E., & Pratama, A. (2025). Project-Based or Problem-Based Learning? Unveiling Islamic University Students' Preferences and Experiences in Writing Classes. Studies in English Language and Education, 12(3), 1427–1443. https://doi.org/10.24815/siele.v12i3.40831

Assalihee, M., Bakoh, N., Boonsuk, Y., & Songmuang, J. (2024). Transforming Islamic Education through Lesson Study (LS): A Classroom-Based Approach to Professional Development in Southern Thailand. Education Sciences, 14(9). https://doi.org/10.3390/educsci14091029

Asyari, A., Meiliyadi, L. A. D., Sucilestari, R., & Arizona, K. (2024). EXPLORING STUDENT CREATIVITY AND COLLABORATION THROUGH PROJECT-BASED LEARNING WITH GOOGLE SITES. Jurnal Pendidikan Islam, 10(2), 308–322. https://doi.org/10.15575/jpi.v10i2.40215

Baihaqi, M., & Huda, H. (2025). Humanizing teacher education for madrasah contexts: A curriculum model integrating ethical reflection on socio-scientific issues. Cogent Education, 12(1). https://doi.org/10.1080/2331186X.2025.2583513

Balulu, N., Isnawati, I., Supriyadi, S., Jatmiko, B., Ahmad, Z., Limatahu, I., & Takda, A. (2026). CRITICAL THINKING DEVELOPMENT IN PHYSICS EDUCATION THROUGH THE IMPLEMENTATION OF THE BW-EXPORT MODEL AT MADRASAH ALIYAH. Jurnal Pendidikan Islam, 12(1), 35–47. https://doi.org/10.15575/jpi.v12i1.49792

Basri, H., Suhartini, A., Nursobah, A., & Ruswandi, U. (2022). APPLYING HIGHER ORDER THINKING SKILL (HOTS) TO STRENGTHEN STUDENTS' RELIGIOUS MODERATION AT MADRASAH ALIYAH. Jurnal Pendidikan Islam, 8(2), 207–220. https://doi.org/10.15575/jpi.v8i2.21133

Biggs, J. (1996). Enhancing teaching through constructive alignment. Higher Education, 32, 347–364. https://doi.org/10.1007/BF00138871

Bramer, W. M., de Jonge, G. B., Rethlefsen, M. L., Mast, F., & Kleijnen, J. (2018). A systematic approach to searching: An efficient and complete method to develop literature searches. Journal of the Medical Library Association, 106(4), 531–541. https://doi.org/10.5195/jmla.2018.283

Desrani, A., Ritonga, A. W., & Lubis, M. (2023). Learning by doing: A teaching paradigm for active learning in Islamic high school. Journal of Education and E-Learning Research, 10(4), 793–799. https://doi.org/10.20448/jeelr.v10i4.5224

Dzul, H., Hussin, Z., Sumari, M., & Sulaiman, A. M. (2022). THE EFFECT OF SELF-EFFICACY MEDIATORS ON THE PROFESSIONAL LEARNING COMMUNITY IN MALAYSIA AND THE TEACHING OF ISLAMIC EDUCATION THAT INTEGRATE HIGHER-ORDER THINKING SKILLS. Malaysian Online Journal of Educational Management, 10(3), 38–51. https://mojes.um.edu.my/index.php/MOJEM/article/view/37795

Ferdiansyah, H., Degeng, I. N. S., Kuswandi, D., & Praherdhiono, H. (2025). Integrating The Tudang Sipulung Culture into The Flipped Classroom Strategy for Conceptual Understanding and Problem Solving in Science Subjects. Educational Process: International Journal, 18. https://doi.org/10.22521/edupij.2025.18.438

Fitriana, L., Wiraya, A., Hendriyanto, A., Sahara, S., Muhaimin, L. H., & Putri, D. P. (2023). Implementation of the Jigsaw Model to Improve Critical-Thinking Skills. Journal of Higher Education Theory and Practice, 23(15), 11–20. https://doi.org/10.33423/jhetp.v23i15.6402

Hadisi, L. (2025). Facing the Challenges of Globalization: Transforming Madrasah Education from Bilingual to International Classrooms. Nazhruna: Jurnal Pendidikan Islam, 8(1), 17–30. https://doi.org/10.31538/nzh.v8i1.125

Halpern, D. F. (1998). Teaching critical thinking for transfer across domains: Dispositions, skills, structure training, and metacognitive monitoring. American Psychologist, 53(4), 449–455. https://doi.org/10.1037/0003-066X.53.4.449

Halstead, J. M. (2004). An Islamic concept of education. Comparative Education, 40(4), 517–529. https://doi.org/10.1080/0305006042000284510

Hamid, R. N., & Salman, A. Y. (2025). The Role of Artificial Intelligence in Enhancing Creative Thinking among Students of the Departments of Quranic Sciences and Islamic Education. Educational Sciences: Theory and Practice, 25(2), 163–175. https://doi.org/10.12738/jestp.2025.2.11

Hidayah, N., Syafe'i, I., Fauzan, A., & Pahrudin, A. (2025). Quality Management Strategies in Facing the Resilience Crisis of Elementary Madrasahs in the 5.0 Era. Nazhruna: Jurnal Pendidikan Islam, 8(3), 643–660. https://doi.org/10.31538/nzh.v8i3.359

Hong, Q. N., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M.-P., Griffiths, F., Nicolau, B., O'Cathain, A., Rousseau, M.-C., Vedel, I., & Pluye, P. (2018). The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. Education for Information, 34(4), 285–291. https://doi.org/10.3233/EFI-180221

Hudri, S., & Al Haj Zaini, Z. (2023). Implementation of the Bahtsul Masa'il Method in Improving Ability to Read the Book of Fathul Qorib. Munaddhomah, 4(4), 1008–1018. https://doi.org/10.31538/munaddhomah.v4i4.729

Hussien, S., Wahab, M. K. A., & Hashim, R. (2021). IMPROVING STUDENTS' INQUIRY SKILLS IN ISLAMIC EDUCATION THROUGH HIKMAH PEDAGOGY AND COMMUNITY OF INQUIRY. Malaysian Journal of Learning and Instruction, 18(2), 189–214. https://doi.org/10.32890/mjli2021.18.2.7

Jima'ain, M. T. A., Hanapi, M. S., Termizi, M. D. A., Salleh, M. N. M., Husain, M. H. E., & Shah, A. M. (2026). DEVELOPING A SIRAH INSTRUCTIONAL PLANNING FRAMEWORK: INTEGRATING THE COMPOSITION OF HIGHER-ORDER THINKING SKILLS (HOTS). Planning Malaysia, 24(3), 258–272. https://doi.org/10.21837/pm.v24i42.2043

Jumadi, J., Perdana, R., & Rosana, D. (2021). The impact of problem-based learning with argument mapping and online laboratory on scientific argumentation skill. International Journal of Evaluation and Research in Education, 10(1), 16–23. https://doi.org/10.11591/ijere.v10i1.20593

Kosasih, A., Supriyadi, T., Firmansyah, M. I., & Rahminawati, N. (2022). Higher-Order Thinking Skills in Primary School: Teachers' Perceptions of Islamic Education. Journal of Ethnic and Cultural Studies, 9(1), 56–76. https://doi.org/10.29333/ejecs/994

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. Theory Into Practice, 41(4), 212–218. https://doi.org/10.1207/s15430421tip4104_2

Madjid, A., & Shodiq, S. F. (2026). Enhancing religious character through a technology-based learning model in boarding school: Examining the influence of wellbeing, critical thinking skills, and social skills as moderator variables. Frontiers in Education, 11. https://doi.org/10.3389/feduc.2026.1758690

McGowan, J., Sampson, M., Salzwedel, D. M., Cogo, E., Foerster, V., & Lefebvre, C. (2016). PRESS Peer Review of Electronic Search Strategies: 2015 guideline statement. Journal of Clinical Epidemiology, 75, 40–46. https://doi.org/10.1016/j.jclinepi.2016.01.021

Mislikhah, H. S. (2021). Implementation of Higher Order Thinking Skills Within Indonesian Language Learning at Madrasah Ibtidaiyah. Review of International Geographical Education Online, 11(5), 2207–2214. https://doi.org/10.48047/rigeo.11.05.123

Mohamed, A. M., Hehsan, A., Saidalvi, A., Nasi, B. M., Faisal, M. S., & Awae, F. (2024). Embedding higher order thinking skills in Islamic history (Sirah) education in Malaysia. International Journal of Evaluation and Research in Education, 13(2), 952–959. https://doi.org/10.11591/ijere.v13i2.26431

Mousavi, S. M., & Vidal, M. (2026). Religious Conservatism versus Elite Professionalism: Contradictory Socialisation at an Elite Islamic School. Sociology, 60(3), 667–685. https://doi.org/10.1177/00380385251376221

Nasir, M. (2021). Curriculum Development and Accreditation Standards in the Traditional Islamic Schools in Indonesia. Journal of Curriculum Studies Research, 3(2), 37–56. https://doi.org/10.46303/jcsr.2020.3

Otaya, L. G., Yahiji, K., Rasimin, R., Rahmawati, R., Imtihan, N., & Muhamad, N. B. (2025). ASSESSMENT OF TEACHERS' ABILITY TO DEVELOP HOTSBASED TEST ITEMS: A GRM ANALYSIS. Jurnal Ilmiah Peuradeun, 13(3), 1995–2018. https://doi.org/10.26811/peuradeun.v13i3.1555

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P., & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ, 372, n71. https://doi.org/10.1136/bmj.n71

Parinduri, M. A., & Ibarra, F. P. (2025). STRENGTHENING THE IDEOLOGY OF ISLAMIC RELIGIOUS EDUCATION IN THE ERA OF TECHNOLOGICAL DISRUPTION. Jurnal Ilmiah Ilmu Terapan Universitas Jambi, 9(2), 465–473. https://doi.org/10.22437/jiituj.v9i2.41841

Rais, S., & Rubini, B. (2022). Increasing Teacher Creativity through Strengthening Transformational Leadership, Teamwork, and Work Engagement. Pegem Egitim ve Ogretim Dergisi, 12(1), 232–241. https://doi.org/10.47750/pegegog.12.01.24

Ramdani, A., Jufri, A. W., Fahrurrozi, M., & Yustiqvar, M. (2021). Analysis of students' critical thinking skills in terms of gender using science teaching materials based on the 5e learning cycle integrated with local wisdom. Jurnal Pendidikan IPA Indonesia, 10(2), 187–199. https://doi.org/10.15294/jpii.v10i2.29956

Ramly, M., Basalamah, S., & Bunyamin, A. (2024). PERFORMANCE ENHANCEMENT OF MADRASAH TEACHERS': A STRUCTURAL EQUATION MODEL. Revista de Gestao Social e Ambiental, 18(2). https://doi.org/10.24857/RGSA.V18N2-067

Raswan, R., Husni, A., Mudhofir, I., Qodri, M., Husein, S. Y., Muradi, A., & Ashfia, A. (2025). DEVELOPING A COMPETENCY-BASED ARABIC CURRICULUM TO FOSTER MERDEKA BELAJAR IN INDONESIAN MADRASAHS. Jurnal Ilmiah Peuradeun, 13(3), 1881–1908. https://doi.org/10.26811/peuradeun.v13i3.1930

Rethlefsen, M. L., Kirtley, S., Waffenschmidt, S., Ayala, A. P., Moher, D., Page, M. J., & Koffel, J. B. (2021). PRISMA-S: An extension to the PRISMA Statement for Reporting Literature Searches in Systematic Reviews. Systematic Reviews, 10, 39. https://doi.org/10.1186/s13643-020-01542-z

Runco, M. A., & Jaeger, G. J. (2012). The standard definition of creativity. Creativity Research Journal, 24(1), 92–96. https://doi.org/10.1080/10400419.2012.650092

Sapiudin, S., Herianingtyas, N. L. R., Herlanti, Y., Hudaa, S., Wajdi, M. B. N., & Ying, L. (2026). Transforming Fiqh Instruction Through the Cyber Scientific Approach: Enhancing Critical Thinking in Islamic Education. Jurnal Ilmiah Peuradeun, 14(1), 299–322. https://doi.org/10.26811/peuradeun.v14i1.2198

Sarwi, S., Marwoto, P., Susilaningsih, E., Lathif, Y. F., & Winarto, W. (2024). Science learning STEM-R approach: A study of students' reflective and critical thinking. Journal of Education and Learning, 18(2), 462–470. https://doi.org/10.11591/edulearn.v18i2.21080

Sayekti, R., Arsyad, J., & Yusnaldi, E. (2026). Toward a pedagogical model: Insights from student perspectives in learning Islamic Education Philosophy. Cogent Education, 13(1). https://doi.org/10.1080/2331186X.2026.2645287

Sri Mardiyanti Syam, A. (2025). BRIDGING POLICY AND PRACTICE: EVALUATING THE CURRICULUM EFFECTIVENESS IN FOSTERING RELIGIOUS MODERATION AND 21ST-CENTURY COMPETENCIES. Jurnal Pendidikan Islam, 11(2), 403–414. https://doi.org/10.15575/jpi.v11i2.49596

Sterne, J. A. C., Hernán, M. A., Reeves, B. C., Savović, J., Berkman, N. D., Viswanathan, M., Henry, D., Altman, D. G., Ansari, M. T., Boutron, I., Carpenter, J. R., Chan, A.-W., Churchill, R., Deeks, J. J., Hróbjartsson, A., Kirkham, J., Jüni, P., Loke, Y. K., Pigott, T. D., Ramsay, C. R., Regidor, D., Rothstein, H. R., Sandhu, L., Santaguida, P. L., Schünemann, H. J., Shea, B., Shrier, I., Tugwell, P., Turner, L., Valentine, J. C., Waddington, H., Waters, E., Wells, G. A., Whiting, P. F., & Higgins, J. P. T. (2016). ROBINS-I: A tool for assessing risk of bias in non-randomised studies of interventions. BMJ, 355, i4919. https://doi.org/10.1136/bmj.i4919

Sudiantini, D., Mirnawati, M., Desianti, L. C., & Aji, Y. A. (2026). Gamification and Adaptive Learning Innovations for Enhancing Students' Critical Thinking and Creativity at an Islamic Boarding School in Indonesia. Nazhruna: Jurnal Pendidikan Islam, 9(2), 518–535. https://doi.org/10.31538/nzh.v9i2.414

Suntiah, R. (2021). STUDENTS' CRITICAL THINKING SKILLS IN THE REFLECTIVE CLASS OF ISLAMIC CULTURAL HISTORY. Jurnal Pendidikan Islam, 7(2), 195–204. https://doi.org/10.15575/jpi.v7i2.15060

Suyudi, M., Suyatno, S., Rahmatullah, A. S., Rachmawati, Y., & Hariyati, N. (2022). The Effect of Instructional Leadership and Creative Teaching on Student Actualization: Student Satisfaction as a Mediator Variable. International Journal of Instruction, 15(1), 113–134. https://doi.org/10.29333/iji.2022.1517a

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. BMC Medical Research Methodology, 8, 45. https://doi.org/10.1186/1471-2288-8-45

Tolla, I., & Jabu, B. (2022). Development of the 4C Teaching Model to Improve Students' Mathematical Critical Thinking Skills. International Journal of Educational Methodology, 8(3), 493–504. https://doi.org/10.12973/ijem.8.3.493

Toshtemirova, S., Koshanova, N., Khaydarova, Z., Ilmurodova, F., Sadullaeva, M., & Nurmukhammadova, D. (2025). INTEGRATIVE PEDAGOGY AND DIDACTIC MODELS IN TEACHING HISTORY THROUGH ISLAMIC EDUCATION: INSIGHTS FROM UZBEKISTAN. Jurnal Pendidikan Islam, 11(1), 63–76. https://doi.org/10.15575/jpi.v11i1.44967

Uyuni, B., Adnan, M., & Ma'rifataini, L. (2026). A child-Friendly pesantren model integrating maqāṣid al-syarī'ah and SDGs. Cogent Education, 13(1). https://doi.org/10.1080/2331186X.2026.2701526

Wigati, I., Astuti, M., & Ramdani, Z. (2023). Perception of Religious Lecturers of Higher Order Thinking Skills and Students' Academic Performance in Online Learning. International Journal of Learning, Teaching and Educational Research, 22(4), 124–140. https://doi.org/10.26803/IJLTER.22.4.8

Zamsiswaya, Z., Mounadil, A. I., & Abdel-Latief, S. (2024). Teacher identity, Islamic behavior, and project-based learning methods for madrasah teachers: A phenomenological approach. Cakrawala Pendidikan, 43(2), 344–357. https://doi.org/10.21831/cp.v43i2.51909

Zaqiah, Q. Y., Hasanah, A., & Heryati, Y. (2024). THE ROLE OF STEAM EDUCATION IN IMPROVING STUDENT COLLABORATION AND CREATIVITY: A CASE STUDY IN MADRASAH. Jurnal Pendidikan Islam, 10(1), 101–112. https://doi.org/10.15575/jpi.v10i1.35207

`

Zulkifli, N., Hamzah, M. I., & Razak, K. A. (2022). Creative teaching practice among Islamic education lecturers: The influence of gender, age, and teaching experience. Cakrawala Pendidikan, 41(2), 416–424. https://doi.org/10.21831/cp.v41i2.40206.