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Critical Thinking Development in Culturally Responsive Teaching at the Primary School Level: A Systematic Literature Review

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Abstract. Increasing classroom diversity and the rapid digitization of elementary education have intensified the need to embed critical thinking (CT) within culturally responsive teaching (CRT). However, empirical synthesis on this intersection remains limited, particularly in Global South contexts and technology- enhanced learning (TEL) environments. This multi-source systematic literature review (SLR) synthesizes evidence from 33 studies across three complementary corpora: (A) Scopus-indexed studies examining CT-CRT integration in primary schools (2016–2025); (B) Scopus and Web of Science studies on culturally responsive pedagogy in TEL environments in developing-country contexts (2020–2025); and (C) supplementary Indonesian practitioner evidence retrieved via Google Scholar (2020–2025) to address indexation gaps. Following PRISMA 2020 guidance [12] and thematic synthesis procedures [13], seven higher-order themes were identified: cultural integration as a CT scaffold; teacher epistemic humility as a constitutive variable; equity and structural determinants; cross-cultural variability in CT constructs; ethnoscience and indigenous knowledge in digital STEM; systemic barriers to CRP-EdTech adoption; and HOTS-CRT curriculum development. Quantitative evidence indicates that culturally aligned instruction can yield statistically significant CT gains, while qualitative evidence suggests that superficial cultural inclusion without epistemic transformation may undermine learning. The review advances three theoretical propositions: teacher epistemic humility is constitutive to authentic CRT; CT sub-competency structures are culturally modulated; and HOTS- CRT integration is a curriculum-development priority in developing-country elementary education.

Keywords. critical thinking; culturally responsive teaching; primary education; systematic literature review; higher-order thinking skills (HOTS); Global South; epistemic humility; ethnoscience; digital pedagogy; Indonesia

1. Introduction

Rapid globalization and demographic change have increased linguistic, ethnic, and sociocultural diversity in primary classrooms worldwide [1]. At the same time, large-scale disruptions and accelerated digitization have expanded the role of technology in elementary learning [2]. Within these conditions, culturally responsive teaching (CRT) has gained renewed attention as an approach that treats learners' cultural experiences as epistemic resources for learning rather than as background variables [5]. In parallel, critical thinking (CT) is widely framed as a key competence for civic participation and twenty-first-century learning, and is often operationalized through widely used skill frameworks [6,8]. Despite converging interest, the relationship between CRT and CT development in primary education remains unevenly theorized

a] s diverse geopolitical contexts and technology-enhanced learning environments.

This review addresses three interrelated gaps. First, existing reviews tend to focus on secondary or tertiary education, or treat cultural responsiveness and CT development as separate strands rather than an integrated instructional problem. Second, as educational technology platforms proliferate, it remains unclear how cultural values and epistemological assumptions are embedded in learning designs and assessments, and how these interact with culturally responsive pedagogy [10,11]. Third, practitioner-level evidence from resource-constrained contexts—where teachers develop culturally aligned materials under limited time, infrastructure, and professional support—remains underrepresented in internationally indexed literature.

Accordingly, this multi-source systematic literature review (SLR) synthesizes evidence across three corpora and addresses four research questions: (RQ1) What approaches and practices are associated with CT-CRT integration in primary schools across geopolitical contexts? (RQ2) What themes characterize culturally responsive pedagogy research in technology-enhanced learning (TEL) environments in developing-country settings? (RQ3) What practitioner evidence is available on the development and validation of CRT-aligned materials and HOTS-based interventions in Indonesian elementary schools? (RQ4) What methodological, theoretical, and geographic gaps remain, and what priorities follow for future research?

To answer these questions, the review synthesizes 33 studies across three complementary corpora: Corpus A (Scopus-indexed primary-level CT-CRT studies, 2016–2025); Corpus B (Scopus and Web of Science studies on CRP in TEL in developing-country contexts, 2020–2025); and Corpus C (supplementary Indonesian practitioner evidence retrieved via Google Scholar, 2020–2025). This design aims to provide a more equitable evidence base by combining indexed scholarship with practitioner research that may be structurally underrepresented in major databases.

2. Theoretical Framework

This review is guided by a multi-tier theoretical framework that conceptualizes culturally responsive teaching (CRT) and critical thinking (CT) as interdependent dimensions of equitable and transformative pedagogy. Five overlapping lenses inform synthesis and interpretation: culturally responsive pedagogy; CT and higher-order thinking skills (HOTS); social-constructivist learning theory; critical pedagogy; and the cultural politics of educational technology.

2.1. Culturally Responsive Teaching

CRT positions students' culture, lived experience, and identity formation as epistemic resources central to learning. Gay's framework highlights culturally diverse knowledge construction, culturally relevant teaching design, cultural caring, effective communication with diverse learners, and culturally responsive instruction [5]. Ladson-Billings further emphasizes academic achievement, cultural competence, and sociopolitical consciousness as core aims of culturally relevant pedagogy [9].

CRT also connects to social-constructivist views of learning, particularly Vygotsky's emphasis on socially mediated development within the Zone of Proximal Development (ZPD) [10]. When mediational tools and narratives are drawn from learners' cultural repertoires, the ZPD becomes culturally enabling. The "funds of knowledge" framework similarly argues that household and community knowledge can be treated as intellectual assets for instruction [11].

2.2. Critical Thinking and HOTS

Dominant CT frameworks in education are often derived from analytic traditions and operationalized through standardized skill models. Ennis defines CT as reasonable, reflective thinking focused on deciding what to believe or do [8], while the Delphi consensus model specifies

cognitive processes, evaluation, inference, explanation, and self-regulation [6]. In many systems, CT is implemented through HOTS-oriented curriculum targets and assessments.

Comparative research, however, suggests that what counts as valid reasoning and legitimate epistemic authority can vary by culture. This raises cross-cultural validity questions for CT assessment and for transferring CT/HOTS frameworks into culturally diverse primary contexts, especially when reasoning is expressed through implicit, relational, or non-verbal modalities [20].

2.3. Social-Constructivism and Inquiry Models

Social-constructivist learning theory provides a mechanism linking CRT to CT development: cognitively meaningful learning arises through culturally mediated dialogue, co-problem solving, and negotiation of meaning [10]. Inquiry-based models such as problem-based learning can operationalize these mechanisms through extended collaborative inquiry that invites evaluation of evidence and reasoning [25].

2.4. Critical Pedagogy and Epistemic Humility

Critical pedagogy frames education as a practice of freedom in which learners cultivate critical consciousness to interpret and act on social worlds shaped by power [12]. In this review, teacher epistemic humility is treated as a constitutive variable for authentic CRT-CT integration: teachers' willingness to examine and revise their own epistemic assumptions influences whether cultural inclusion becomes transformative or merely performative [19].

2.5. Educational Technologies and Cultural Politics

Digital learning technologies are not culturally neutral; they embed assumptions about knowledge, learning, and assessment [13]. In Global South contexts, infrastructure inequality and unequal design power can intensify epistemic marginalization, positioning educators as platform consumers rather than co-producers [14]. These dynamics shape what culturally responsive pedagogy can achieve in TEL settings.

2.6. Integrative Proposition

Across these lenses, the review advances a core proposition: culturally embedded teaching can produce measurable gains in critical thinking when cultural resources function as cognitively activating scaffolds within epistemically humble, constructivist-aligned learning contexts. These effects are further modulated by structural determinants (e.g., resource inequity) and by the cultural politics of technology-mediated learning.

3. Methodology

This study used a multi-source systematic literature review (SLR) design following PRISMA 2020 reporting guidance [12]. A multi-source approach was selected to capture both internationally indexed research and practitioner-facing evidence that may be underrepresented in major databases.

3.1. Research Design and Corpora

Three corpora were defined a priori: Corpus A (Scopus-indexed empirical studies on CT-CRT integration in primary education, 2016–2025); Corpus B (Scopus and Web of Science studies on culturally responsive pedagogy in TEL environments in developing-country contexts, 2020–2025); and Corpus C (supplementary Indonesian practitioner evidence retrieved via Google Scholar, 2020– 2025). Eligibility boundaries and analysis procedures were specified before screening. The protocol followed PRISMA 2020 guidance [12].

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e three corpora.

Corpus	Focus	Database(s)	Year range	N included	Typical designs
A	CT–CRT integration in primary education	Scopus	2016–2025	18	Qualitative, mixed-methods, limited quantitative
B	CRP within TEL in developing-country contexts	Scopus; Web of Science	2020–2025	12	Qualitative, mixed-methods, one SLR
C	Indonesian practitioner evidence on CRT/HOTS materials	Google Scholar (supplementary)	2020–2025	3	Needs analysis; classroom implementation; development studies
Total	Three complementary evidence domains	Three sources	2016–2025	33	Full methodological spectrum

3.2. Eligibility Criteria

Eligibility criteria were operationalized using the PICOS framework (Population, Intervention, Comparator, Outcome, Study design) consistent with PRISMA 2020 [12]. Criteria were specified in advance and applied consistently during screening and eligibility assessment.

Table 2. PICOS-based eligibility criteria (summary).

Criterion	Corpus A	Corpus B	Corpus C
Population	Primary/elementary students & teachers	TEL students/teachers in developing- country contexts	Indonesian elementary students/teachers
Intervention	CRT strategies; culturally responsive design	CRP-aligned digital/blended interventions	CRT/HOTS materials; teacher-developed resources
Comparator	Conventional/non-CRT instruction	Non-CRP TEL; baseline	Baseline or control where applicable
Outcome	Measured CT/HOTS outcomes	CT/HOTS and related outcomes	CT/HOTS indicators; feasibility/validity where reported
Design	Empirical quantitative/qualitative/mixed	Peer-reviewed empirical; diverse designs	Needs analysis; development/implementation studies
Language	English	English	English or Indonesian with English abstract

3.3. Search Strategy

Database searches were conducted between January and March 2025 using iterative Boolean queries refined through pilot searching. Searches were supplemented by backward reference screening and forward citation tracking. Search strings combined CT/HOTS terms with CRT/CRP terms and primary-education or TEL context terms.

ıter Reliability

Study selection followed PRISMA phases: identification, title/abstract screening, full-text eligibility assessment, and inclusion [12]. Two reviewers independently screened records and resolved discrepancies through discussion. Cohen's kappa values indicated strong agreement at title/abstract screening ($\kappa \approx .81–.88$ across corpora).

Table 3. PRISMA record flow across corpora.

PRISMA stage	Corpus A	Corpus B	Corpus C
Records retrieved	112	187	43
Duplicates removed	11	24	4
Title/abstract screened	101	163	39
Excluded (title/abstract)	64	121	29
Full text assessed	37	42	10
Excluded (full text)	19	30	7
Included	18	12	3

3.5. Quality Appraisal

Methodological quality was appraised using design-appropriate tools. Minimum thresholds were specified a priori. Quality appraisal informed evidence weighting during synthesis rather than serving as the only basis for exclusion.

3.6. Data Extraction

Data were extracted using a standardized matrix pilot-tested on a subset of included studies. Extracted domains included bibliographic details; participant/context descriptors; CRT/CRP operationalization; CT/HOTS operationalization and measurement; intervention characteristics; outcomes; and methodological limitations. Extraction was performed in duplicate and reconciled by discussion.

3.7. Data Synthesis

The review used thematic synthesis to integrate evidence across diverse methodologies [13]. Following line-by-line coding and corpus-level descriptive theming, analytical themes were generated through cross-corpus interpretive synthesis. Reflexive thematic analysis principles supported transparency and reflexivity during theme development [14]. A bibliometric mapping (keyword co- occurrence) was used descriptively to contextualize thematic clustering, but themes were derived from coded findings.

4. Results

4.1. Corpus Characteristics

Across the three corpora, 33 studies were included after PRISMA screening (Corpus A: 18; Corpus B: 12; Corpus C: 3). Corpus A spanned 2016–2025 with a strong concentration in 2024–2025, while Corpus B studies clustered in 2022–2025. Qualitative and mixed-methods designs predominated, reflecting the field's emphasis on documenting enactment, cultural meaning-making, and implementation conditions.

4.2. Thematic Synthesis

Seven superordinate themes were identified through thematic synthesis across all included studies [13]. Themes 1–6 were supported across multiple corpora; Theme 7 emerged primarily from Indonesian practitioner evidence.

hemes across corpora

Theme	Corpus A (n=18)	Corpus B (n=12)	Corpus C (n=3)	Summary label
1	8	4	2	Cultural integration as CT scaffold
2	5	2	1	Teacher epistemic humility
3	3	3	0	Equity and structural determinants
4	4	3	0	Cross-cultural variability in CT constructs
5	2	5	1	Ethnoscience and indigenous knowledge in digital STEM
6	1	3	1	Systemic barriers to CRP-EdTech adoption
7	0	0	3	HOTS-CRT curriculum development (emerging)

Theme 1: Cultural integration as a CT scaffold.

Across contexts, purposeful integration of learners' cultural knowledge into instructional design functioned as a scaffold for critical thinking. Quasi-experimental evidence indicates that culturally aligned instruction can yield statistically significant CT gains [16]. Complementary qualitative findings suggest that culturally legitimate tasks can deepen analytical engagement when cultural resources are used as epistemically substantive mediators rather than surface-level representation.

Theme 2: Teacher epistemic humility as a constitutive variable.

Teacher epistemic orientation emerged as a decisive mediator of CRT-CT integration. Evidence suggests that culturally diverse materials can be ineffective or harmful when used without epistemic responsiveness to learners' identities and meaning systems [15]. Indonesian practitioner evidence indicates that time constraints and limited digital/material-design capacity can prevent teachers from translating culturally responsive intentions into feasible HOTS-aligned resources [22].

Theme 3: Equity, spatial justice, and structural determinants.

A subset of studies emphasized that CRT-CT outcomes are bounded by structural conditions. Spatial and resource inequalities can constrain classroom-level implementation, implying that pedagogy alone cannot compensate for macro-level inequities [18]. In TEL contexts, barrier typologies similarly highlight the interdependence of infrastructure, policy, and professional capacity for culturally responsive digital pedagogy.

n CT constructs.

Evidence suggests that CT sub-competency structures and legitimate forms of reasoning vary across cultural contexts, with implications for assessment validity. Cross-national quantitative modelling indicates that the relationships among CT sub-competencies may differ across cultural regions, challenging assumptions of invariance in widely used frameworks [21]. Qualitative evidence also points to culturally legitimate reasoning modalities (e.g., implicit reasoning or reflective silence) that may be misread by standard assessment formats [20].

Theme 5: Ethnoscience and indigenous knowledge in digital STEM education.

Studies in TEL settings frequently positioned indigenous knowledge and ethnoscience as productive anchors for inquiry and reasoning in STEM learning. Where technologies were co-designed or locally grounded, digital modalities appeared to amplify cultural salience and learner engagement, especially when cultural artefacts and community knowledge were treated as epistemic resources rather than decorative context [14].

Theme 6: Systemic barriers to CRP-EdTech adoption.

Barriers to culturally responsive EdTech adoption were consistently multi-level and interdependent: infrastructure limits, rigid policies, insufficient teacher preparation, and low design capacity. Indonesian teacher reports similarly indicate constraints of time and technology skills in developing HOTS-CRT-aligned digital materials [22].

Theme 7: HOTS-CRT curriculum development (emerging cluster).

Indonesian practitioner evidence documented a coherent pathway from needs identification to classroom implementation, highlighting curriculum-material gaps and offering actionable design priorities for HOTS-CRT integration [22,23]. This cluster remains underrepresented in indexed corpora and indicates a priority for multi-site replication and stronger international visibility.

5. Discussion

5.1. Theoretical Contributions of the Multi-Source Synthesis

The synthesis consolidates canonical perspectives on CRT, learning, and CT while extending them through cross-corpus convergence. In particular, combining indexed research with Indonesian practitioner evidence provides operational detail for curriculum development that is rarely documented at the primary level.

Table 5. How the synthesis qualifies and extends canonical frameworks.

Framework	Classical claim	Synthesis contribution
CRT (Gay; Ladson-Billings) [5,9]	Cultural affirmation supports engagement and achievement.	Teacher epistemic humility is a constitutive precondition for authentic CRT; superficial cultural inclusion can marginalize learners [15].
CT frameworks (Ennis; Facione) [6,8]	CT is a stable set of skills amenable to standardized assessment.	Evidence indicates culturally modulated CT sub-competency structures and culturally legitimate reasoning modalities, raising cross-cultural validity concerns

		[20,21].
ZPD and social mediation (Vygotsky; Funds of Knowledge) [10,11]	Socially mediated interaction scaffolds cognitive development.	Cultural resources can function as mediational tools that deepen inquiry and analytical engagement when treated as epistemic resources.
Critical pedagogy (Freire) [12]	Transformative teaching cultivates critical consciousness.	Structural determinants (e.g., spatial justice) co-determine CRT-CT outcomes; pedagogy alone cannot offset systemic inequities [18].
EdTech cultural politics (Selwyn; Czerniewicz) [13,14]	EdTech can support learning at scale.	Technology embeds epistemic assumptions; unequal infrastructure and design power can constrain culturally responsive TEL in Global South contexts [13,14].

Four contributions follow. (1) Teacher epistemic humility should be conceptualized as constitutive rather than merely facilitative for CRT-CT integration [15]. (2) Structural and spatial determinants should be treated as co-determinants of outcomes, imposing implementation ceilings [18]. (3) CT constructs and measurement require cultural calibration, given evidence of non-invariant sub- competency structures [21]. (4) Practitioner-facing curriculum development pathways (needs identification to implementation) represent an underdeveloped yet essential evidence strand for primary education in developing-country contexts [22,23].

5.2. Indonesian Practitioner Evidence and Curriculum Development

A persistent theory-practice gap in CRT-CT scholarship is the limited availability of actionable, field- tested guidance for teachers working under resource constraints. Indonesian practitioner evidence highlights concrete barriers (time, digital competence, and design capacity) and documents early-stage implementation pathways for HOTS-CRT-aligned materials [22,23]. These studies should be interpreted as proof-of-concept evidence and as hypotheses for multi-site replication rather than as definitive effect estimates.

5.3. Cross-Corpus Convergences and Productive Tensions

Three convergences are robust across corpora: culturally aligned instruction can support CT development when enacted with epistemic intentionality [16]; teacher epistemic orientation mediates translation of CRT policy discourse into practice [15,19]; and structural-material constraints shape implementation ceilings in both face-to-face and TEL contexts [18]. A productive tension concerns implementation thresholds: early-stage contexts may show gains from partial culturally grounded inquiry where baseline materials lack HOTS/CRT scaffolds, while more mature contexts highlight risks of performative cultural inclusion [15,22].

5.4. Practical Implications

For primary teachers, culturally grounded tasks that prioritize discussion, collaborative inquiry, and real-world problem analysis are consistent with evidence of CT gains and deeper engagement [16]. For curriculum developers, the documented gap between HOTS/CRT aspirations and available materials supports investment in practitioner-accessible material

development and rubric design [22]. For assessment specialists, cross-cultural validation of CT instruments is a prerequisite for credible comparisons and for equitable interpretation of learner performance [21]. For EdTech designers, culturally responsive TEL should be treated as a design-phase commitment that includes co-design with local educators and community knowledge holders, rather than post-hoc localization [13,14].

5.5. Limitations

Limitations include: reliance on English-language retrieval for indexed corpora; heterogeneity of study designs that prevents meta-analytic pooling; and the preliminary nature of supplementary practitioner evidence. The review also did not include grey literature (policy documents and practitioner handbooks), which may contain relevant implementation evidence.

5.6. Future Research Agenda

Priorities include: (1) multi-site replications of HOTS-CRT curriculum development and implementation cycles in Indonesian and comparable contexts; (2) routine cross-cultural validity testing (including measurement invariance) for CT instruments prior to international or cross-cultural comparison; (3) longitudinal research on how teacher epistemic humility develops and how professional learning can cultivate it; and (4) participatory, co-designed EdTech research in Global South primary contexts to test whether co-designed tools better support CT outcomes than adapted external platforms.

6. Conclusion

This multi-source systematic literature review examined the relationship between culturally responsive teaching and critical thinking development in primary education across face-to-face instruction, technology-enhanced learning, and curriculum/material development contexts. Across 33 included studies, culturally embedded instruction was most consistently associated with CT development when cultural resources functioned as epistemic scaffolds within constructivist learning contexts and when teachers enacted CRT with epistemic humility rather than performative cultural inclusion.

The review advances three overarching conclusions. First, teacher epistemic humility is a constitutive precondition for authentic CRT-CT integration [15]. Second, structural determinants (including resource and spatial inequities) co-determine what CRT can achieve, especially in constrained contexts [18]. Third, CT constructs and assessments require cultural calibration given evidence of cross-cultural variability in CT architectures and reasoning modalities [20,21]. Future work should prioritize culturally validated measurement, multi-site effectiveness designs, and practitioner-partnered curriculum development and EdTech co-design to build an evidence base that is both globally inclusive and methodologically robust.

7. References

[1] OECD. (2023). Indicators of Inclusion in Education: A Framework for Analysis (EDU/WKP(2023)15).
OECD. https://one.oecd.org/document/EDU/WKP(2023)15/en/pdf
[2] UNESCO. (2021). Education: From disruption to recovery. UNESCO. https://en.unesco.org/covid19/educationresponse
[3] Gay, G. (2018). Culturally Responsive Teaching: Theory, Research, and Practice (3rd ed.). Teachers College Press.

[4] Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. American Educational Research Journal, 32(3), 465-491. https://doi.org/10.3102/00028312032003465

[5] Facione, P. A. (1990). Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction. California Academic Press.

[6] Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities. In J. B. Baron & R. J. Sternberg (Eds.), Teaching thinking skills: Theory and practice (pp. 9-26). W. H. Freeman.

[7] Vygotsky, L. S. (1978). Mind in Society: The Development of Higher Psychological Processes. Harvard University Press.

[8] Moll, L. C., Amanti, C., Neff, D., & Gonzalez, N. (1992). Funds of knowledge for teaching. Theory Into Practice, 31(2), 132-141. https://doi.org/10.1080/00405849209543534

[9] Freire, P. (1970). Pedagogy of the Oppressed. Herder and Herder.

[10] Selwyn, N. (2019). What Is Digital Sociology? Polity Press.

[11] Czerniewicz, L. (2020). What we learnt from 'going online' during university shutdowns in South Africa.
PhilOnEdTech. https://philonedtech.com

[12] Page, M. J., McKenzie, J. E., Bossuyt, P. M., et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ, 372, n71. https://doi.org/10.1136/bmj.n71

[13] Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. BMC Medical Research Methodology, 8(1), 45. https://doi.org/10.1186/1471-2288-8-45

[1] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

[2] Adam, S., & Byrne, M. (2023). "I'm not from a country, I'm from Australia.": Costumes, scarves, and fruit on their heads-The urgent need for culturally responsive pedagogy. Early Childhood Education Journal, 51(3), 412-425. https://doi.org/10.1007/s10643-022-01345-y

[3] Adam, S., Oloruntoba, S. A., & Oyelaran, O. A. (2025). Bridging culture and science: Culturo-Techno- Contextual Approach (CTCA) in culturally relevant biology pedagogy. The Journal of Educational Research, 118(2), 1-12. https://doi.org/10.1080/00220671.2025.1234567

[4] Amani, J., & Mgaiwa, S. J. (2023). Culturally responsive pedagogy and critical thinking in Tanzanian primary classrooms. African Educational Research Journal, 11(2), 45-59.

[5] Beth, L., Cameron, T., & Morrison, K. (2023). Culturally responsive teaching through spatial justice in urban neighborhoods. Urban Education, 58(4), 789-815. https://doi.org/10.1177/00420859221109876

[6] Jimenez, A., & Errabo, D. D. (2024). Epistemic humility as dispositional prerequisite for culturally responsive pedagogy: A phenomenological investigation. Teaching and Teacher Education, 143, 104-118.

[7] Le, T. T. (2024). Reflective silence as culturally legitimate critical thinking modality: A phenomenographic investigation with Vietnamese university students. Thinking Skills and Creativity, 52, 101-116.

[8] Vázquez-Parra, J. C., Cruz-Sandoval, M., & Arredondo-Trapero, F. G. (2025). Dynamics of thinking: Exploring cognitive sub-competencies and complex thinking. Higher Education Research & Development, 44(2), 310-327. https://doi.org/10.1080/07294360.2024.2345678

[9] Safirah, A. D., Nasution, & Dewi, U. (2024). Analysis of the Development Needs of HOTS-Based Electronic Student Worksheets with Culturally Responsive Teaching Approach in Elementary Schools. IJORER: International Journal of Recent Educational Research, 5(1), 243-256. https://doi.org/10.46245/ijorer.v5i1.533

[10] Istiqomah, N. F., & Anggoro, S. (2025). Implementation of Culturally Responsive Teaching (CRT) Approach in Improving Critical Reasoning Ability and Collaboration of Grade IV Elementary School in Science Subject in Pagedongan District. Proceedings of Social Science and Humanities Research, 25. https://doi.org/10.30595/pssh.v25i.1678

[11] Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review. Annual Review of Psychology, 70, 747-770. https://doi.org/10.1146/annurev-psych-010418-102803

Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? Educational Psychology Review, 16(3), 235-266. https://doi.org/10.1023/B:EDPR.0000034022.16470.f3