



Critical Digital Reading and Online Information Evaluation: A Systematic Review and Proposed BACA-KRITIS Framework

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ABSTRACT

University students must understand digital texts while evaluating the credibility of online sources, yet reading comprehension and information evaluation are often treated as separate instructional priorities; this systematic literature review examined their relationship and developed an instructional framework to integrate comprehension, verification, and reflection. A bounded Google Scholar search completed on 9 October 2026 identified 30 candidate records, supplemented by three candidates from citation checking; two reviewers independently assessed eligibility and checked extracted evidence, while an adapted PRISMA 2020 diagram documented selection and narrative synthesis compared six empirical studies from the United States and Indonesia. Findings revealed difficulties evaluating source identity, supporting evidence, and bias, while explicit lateral-reading instruction was associated with improvements in observed information-evaluation performance; in one study, evaluation scores increased from 3.95 to 7.08 out of 13, although comprehension gains and credibility judgments remained distinct outcomes requiring separate assessment. Heterogeneous designs and measures, nonrandom comparisons, absent control groups in some studies, institutional confounding, ten unavailable full texts, and qualitative appraisal without a validated risk-of-bias instrument constrained causal interpretation and the completeness of the evidence base, preventing a pooled effect estimate or claims of general instructional effectiveness. The proposed ten-stage BACA-KRITIS framework connects initial reading, source analysis, comparison, argument analysis, evidence checking, reflection, interpretation, conclusion, implications, and academic response; it provides an evidence-informed sequence for classroom design rather than a validated intervention, requiring controlled classroom evaluation with attention to implementation fidelity, assessment validation, and tests of retention and transfer across disciplines and student groups before broader educational adoption.

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INTRODUCTION

Reading supports knowledge construction by enabling learners to connect new information with existing understanding and interpret relationships within a text. In higher education, students encounter textbooks, journal articles, research reports, and digital sources that differ in purpose and disciplinary conventions. MacMillan (2014) examined students' connections with academic texts, while Baker et al. (2019) positioned academic reading within social practices that have implications for participation and equity. Clinton-Lisell et al. (2022) also identified a positive association between reading-comprehension assessment performance and college achievement. These perspectives establish reading as an academic practice whose demands extend beyond locating information.

Digital environments expand the range of decisions involved in reading. Hyperlinks, images, videos, comments, and connected documents allow readers to move between sources rather than follow a single predetermined sequence. The Organisation for Economic Co-operation and Development (OECD, 2019) conceptualizes reading literacy through understanding, using, evaluating, reflecting on, and engaging with texts. Within this perspective, readers must consider whether a source is relevant, how its claims are supported, and how its information relates to other accounts. Reading instruction therefore needs to address the judgments students make when navigating and integrating digital information.

Indonesia's reading-literacy context provides a reason to examine how these judgments can be developed. The PISA 2022 country note reported that approximately 25% of Indonesian students attained Level 2 or higher in reading, compared with an OECD average of 74%, and that almost no Indonesian students reached Level 5 or higher (OECD, 2023). These results concern 15-year-old students and do not directly measure university students' reading competence. They nevertheless identify a broader educational challenge that may inform attention to the transition into higher education. Any claim about university students' proficiency must be supported by evidence collected from that population.

Critical digital literacy involves evaluating information alongside the practical skills needed to access and use digital technologies. Ilomäki et al. (2023) mapped multiple dimensions of critical digital literacies in school education, including information literacy, media literacy, participation, and digital safety. Because that review addresses school contexts, its findings provide conceptual background rather than direct evidence of university learning outcomes. For university students, academic reading also depends on disciplinary expectations and the social conditions of participation identified by Baker et al. (2019). Connecting these perspectives requires an explicit account of how students judge information within particular academic tasks.

The relationship between digital reading and comprehension cannot be inferred from the presence of technology alone. Delgado et al. (2018) synthesized differences between reading media, while de-la-Peña et al. (2024) examined digital and print resources specifically in relation to college students' reading comprehension. The latter review did not establish an average positive comprehension effect from technology, which cautions against equating digital provision with learning improvement. Yasinta et al. (2026) reported a small, not fully linear association between the breadth of social media platform use and inferential reading comprehension among university students. These findings support examining the quality of reading activities and the evidence used to evaluate their outcomes.

This review examines how critical reading may contribute to university students' evaluation of digital information and develops an evidence-informed BACA-KRITIS instructional framework. Three review questions guided the synthesis: what difficulties students experience when assessing online sources, which instructional approaches are associated with improved evaluation performance, and how digital reading comprehension relates to these judgments. Empirical findings were drawn from studies selected through Google Scholar and supplementary citation searching, while other publications provided relevant conceptual background. The synthesis distinguishes measured outcomes from the activities proposed in the framework. Consequently, BACA-KRITIS is presented as an instructional proposal rather than a validated intervention.

METHOD

Review Design

A systematic literature review was undertaken to synthesize empirical research on digital reading and online information evaluation among university students. Narrative comparison and conceptual integration were used rather than statistical meta-analysis because the studies differed in research designs, constructs, instructional approaches, and assessment outcomes. Identification, screening, eligibility assessment, and reporting followed PRISMA 2020 principles (Page et al., 2021), with an adapted flow diagram describing the bounded set of identified records.

Inclusion and exclusion criteria were established for study selection. No review protocol was registered.

Two reviewers independently assessed titles and abstracts against the eligibility criteria and subsequently examined the full texts of potentially relevant reports. Both reviewers checked the extracted study characteristics, observed outcomes, and design-related limitations against accessible primary reports. Differences in eligibility or interpretation were addressed through discussion and consensus before the final synthesis. Records of candidate-level decisions, reasons for exclusion, and extraction outcomes were maintained in the Search and Evidence Record. No inter-rater agreement statistic is reported.

The review process included documented identification, duplicate checking, title and abstract screening, full-text assessment, and study-level extraction. The accompanying Search and Evidence Record is intended to retain the search expressions, candidate decisions, retrieval status, evidence fields, and synthesis categories. Methodological appraisal was qualitative and design focused rather than a standardized risk-of-bias or certainty-of-evidence assessment. Findings were compared according to their measured constructs, study designs, populations, and limitations. The framework synthesis distinguishes directly supported instructional practices from additional conceptual and pedagogical proposals.

Information Sources and Search Strategy

Google Scholar served as the principal academic search platform, with the documented search dated 9 October 2026. Three search expressions targeted lateral reading and source credibility, digital reading comprehension across multiple documents, and critical digital literacy in higher education (Table 1). The search record identified 30 candidate result items within the reviewed search set, a number that should not be interpreted as the total number of publications indexed by Google Scholar. Publication dates from 2010 through 9 October 2026, original peer-reviewed empirical research, university-student participation, and accessible English-language full texts were applied as eligibility criteria. The search strategy was bounded in scope rather than an exhaustive search of all academic indexes.

Supplementary citation tracking and targeted reference checking identified three additional candidates: Hargittai et al. (2010), Brodsky et al. (2021a), and Brodsky et al. (2023). These candidates were assessed separately from the Google Scholar identification route and merged into the screening account after duplicate checking. Brodsky et al. (2023) concerned school-age Canadian learners and was excluded because it did not meet the university-population criterion. Publisher pages and available journal PDFs were examined to confirm study eligibility and extract reported evidence; alternative links to the same report were not counted as separate studies. The exact search queries and source-specific decisions are reported in the accompanying Search and Evidence Record.

Table 1. Google Scholar search strategy and eligibility procedures

Element	Documented procedure
Search source and date	Google Scholar; 9 October 2026; 30 screened candidate records
Query 1	college university students lateral reading source credibility evaluation intervention
Query 2	university students digital online reading comprehension multiple documents evaluation empirical study
Query 3	critical digital literacy university EFL students online source evaluation
Publication limits	2010 through 9 October 2026; assessed during eligibility screening
Population and focus	University or college students; digital reading comprehension, source or claim evaluation

Element	Documented procedure
Report eligibility	Original peer-reviewed empirical report with accessible English full text
Supplementary search	Citation and related-report checking; three additional candidates
Screening and appraisal	Two independent reviewers; consensus resolution; qualitative design appraisal

Eligibility and Selection

Eligible reports were original peer-reviewed empirical studies published between 2010 and 9 October 2026 that involved university or college students and measured digital reading comprehension, source credibility, or evaluation of online information and claims. Studies were excluded if they were reviews, conceptual articles, nonempirical course descriptions, school-only investigations, general adult samples without eligible university participants, or reports focused solely on digital engagement. Accessible English-language full text was required to verify the study design, participants, assessment procedures, and relevant outcomes. Records with uncertain abstracts were retained for retrieval instead of being excluded solely because of insufficient descriptive information. Reports that could not be obtained were recorded as not retrieved, rather than categorized as methodologically weak.

Google Scholar yielded 30 candidate records, including one duplicate representation of the same report, leaving 29 unique records for title and abstract screening. Fourteen of those records were excluded at screening and 15 reports were sought for full-text retrieval; ten were unavailable, while five underwent eligibility assessment and four were included after excluding one general-adult study. The supplementary route identified three candidates, of which one school-only report was excluded at screening and two reports were retrieved and included. Across both routes, the selection account comprises 33 identified candidates, one duplicate removed, 32 screened records, 15 screening exclusions, 17 reports sought, ten unretrieved reports, seven full texts assessed, one full-text exclusion, and six included studies. Figure 1 presents these reconciled counts in an adapted PRISMA 2020 flow diagram.

Extraction and Qualitative Appraisal

For each included study, the two reviewers checked bibliographic identity, university population, sample size, setting, design, instructional activity or phenomenon, assessment measures, main findings, and interpretation limits. Extraction distinguished observed performance from confidence or self-report outcomes, and numerical findings were retained only where supported by the available source texts. Brodsky et al. (2021a) and Brodsky et al. (2021b) involved distinct cohorts and were retained as separate reports without pooling their participants. Qualitative appraisal considered comparison conditions, allocation, confounding, representativeness, measurement relevance, and evidence of retention or transfer. No validated risk-of-bias instrument or formal certainty rating was applied.

Synthesis and Framework Development

Extracted findings were assigned to three analytic categories: source evaluation difficulties, instructional responses, and digital reading comprehension. Hargittai et al. (2010) and Silvhiany et al. (2021) informed the first category; Breakstone et al. (2021) and both Brodsky studies informed the second; Anggia and Habók (2025) informed the third. The COVID-19 study also informed the connection between comprehension and evaluation, allowing a report to contribute to more than one category. Comparison emphasized what was measured, the direction of reported findings, and the limits of the research design, without calculating theme prevalence or a pooled effect. These categories were then connected to the five critical-reading components and ten BACA-KRITIS stages retained from the conceptual framework.

BACA-KRITIS is an evidence-informed pedagogical interpretation rather than an intervention evaluated in this review. The included lateral-reading studies support aspects of

source investigation and corroboration, but none tests the full ten-stage sequence or its ordering. Reading-comprehension research and conceptual background sources support other elements without establishing the effectiveness of the integrated framework. No new participant outcomes, psychometric validation, or effect estimate for BACA-KRITIS was generated. Feasibility, reliability of assessment, retention, and transfer must be tested in subsequent classroom research.

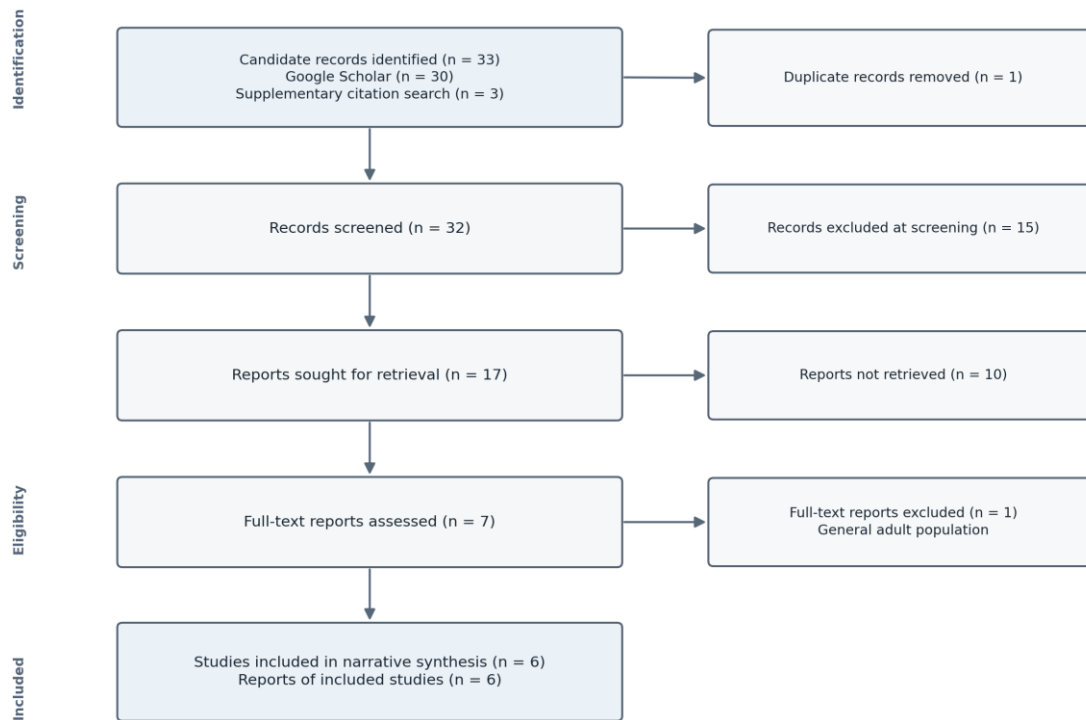


Figure 1. Adapted PRISMA 2020 flow diagram for Google Scholar searching

RESULTS AND DISCUSSION

Study Selection and Evidence Characteristics

Six empirical studies met the inclusion criteria: four identified through Google Scholar and two through supplementary citation and reference searching. Two reports examined existing source-evaluation practices, three investigated lateral-reading instruction, and one examined online extensive reading and comprehension. The studies involved university students in the United States and Indonesia and varied in participant characteristics, measures, comparison conditions, and instructional contexts. Table 2 summarizes the empirical evidence and key design limitations. Ten reports sought for retrieval could not be accessed and were therefore not included in the synthesis.

Table 2. Included empirical studies and interpretive limits

Study and setting	Design and sample	Verified finding	Main limit
Hargittai et al. (2010) United States	Survey n = 1,060; observed/interviewed subgroup n = 102	Search context, brands, and routines shaped credibility judgments	Single-campus observational evidence; no instructional effect

Study and setting	Design and sample	Verified finding	Main limit
Silvhiany et al. (2021) Indonesia	Case study; n = 152 EFL pre-service teachers; six credibility tasks	Difficulties examining source identity, evidence, and bias	One teacher-preparation setting; task-specific performance
Breakstone et al. (2021) United States	Single-group pretest/posttest; n = 87; four online modules	Evaluation mean 3.95 to 7.08/13; lateral reading 3 to 67 students	No untreated control; durability unestablished
Brodsky et al. (2021b) United States	Matched course sections; instruction n = 136; control n = 94	Instruction group more likely to check laterally and judge accurately	Nonrandom section comparison; classroom factors
Brodsky et al. (2021a) United States	Separate online civics cohort; n = 221; pretest/posttest	Lateral reading increased; comprehension and completed assignments predicted use	No untreated control; prediction is not causation
Anggia and Habók (2025) Indonesia	Two online groups n = 120 and 130; control n = 100	Comprehension favored online groups; partial eta squared = 0.038	University confounded with condition; credibility not tested

Difficulties in Evaluating Online Sources

Hargittai et al. (2010) combined a survey of 1,060 first-year students with observations and interviews involving 102 participants. Their findings connect credibility judgments with search context, familiar brands, and routines, rather than source features alone. Silvhiany et al. (2021) assessed 152 Indonesian EFL pre-service teachers through six online credibility tasks and found difficulties examining authors, sources, and supporting evidence. Across these two reports, familiar presentation and easy access did not ensure critical verification. Source evaluation therefore needs to be observed through students' reasoning and checking actions rather than inferred from digital participation.

Instruction and Observed Evaluation Performance

Breakstone et al. (2021) embedded four one-hour modules in an asynchronous college nutrition course involving 87 students. Mean source-evaluation scores rose from 3.95 to 7.08 out of 13, and lateral reading increased from three students at pretest to 67 at posttest. The absence of an untreated comparison group limits attribution of these gains to the modules alone. The study nevertheless provides direct evidence that the checking behavior can change during subject-based online instruction. Improvement in a course assessment remains different from demonstrated long-term use outside that course.

In a matched-section study, Brodsky et al. (2021b) compared 136 students receiving lateral-reading instruction with 94 students receiving usual civics instruction. The instructed students were more likely to read laterally and reach accurate trustworthiness judgments at posttest, although allocation was not individually randomized and classroom factors remain relevant. Brodsky et al. (2021a) studied a separate cohort of 221 students receiving online instruction and reported increased lateral reading, with baseline comprehension and assignment completion predicting its use. That second study lacked an untreated comparison group, making the associations insufficient to isolate an instructional effect. Together, these reports favor

explicit practice and performance assessment while leaving causality, retention, and transfer qualified.

Digital Reading Comprehension and Evaluation

Anggia and Habók (2025) compared online extensive-reading groups of 120 and 130 students with a control group of 100 students. The online groups outperformed the control group on reading comprehension, with a reported partial eta squared of 0.038. However, the experimental groups came from one university and the control group from another, leaving institution and condition confounded. Their reading test did not directly measure online source credibility evaluation. The finding supports a possible comprehension benefit from the studied program, while providing no test of the complete critical-reading framework.

The comprehension and evaluation results concern related but distinct outcomes. The COVID-19 instruction study links baseline comprehension with subsequent lateral reading, whereas the extensive-reading study assesses understanding through reading-test performance. None of the six reports demonstrates that a general comprehension gain automatically improves credibility judgments. Similarly, more frequent checking cannot be assumed to represent accurate understanding unless the task also measures it. The synthesis therefore identifies a need to assess both what students understand and how they justify trusting a source.

Critical Reading Components and the Proposed Framework

The conceptual synthesis identifies five interrelated components of critical digital reading: comprehension, analysis, source evaluation, evidence evaluation, and reflection. OECD (2019) supports connections among understanding, evaluation, and reflection, while Ilomäki et al. (2023) provides broader conceptual discussion of critical digital literacy. Table 3 describes these components as domains for instructional design rather than validated latent constructs. Their inclusion in BACA-KRITIS represents a theoretically informed integration of empirical findings and conceptual arguments. Separate measurement development would be needed to establish validity and reliability.

Table 3. Conceptual components of critical digital reading

Component	Reading competence
Comprehension	Identify the main idea, explicit information, and supporting information
Analysis	Identify text structure, relationships among ideas, claims, reasons, and arguments
Source evaluation	Assess source credibility, authority, relevance, and purpose
Evidence evaluation	Examine the sufficiency, relevance, consistency, and quality of evidence
Reflection	Compare information with prior knowledge and other sources and revise understanding in response to evidence

The components depend on one another without requiring a rigid sequence in every reading task. Comprehension enables students to identify a claim, analysis clarifies how that claim is constructed, and evaluation examines its source and supporting evidence. Reflection allows readers to revisit earlier interpretations when additional information changes the basis of judgment. Prinz et al. (2020) examined the accuracy of learners' judgments about text comprehension, making the relationship between understanding and self-evaluation relevant to this process. Together, these components describe a cycle of interpretation and revision rather than a single act of accepting information.

The six included studies offer direct evidence most relevant to source investigation, corroboration, and performance on defined digital-reading tasks. Argument analysis, reflection, identifying implications, and constructing academic responses also draw on broader conceptual

literature and pedagogical reasoning. These elements were therefore not interpreted as separately validated stages of the framework. Table 3 is a conceptual classification rather than an empirically tested scale. Future work should examine whether the proposed components function coherently and contribute independently to student learning.

The Proposed BACA-KRITIS Framework

BACA-KRITIS is a proposed ten-stage instructional framework developed through the review's conceptual integration. Its stages connect initial reading with source analysis, comparison, argument analysis, evidence checking, reflection, interpretation, conclusion, implications, and academic response. Table 4 presents the associated instructional activities in English. The contribution lies in organizing established critical-reading and source-verification practices into a transparent classroom sequence rather than presenting the individual strategies as newly discovered. The effectiveness and optimal sequencing of the complete framework remain untested.

Table 4. English descriptions of the ten BACA-KRITIS stages

Stage	Learning activity
Read initial information	Read the initial text or information and identify the main idea and the issue addressed
Analyze the source	Identify the author, publisher or institution, publication date, purpose, and source characteristics
Find comparison sources	Locate relevant sources that can verify or extend the initial information
Analyze the argument	Identify claims, reasons, evidence, assumptions, and possible bias
Confirm the evidence	Check whether claims are consistent with evidence and more authoritative sources
Reflect	Consider how understanding changes after reading and comparing sources
Interpret	Develop an interpretation based on relationships among information, arguments, and evidence
Draw a conclusion	Form a logical conclusion supported by the evidence examined
Identify implications	Identify what the information implies for the issue being investigated
Produce an academic response	Develop a response, argument, or academic product based on the reading and evaluation process

The framework allows students to return to earlier stages when a claim lacks support or a new source changes their interpretation. For example, evidence checking may reveal that several accounts rely on one unverified statement, prompting another search for an independent source. Reflection then records why an interpretation was retained, qualified, or revised. The final response should connect the student's conclusion to the evidence examined. This cyclical use preserves verification as part of reading rather than treating it as a final optional check.

Critical Reading and Digital Information Evaluation

The synthesis suggests that critical digital reading needs to connect text understanding with an examination of who produced the information and what supports its claims. The observational reports show that credibility decisions can be shaped by the route through which a source is encountered, while the intervention reports demonstrate changes in source-checking behavior after explicit practice. This pattern makes source evaluation a teachable reading action rather than an assumed consequence of digital familiarity. It also requires lecturers to distinguish

identifying a weak source from understanding its argument accurately. Teaching and assessment should make both forms of reasoning visible.

Comprehension remains relevant because lateral reading requires students to interpret and integrate material from additional sources. The association reported by Brodsky et al. (2021a) is consistent with that requirement, but it does not establish that comprehension training alone causes better verification. Background meta-analyses by Clinton-Lisell et al. (2022) and de-la-Peña et al. (2024) concern comprehension and achievement or reading medium, rather than a validated measure of every critical-reading component. Their relevance is to the reading foundation and the conditions of interpretation. Instruction still needs separate tasks for source credibility and evidence quality.

Information Triangulation in Classroom Tasks

Information triangulation is proposed as a practical strategy for connecting critical reading with digital information evaluation. In this context, triangulation means tracing a claim to its origin and comparing it with relevant evidence from other sources. The strategy is conceptually consistent with source evaluation and reflection in OECD (2019), but its effectiveness is not tested by the present review. The comparison should consider the independence, quality, and relevance of evidence rather than rely on the number of pages reporting the same claim. Such attention makes verification an exercise in reasoning instead of a search for superficial agreement.

A classroom task may begin with a social media statement about an education policy. Students can identify the claim, locate the original policy document, examine the issuing organization and publication date, and compare the statement with relevant academic commentary. They can then explain which elements are supported, which are interpretations, and which require further evidence. This example illustrates how the proposed framework could be used and is not a result of an intervention conducted in this study. Its value for instruction is that the student's conclusion can be assessed alongside the evidence trail.

Disagreement between sources should be treated as material for analysis rather than resolved automatically by choosing the most familiar source. Students may compare whether sources use the same definitions, time periods, populations, or methods. A more authoritative institution may provide a stronger starting point, but specific claims still require evidence appropriate to the question. Students should also be able to state when the available evidence is insufficient for a firm conclusion. These practices make uncertainty an explicit part of academic reading and response.

Triangulation should include checking whether apparently different sources are independent or merely repeat the same unsupported claim. A source record can require students to identify the original publication, its supporting material, and the relationship between the comparison sources. This teaching proposal follows the synthesis's emphasis on external investigation, but the precise record format has not been evaluated in the included studies. Lecturers can judge the quality of the evidence trail alongside the final answer. Doing so makes a correct answer less dependent on chance agreement with the expected conclusion.

Using BACA-KRITIS in Higher Education

BACA-KRITIS offers an instructional sequence for moving from initial reading to source investigation, corroboration, reflection, and academic response. Its contribution is the organization of these actions for university reading tasks, rather than evidence that the actions are newly discovered. The lateral-reading studies support particular verification practices, while the full ten-stage arrangement remains a conceptual proposal. Students should be permitted to revisit a stage when further evidence changes the question or exposes a mistaken interpretation. The framework's educational value will depend on clear tasks, appropriate evidence standards, and measured outcomes.

Lecturers can use the BACA-KRITIS stages to plan tasks that require visible judgments about sources and arguments. An initial reading can be followed by a source profile, a comparison of claims, an evidence check, and a short response explaining the student's conclusion. Guidance may specify how to recognize authorship, assess the relevance of a publication date, identify

unsupported generalizations, and compare different kinds of evidence. These activities operationalize the conceptual framework without claiming that the sequence has already been validated. Their implementation should be adapted to students' prior knowledge and the demands of the discipline.

Language and academic-writing courses provide potential settings for such activities because students routinely interpret texts and construct arguments. Academic reading is situated within disciplinary practices, making local expectations relevant to task design (Baker et al., 2019; MacMillan, 2014). A policy analysis may prioritize official documents, whereas a research-literature task may require attention to methods, findings, and the conditions of inference. The same stage labels may therefore involve different evidence standards across courses. Instruction needs to make these standards explicit so students can explain why a source is appropriate for the claim being evaluated.

Assessment can distinguish the accuracy of comprehension from the quality of evaluation. A student may correctly identify a main idea while failing to notice that the evidence supports a narrower conclusion than the text asserts. Conversely, identifying a weak source does not demonstrate that the student has understood the argument accurately. The five components in Table 3 suggest possible assessment domains, but no scoring rubric or measurement instrument was validated in this study. Any instrument developed from them will require a clear construct definition and evidence of validity and reliability.

Digital exposure should also be interpreted with care when selecting teaching activities. The contextual study by Yasinta et al. (2026), retained outside the new empirical corpus, reports a small association between social-media platform-use breadth and inferential reading rather than an established instructional effect. Platform access, confidence, and participation are therefore inadequate substitutes for a reading-performance outcome. Lecturers need to decide whether an activity targets comprehension, source checking, argument analysis, or academic response. The assessment should then require observable evidence of that target skill.

Strength of the Evidence and Review Limitations

The stronger instructional evidence in this corpus comes from studies with comparison groups, but design details still constrain causal claims. The matched-section civics study retains possible classroom and allocation effects, while the extensive-reading study confounds university with condition. The other instructional studies describe pretest-to-posttest change without an untreated comparison, and the observational studies do not estimate intervention effects. Findings should therefore be weighed by what each design can establish rather than treated as equivalent demonstrations of effectiveness. The review does not assign a pooled effect or a formal certainty rating.

The review relied on a bounded Google Scholar search and supplementary citation checking rather than comprehensive searches across multiple bibliographic databases. Ten reports sought for full-text retrieval were unavailable, raising the possibility that relevant findings were excluded from the synthesis. The six included studies come from two national settings, and their designs, interventions, and assessment outcomes differ substantially. Although two reviewers performed selection and evidence checks, qualitative design appraisal was not based on a validated risk-of-bias instrument. These conditions limit the comprehensiveness of the review and the strength of conclusions that can be drawn from its synthesis.

The adapted PRISMA diagram documents the selection flow for the reported candidate set but cannot establish that every relevant study was identified. Google Scholar ranking, index coverage, and changing result presentation can restrict search reproducibility, particularly when only a bounded set of records is examined. Some instructional studies lack untreated comparison groups, while other comparisons remain vulnerable to confounding and nonrandom allocation. None of the six studies tested the complete BACA-KRITIS sequence, its timing, or its transfer to unfamiliar tasks. The framework should therefore be treated as an evidence-informed proposal pending classroom evaluation.

Strength of the Evidence and Review Limitations

Future reviews should extend the identification strategy to subject-specific and multidisciplinary databases, such as ERIC, Scopus, or Web of Science, and document query-by-query results. Further attempts to obtain the ten unretrieved reports could reveal evidence currently absent from the synthesis. Design-appropriate critical-appraisal instruments would improve comparisons of study trustworthiness. More extensive searches should also consider research published in languages other than English and additional country contexts. Such extensions would test the stability of the current conceptual findings under broader evidence coverage.

An experimental or quasi-experimental study could compare BACA-KRITIS instruction with a clearly described existing reading approach. Outcomes should distinguish comprehension, argument analysis, source credibility evaluation, evidence evaluation, and the quality of academic responses. Baseline ability, prior digital experience, implementation fidelity, and task difficulty need attention when interpreting differences between groups. Delayed assessment and unfamiliar reading tasks could examine retention and transfer beyond practiced examples. Such research would test the framework's effects rather than infer them from students' participation or satisfaction.

Future studies can also examine whether the framework functions consistently across disciplines, educational levels, and student characteristics. Tasks should retain comparable competency targets while recognizing that credible evidence takes different forms in different fields. Student work, recorded explanations, and interviews may help clarify where readers revise interpretations or encounter difficulties. Instrument development should establish content coverage and the consistency of scoring before stage scores are used to compare groups. These studies would identify which aspects of the framework can be generalized and which require contextual adaptation.

CONCLUSIONS

This systematic literature review of six empirical studies indicates that critical digital reading in higher education requires both text comprehension and evaluation of online sources and evidence. Explicit lateral-reading instruction is associated with better observed evaluation performance in several included settings, although methodological differences constrain broad causal conclusions. The proposed ten-stage BACA-KRITIS framework integrates comprehension, source comparison, evidence checking, argument analysis, and reflection into an instructional sequence whose effectiveness has not yet been established. The bounded Google Scholar search, unavailable full texts, heterogeneous study designs, and qualitative appraisal limit the strength and completeness of the synthesis. Broader literature identification, rigorous methodological appraisal, and controlled classroom evaluations are recommended before claims of general effectiveness can be made.

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AUTHOR CONTRIBUTION STATEMENT

Sri Mulyani: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Visualization, and Writing – original draft. Fitri: Methodology, Investigation, Data curation, Validation, and Writing – review & editing. Iip Istirahayu: Conceptualization, Validation, Supervision, and Writing – review & editing.

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Generative AI tools supported English-language editing, refinement of expression, manuscript organization, and formatting. Literature identification, screening decisions, data

extraction, and research interpretation are attributed to the authors and the two reviewers identified in the review records. The authors are responsible for checking and approving the final manuscript.

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