

A SYSTEMATIC LITERATURE REVIEW OF INQUIRY-BASED APPROACHES IN READING INSTRUCTION IN HIGHER EDUCATION

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ABSTRACT

This study aimed to systematically review previous studies on inquiry-based approaches in reading instruction in higher education, focusing on the implementation of inquiry-based learning, the instructional materials and media utilized, as well as the challenges and research gaps identified in earlier research. This study employed a Systematic Literature Review (SLR) method following the stages of identification, screening, eligibility, and inclusion. A total of 14 journal articles published between 2015 and 2026 were selected and analyzed based on predetermined inclusion and exclusion criteria. The findings revealed that inquiry-based reading instruction was commonly implemented through student-centered and collaborative activities such as Project-Based Learning, WebQuests, social annotation, guided inquiry, and online inquiry tasks. The reviewed studies also demonstrated extensive use of digital technologies and authentic learning materials, including e-books, online texts, learning management systems, and annotation platforms, to support reading comprehension and academic literacy development. However, several challenges were identified, including limited digital literacy, passive learning habits, technological constraints, and difficulties in implementing inquiry-oriented assessment. This study contributes to the field of language and literacy education by providing a comprehensive overview of inquiry-based reading practices and identifying future directions for technology-enhanced reading instruction in higher education.

Keywords: *inquiry-based learning; reading instruction; higher education; academic literacy; systematic literature review*

INTRODUCTION

Reading plays a central role in higher education, as university students are expected to engage with texts in order to understand concepts, interpret ideas, and construct knowledge. (Afdal et al., 2023; Ament et al., 2025; de-la-Peña & Luque-Rojas, 2021). In university contexts, reading is not merely a means of obtaining information, but also an academic practice through which students access disciplinary knowledge, engage with scholarly discourse, and participate more meaningfully in academic life. The importance of reading is closely tied to students' learning and academic success, since much of higher education depends on their ability to work with written texts in thoughtful, sustained, and critically engaged ways. (Malmström & Pecorari, 2026). At the same time,

the literature shows that reading is often experienced as demanding and challenging, particularly when students are required to deal with dense texts, unfamiliar concepts, and high expectations for comprehension and interpretation (Bergman, 2024). These conditions suggest that reading in higher education should be viewed not only as a basic academic requirement but also as an important area for pedagogical attention and instructional improvement.

Given the centrality of reading in university study, reading instruction becomes an essential component of academic learning in higher education. Effective reading instruction supports students in developing strategies to comprehend texts, identify important information, interpret meaning, and engage more purposefully with materials (Pahrizal et al., 2025; Ruscandi, 2023; Taye & Teshome, 2025). In the Indonesian higher-education context, reading instruction has also been designed and examined as a pedagogical means of improving students' reading competence through structured instructional models and strategy-based learning. (Delfi & Yamat, 2017; Sukarno et al., 2024). Moreover, reading instruction in university settings is not limited to basic comprehension, but may also be directed toward the development of higher-order thinking, including interpretation, inference, evaluation, and critical engagement with texts.

Despite its importance, reading instruction in higher education continues to face substantial challenges that affect both teaching practices and students' learning experiences. University students often struggle to comprehend complex texts, especially when they encounter unfamiliar vocabulary, dense concepts, implicit information, and demanding expectations for interpretation and inference. (Anwar & Sailuddin, 2022; Dardjito et al., 2023; Patty et al., 2025). These difficulties are particularly visible in EFL contexts, where reading materials requires not only linguistic knowledge but also strategic and cognitive effort to process text structure, disciplinary discourse, and meaning beyond the surface level (Ferdinandus & Simantuak, 2024). At the pedagogical level, reading instruction may also remain overly teacher-centered, causing students to depend heavily on lecturers' explanations rather than actively interacting with texts and constructing understanding independently. As a result, classroom practices sometimes place greater emphasis on correct answers and final products than on the gradual process through which students' question, interpret, and negotiate meaning from what they read. (Budianto et al., 2025; Mutiara Sari, 2026). Such conditions indicate that the challenges of reading instruction in higher education are not limited to students' comprehension problems alone, but also involve instructional approaches that may not yet fully support active and deeper engagement with texts.

These challenges indicate the need for more active, exploratory, and student-centered approaches in reading instruction in higher education. Such approaches are important because students should not merely receive meaning from lecturers, but should also be encouraged to construct understanding through direct engagement with texts, strategic interaction, and reflective thinking (Par, 2020; Windharyati & Bharati, 2018). In this regard, inquiry-based approaches become relevant, as they position learners as active participants who question, explore, interpret, and build meaning rather than passively absorb information. (Chen et al., 2022). Previous studies have also demonstrated that the implementation of inquiry-based learning in reading classes is successful in improving students' reading comprehension, engagement, and critical thinking skills, showing significantly better outcomes compared to traditional teacher-centered approaches (Al-Khamaiseh, 2023; Alshammari, 2022; Ermawati et al., 2018)



Therefore, inquiry-based approaches offer a meaningful pedagogical direction for addressing the limitations of conventional reading instruction and fostering deeper student engagement with texts.

Inquiry-based approaches position students as active learners who ask questions, explore issues, investigate information, and construct knowledge through engagement with learning tasks (Gholam, 2019; Waked et al., 2024) . Rather than emphasizing the passive reception of content, these approaches foreground thinking processes such as investigation, interpretation, discussion, and reflection as central to learning. In inquiry-based settings, learning is commonly organized around problems, scenarios, or questions that encourage students to examine evidence and develop understanding through structured exploration. (de Jong et al., 2023; Duran & Dökme, 2016; Thomas et al., 2025). This makes inquiry-based approaches particularly relevant to higher education, where students are expected to engage more independently with knowledge and to participate actively in meaning-making rather than rely solely on direct transmission from lecturers. For this reason, inquiry-based approaches are often regarded as consistent with instructional goals in higher education that emphasize student autonomy, critical thinking, and deeper intellectual engagement.

Although inquiry-based learning has been widely discussed in higher education, much of the existing literature still addresses it from a broad pedagogical perspective rather than from the specific standpoint of reading instruction (Pedaste et al., 2015). Previous studies have shown that inquiry-based learning has been implemented across various disciplines and learning contexts, indicating its growing prominence in higher education (Thongkoo et al., 2019). However, this body of research is still largely dominated by domains such as science and general instructional innovation, leaving its application in reading instruction less clearly examined. At the same time, studies related to reading in higher education tend to focus on adjacent areas such as information literacy or digital learning environments rather than on reading instruction as a distinct pedagogical domain (Chandio et al., 2025). This makes the literature on inquiry-based approaches in reading instruction appear fragmented, as relevant studies are dispersed across different themes, course designs, and instructional purposes. The available studies also vary considerably in terms of research design, implementation strategies, and reported outcomes, making it difficult to compare findings in a consistent manner. Some studies emphasize comprehension, while others focus on inquiry processes, critical thinking, or engagement, which further complicates synthesis across studies (Al-Khamaiseh, 2023; Wahab & Terasne, 2020) . As a result, there is still no clear and comprehensive understanding of how inquiry-based approaches are implemented in reading instruction in higher education, what forms they take, and which instructional features are most effective. It also remains unclear what types of outcomes are most frequently reported and what practical challenges tend to emerge in instructional settings. Therefore, a systematic literature review is needed to synthesize the fragmented evidence and provide a clearer understanding of inquiry-based approaches in reading instruction in higher education.

Therefore, this systematic literature review aims to map and analyze existing studies on inquiry-based approaches in reading instruction in higher education. Specifically, the review seeks to identify the types of inquiry-based approaches employed, examine how these approaches are implemented in instructional contexts, and analyze the learning outcomes reported in the literature. In addition, the review investigates the challenges encountered in applying inquiry-based approaches in reading

instruction and highlights the research gaps that remain insufficiently explored. By synthesizing findings across studies, this review is expected to provide a more coherent understanding of current practices and trends in inquiry-based reading instruction. Furthermore, the results of this review may offer conceptual and pedagogical insights that can inform the development of more effective reading instruction in higher education contexts. Such insights are particularly important in supporting the design of instructional approaches that promote active engagement, deeper comprehension, and higher-order thinking in reading. In this way, the review contributes not only to the theoretical understanding of inquiry-based learning but also to its practical application in reading instruction. Finally, the findings of this study are expected to serve as a foundation for future research, particularly in refining instructional models and addressing the limitations identified in the existing literature. (Kitchenham & Charters, 2007; Xiao & Watson, 2019)

METHOD

This research adopts a systematic literature review (SLR) approach to explore and synthesize existing studies on the implementation of inquiry-based approaches in reading instruction within higher education. The SLR methodology is particularly effective for identifying relevant evidence, clarifying key concepts, and pinpointing gaps in research (Ghamrawi et al., 2025). This approach allows for a comprehensive synthesis of studies, theories, and frameworks related to inquiry-based learning (IBL) and its application in reading instruction, particularly in the context of English language teaching (ELT) (Sam, 2024). The review aligns with current trends in educational research, focusing on how inquiry-based learning intersects with critical reading practices in higher education. The study aims to address three primary research questions: (1) How are inquiry-based approaches implemented in reading instruction in higher education? (2) What types of teaching materials, media, and assessments are used in these approaches? (3) What challenges exist in applying inquiry-based approaches to reading instruction, and what gaps in research need further exploration?

This study employs the PRISMA framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) to systematically review the literature on inquiry-based approaches in reading instruction within higher education. PRISMA structures the review process into four phases: identification, screening, eligibility, and inclusion, which enhances transparency and minimizes bias (Page et al., 2021). These phases enable the researcher to assess how inquiry-based methods impact reading outcomes and student engagement in university settings. By following PRISMA, the study ensures a comprehensive and methodical approach to synthesizing existing research. Moreover, PRISMA's structured search process, which includes these four distinct phases, effectively reduces biases and streamlines the synthesis of studies, as emphasized by (Rizal & Nurkhamidah, 2025). In addition, a quality rating process was conducted to evaluate the methodological rigor, relevance, and credibility of the selected studies before the final analysis (Petticrew & Roberts, 2006). This structured approach allows for a clear synthesis of research, providing valuable insights into the application and impact of inquiry-based learning in higher education reading instruction.

Identification



The identification phase began by refining search terms related to inquiry-based learning and reading in higher education. Keywords such as "inquiry-based learning," "reading instruction in higher education," "reading strategies," and "student engagement in reading" were used. Variations and synonyms of these terms were also included to ensure comprehensive coverage. The search was conducted in several academic databases, including Google Scholar, ERIC, and JSTOR, with a focus on studies published between 2015 and 2026 to ensure the inclusion of recent research. A total of 250 studies were collected and proceeded to the screening stage of the systematic literature review.

Screening

In the screening phase, the researcher applied specific inclusion and exclusion criteria to filter the identified articles. Duplicate articles were removed first, followed by screening based on the titles and abstracts of the studies. The inclusion criteria required the studies to focus on inquiry-based learning in reading instruction within higher education settings. In addition, only peer-reviewed articles published between 2015 and 2026 in English were included in the review. Studies that did not focus on reading instruction, were not conducted in higher education contexts, or did not involve inquiry-based approaches were excluded. As a result of the screening process, 199 studies were excluded, leaving 50 articles to proceed to the eligibility stage.

Table 1. The Inclusion Criteria

Criterion		Inclusion
Year of Publication	2015–2026	
Focus	Inquiry-based learning in reading instruction in higher education	
Language	English	
Study Design	Peer-reviewed articles	

Eligibility

The eligibility phase ensured that the selected articles were fully relevant to the research questions. The researcher reviewed the full texts, including the abstracts, methods, results, and discussions of each study. If the titles and abstracts did not provide sufficient information, the methods and findings sections were examined in greater detail to confirm that the studies addressed inquiry-based approaches in reading within higher education settings. This phase involved a more in-depth evaluation of the articles to ensure that only studies specifically related to inquiry-based reading instruction were retained. From the 50 articles remaining after the screening stage, 34 articles were excluded during the eligibility assessment due to insufficient relevance to the focus of the review. As a result, 16 articles were retained for the final stage of the systematic literature review.

Quality Rating

The quality rating phase was conducted to evaluate the methodological rigor, relevance, and credibility of the selected studies. Quality assessment is considered an essential component of a systematic literature review because it helps researchers identify whether the included studies provide reliable and valid evidence for answering the

research questions. Quality rating enables researchers to determine the strengths and weaknesses of individual studies and improve the trustworthiness of the review findings (Petticrew & Roberts, 2006). In this phase, each article was evaluated based on several criteria, including its relevance to inquiry-based approaches in reading instruction, clarity of methodology, and appropriateness of research design. Through this process, 2 articles were excluded because they did not sufficiently meet the established quality and relevance criteria. As a result, 14 articles were retained and included in the final analysis of the study.

Inclusion

In the inclusion stage, only studies that fully met the inclusion criteria were retained for the final analysis. These studies were considered relevant to the research questions and provided sufficient information regarding the implementation of inquiry-based approaches in reading instruction within higher education.

The flow of the PRISMA process is depicted in Figure 1 below.

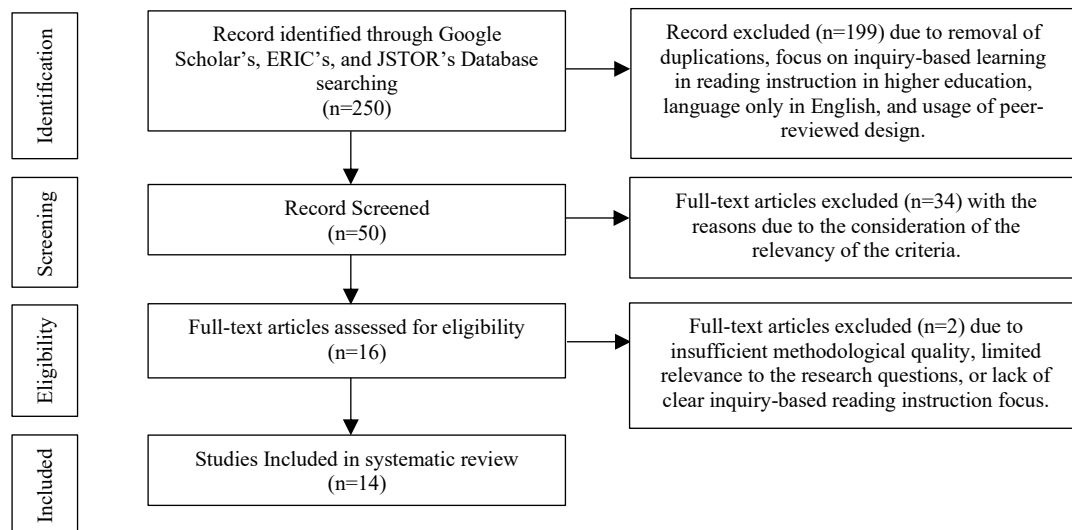


Figure 1. The Flow Diagram of Systematic Review

RESULTS AND DISCUSSION

Results

The selected studies in this systematic literature review were categorized and analyzed based on their relevance to inquiry-based approaches in reading instruction in higher education. The studies focused on the implementation of inquiry-based learning, instructional materials and media, assessment practices, as well as challenges and research gaps in higher education reading contexts. Based on the PRISMA stages of identification, screening, and eligibility, a total of 10 studies were included in the final review. The final selected studies that addressed the research questions are presented in Tables 2 and 3.

Table 2. List of Included Articles

No.	Title	Author(s)	Journal/Publisher
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1.	Impact of Project-Based Learning on Critical Thinking Skills and Language Skills in EFL Context: A Review of Literature	Xinke Song, Abu Bakar Razali, Tajularipin Sulaiman, & Joanna Joseph Jeyaraj (2024)	World Journal of English Language, Vol. 14 No. 5
2.	Assessing University Students' Critical Online Reasoning Ability: A Conceptual and Assessment Framework with Preliminary Evidence	Kirill Molerov, Olga Zlatkin-Troitschanskaia, Manuel Toepper, and colleagues (2020)	Frontiers in Education, Volume 5
3.	Promoting Integration of Multiple Texts: A Review of Instructional Approaches and Practices	Sivan Barzilai, Mirit Hershkovitz, and colleagues (2018)	Educational Psychology Review
4.	Research Trends in the Use of E-books in English as a Foreign Language (EFL) Education from 2011 to 2020: A Bibliometric and Content Analysis	Mei-Rong Alice Chen, Gwo-Jen Hwang, Rwitajit Majumdar, Yuko Toyokawa, & Hiroaki Ogata (2023)	Interactive Learning Environments
5.	Reading and Connecting: Using Social Annotation in Online Classes	Xinran Zhu, Bodong Chen, Rukmini Manasa Avadhanam, Hong Shui, & Raymond Zhuo Zhang (2020)	Information and Learning Sciences
6.	WebQuests as Language-Learning Tools	Selami Aydin (2016)	Computer Assisted Language Learning
7.	Using Literacy to Enact Critical Pedagogy and Scientific Inquiry: An Analytic Literature Review	Anne Daly-Lesch (2019)	Texas Education Review
8.	The Development of the Inquiry Complexity Reading Strategy (ICRS) in Online Academic Reading	Erni, Maslawati Mohamad, Fadly Azhar, & Hasnah Faizah AR (2023)	Theory and Practice in Language Studies
9.	The Effect of Inquiry-Based Learning Strategy on Developing Saudi Students' Meta-Cognitive Reading Comprehension Skills	Reem Fuhaid Alshammari (2022)	English Language Teaching (Canadian Center of Science and Education)
10.	The Implementation of Inquiry-Based Learning to Reading Comprehension of EFL Students	Ermawati, Nasmilah Yunus, Abidin Pammu (2017)	International Journal of Science and Research (IJSR)
11.	The Role of Inquiry Based Learning to Improve Reading Comprehension of EFL Students	Ermawati, Nasmilah Yunus, Abidin Pammu (2018)	ELS Journal on Interdisciplinary Studies in Humanities
12.	Teaching Reading by Using Inquiry Based Learning Approach to the First Semester of English Education Program	Syaprizal (2017)	Journal of Linguistics, English Education and Art (LEEA)
13.	Improving Student Learning Through Inquiry-Based Reading	Lina Katan & Charlotte Andreas Baarts (2023)	Teaching in Higher Education
14.	Integrating inquiry-based learning into the Academic Literacy course to enhance student learning	Nomakhaya Mashiyi (2018)	SOTL in the South

Table 3. Answers of Research Questions Identification

Study No.	RQ1 Implementation	RQ2 Materials/Media/Assessment	RQ3 Challenges & Research Gaps
1.	Project-Based Learning (PBL) was implemented as a student-centered and inquiry-oriented approach in EFL learning through	The studies utilized authentic texts, journal reflections, poster presentations, collaborative projects, social media, learning	Challenges included time management, teamwork difficulties, limited teacher preparation, curriculum

Study No.	RQ1 Implementation	RQ2 Materials/Media/Assessment	RQ3 Challenges & Research Gaps
	critical reading discussions, journal reflections, collaborative projects, presentations, and real-world problem-solving activities. The approach promoted critical thinking, communication, collaboration, and reading comprehension skills among EFL learners.	management systems, and digital platforms as instructional media. Assessment focused on project outcomes, presentations, participation, critical reading performance, and higher-order thinking skills.	integration issues, assessment design difficulties, and technological readiness. Research gaps identified included limited longitudinal studies, lack of diverse educational contexts, insufficient investigation of technology-integrated PBL, and limited exploration of teacher training and support for effective PBL implementation.
2.	Critical Online Reasoning (COR) was implemented through inquiry-based online evaluation tasks that required higher education students to search, evaluate, and synthesize online information critically. Students engaged in web searches, credibility evaluation, evidence-based reasoning, and argumentative writing to solve authentic information problems in online learning environments.	The study utilized authentic online texts, websites, social media posts, YouTube videos, and open web searches as learning materials and media. Assessment was conducted through the Critical Online Reasoning Assessment (CORA), which measured students' abilities in online information acquisition, critical information evaluation, reasoning with evidence, argumentation, and synthesis.	Challenges included difficulties in evaluating online credibility, managing misinformation and biased sources, cultural adaptation of assessment frameworks, and variations in students' search behaviors and critical reasoning abilities. The study also identified research gaps related to cross-cultural validation, longitudinal assessment, domain-specific online reasoning, and inquiry-based learning in open online environments.
3.	Inquiry-oriented reading instruction was implemented through multiple-text integration activities, collaborative discussions, explicit instruction, inquiry tasks, synthesis writing, argumentation tasks, annotation, summarization, modeling, and integration prompts. Students were guided to compare, evaluate, and synthesize information from multiple sources through inquiry-based and discussion-centered learning activities.	The studies utilized multiple text types such as textbook excerpts, websites, news articles, expert essays, historical documents, literary texts, videos, charts, maps, and digital platforms. Instructional media included graphic organizers, concept maps, online tools, video tutorials, annotation guides, and digital databases. Assessment methods involved written essays, synthesis writing, argument tasks, open-ended questions, multiple-choice questions, think-aloud protocols, observations, and oral discourse analysis.	Challenges included students' difficulty integrating multiple texts, evaluating conflicting viewpoints, understanding text structures, managing complex inquiry tasks, and transferring integration skills across disciplines. The review also identified research gaps related to integration instruction in diverse disciplines, digital and social media texts, younger learners, long-term intervention effects, and the need for more research on integration criteria, motivation, and metacognitive support in inquiry-based reading environments.
4.	Inquiry-oriented and collaborative reading activities were implemented through guided learning, project-based learning, self-directed learning, collaborative learning, peer evaluation, annotation-sharing, and inquiry learning using e-books in EFL education. E-books were commonly integrated into reading instruction through shared reading, independent reading, annotation activities, reading guidance systems, and interactive learning environments to support reading comprehension,	The studies utilized e-books, annotatable multimedia e-readers, interactive e-book learning systems, reading guidance systems, dashboards, eye-tracking tools, learning analytics systems, annotation-sharing functions, games, concept maps, and mobile/digital reading platforms as instructional media. Assessment methods included questionnaires, quizzes, observation, video recordings, reading fluency tracking, reading comprehension tests, learning analytics, behavioral	Challenges included limited pedagogical guidance for teachers, students' preference for printed books over e-books in some contexts, insufficient focus on higher-order thinking skills, lack of integration with emerging technologies such as AI and chatbots, and limited implementation in secondary and higher education contexts. The review suggested future research on advanced e-book functions, inquiry-oriented instructional design, learning analytics, teacher training, and



Study No.	RQ1 Implementation	RQ2 Materials/Media/Assessment	RQ3 Challenges & Research Gaps
	engagement, and literacy development.	logs, eye-tracking analysis, and engagement monitoring systems.	technology-supported reading engagement in EFL education.
5.	Social annotation was implemented as an inquiry-based reading strategy through collaborative annotation of digital texts. Students highlighted, questioned, interpreted, and discussed readings while instructors provided prompts, guiding questions, and scaffolding. Activities also included argument construction, reflective discussion, and collaborative knowledge building in synchronous and asynchronous settings.	The studies used annotation platforms such as Diigo, Hypothes.is, Google Docs, HyLighter, and Nota Bene. Materials included academic articles, ESL/EFL reading texts, scientific readings, and web-based resources. Assessment methods involved quizzes, peer feedback, annotation evaluation, learning analytics, reflective discussion, and collaborative tasks such as summarization and mind mapping.	Challenges included low-quality or repetitive annotations, cognitive overload, uneven participation, and difficulties using annotation platforms effectively. The review emphasized the need for better scaffolding, clearer pedagogical design, and improved evaluation methods. Future research was recommended on usability, inclusivity, learning analytics, and the long-term effectiveness of social annotation in different educational contexts.
6.	WebQuests was implemented as inquiry-based learning tools in second and foreign language instruction, including reading activities in higher education contexts. Inquiry-based implementation involved students engaging in authentic problem-solving tasks, collaborative investigations, online information searching, and critical analysis of web-based resources. Learning followed constructivist and task-based approaches, with teachers providing guidance and scaffolding during inquiry tasks.	The studies used WebQuest platforms, online texts, multimedia resources, and teacher-selected websites. Activities included collaborative reading, vocabulary tasks, discussions, and project-based learning. Assessment methods involved rubrics, questionnaires, reflective journals, reading comprehension tests, and analysis of task performance.	Challenges included insufficient comprehensible-input support, limited vocabulary scaffolding, negative learner perceptions toward WebQuest activities, and discomfort with technology integration. The review also highlighted the lack of research on WebQuest use in higher education reading instruction and recommended further studies on language skills, learner differences, and instructional effectiveness.
7.	Inquiry-based reading instruction was implemented through critical literacy and scientific inquiry activities that centered students' interests, sociocultural experiences, and real-world issues. Students engaged in questioning texts, evaluating multiple perspectives, designing investigations, developing evidence-based arguments, and conducting collaborative discussions connected to social, environmental, and scientific issues.	The reviewed studies used informational science texts, case reports, engineering texts, oral histories, classroom discussions, inquiry projects, school gardens, and community-based investigations. Literacy activities included critical reading, reflective writing, collaborative inquiry, text analysis, and discussion-based learning. Assessment methods involved observations, inquiry projects, reflective responses, and analysis of students' participation and argument development.	Challenges included high-stakes testing pressures, curriculum constraints, limited teacher support, and difficulties sustaining student-centered inquiry practices. The review also highlighted limited research on teacher beliefs, multilingual inquiry practices, and inquiry-based action for social change. Future research was recommended on teacher reflection, equity-focused inquiry pedagogy, and students' advocacy beyond classroom settings.
8.	The study implemented the Inquiry Complexity Reading Strategy (ICRS) in online academic reading through five inquiry stages: orientation, conceptualization, investigation, conclusion, and social complexity. Students engaged in questioning, predicting, hypothesizing, exploring hypermedia texts, interpreting information,	The study used hypermedia reading materials, blogs, wikis, social media, Google Docs, read-aloud tools, translation tools, vocabulary and grammar applications, and online discussion platforms. Activities included skimming, scanning, mind mapping, collaborative inquiry, inference-making, and reading projects. Assessment	Challenges included limited teacher technological skills, insufficient interaction in online learning, unclear instructional guidance, limited reading practice time, and conflicts during collaborative interaction. The study also noted that student characteristics did not significantly influence learning achievement. Future

Study No.	RQ1 Implementation	RQ2 Materials/Media/Assessment	RQ3 Challenges & Research Gaps
	developing inferences, collaborative discussion, and reflective activities. Teachers facilitated inquiry through scaffolding, demonstrations, and guided interaction during online and hybrid learning activities.	methods involved pre-tests, post-tests, participation scores, expert validation, observation, peer evaluation, and reflective activities.	improvements focused on clearer instructions, stronger scaffolding, and expanded online interaction support in inquiry-based reading instruction.
9.	Inquiry-based learning was applied to 106 first-year university students using a one-group quasi-experimental design. Instruction targeted guessing, description, analyzing, and identifying the main idea through pre-, while-, and post-reading stages. Students activated prior knowledge, generated questions, analyzed texts, worked in pairs/groups, and reflected on learning, while teachers acted as facilitators.	Materials included three reading passages, inquiry task sheets, prior-knowledge charts, and lesson plans. Learning used pair/group discussion and guided questioning. Assessment employed a reading comprehension pre-test and post-test measuring the four target skills, analyzed statistically with t-tests.	Main challenges were weak higher-order comprehension skills, unsuitable reading strategies, mismatch between texts and learner needs, and poor learning environments. Limitations included one-group design and single-university context. Future research should examine other language skills, earlier levels, technical education, and stronger comparative designs.
10.	Inquiry-based learning was implemented with third-semester EFL students using a quasi-experimental control-group design. Teaching followed the 5E model: Engagement (activating prior knowledge), Exploration (using reading strategies through questions), Explanation (students presenting answers with evidence), Elaboration (answering further text-based questions), and Evaluation (reflecting on text and learning). Students mainly worked collaboratively in groups.	Materials included reading passages, teacher-generated questions, handouts, board notes, sticky notes, and vocabulary reflection tasks. Assessment used IELTS-style reading pre-tests and post-tests, with scores analyzed through SPSS to compare control and experimental groups.	Challenges included limited prior use of inquiry methods in reading classes and passive learning habits. Students needed support to become active, critical readers. The study involved a small sample in one institution. Future research could examine broader contexts, other language skills, long-term effects, and technology-supported inquiry reading instruction.
11.	Inquiry-based learning was implemented with third-semester EFL students using a mixed-method quasi-experimental design. Instruction followed the 5E model: Engagement (activating prior knowledge), Exploration (group text analysis), Explanation (students presenting understanding), Elaboration (answering follow-up questions), and Evaluation (reflection on learning and vocabulary). Students worked collaboratively in pairs/groups.	Materials included IELTS reading passages, teacher questions, worksheets, sticky notes, and reflection boards. Assessment used pre-tests and post-tests, questionnaires, and interviews. Quantitative data were analyzed with SPSS, while student perceptions were gathered qualitatively.	Challenges included low reading interest, limited vocabulary, classroom distractions, and passive learning habits. The study involved a small sample from one institution. Future research should test inquiry-based learning in other English skills, wider contexts, and longer-term implementations.
12.	Inquiry-based learning was implemented with first-semester English education students using a one-group pre-test/post-test design. Instruction activated prior knowledge, organized students into groups, assigned group leaders, guided inquiry into descriptive texts, encouraged questioning, and required students to find answers collaboratively	Materials included descriptive reading texts, books, and multiple-choice comprehension tasks. Learning used small-group discussion and guided questioning. Assessment employed pre-tests and post-tests with 25 multiple-choice items, analyzed using matched t-test statistics.	Main challenges were low motivation, limited vocabulary, weak comprehension, and low interest in previous reading instruction. The study lacked a control group and involved a small single-cohort sample. Future research should compare inquiry models, involve larger samples, and examine long-term effects on reading achievement.



Study No.	RQ1 Implementation	RQ2 Materials/Media/Assessment	RQ3 Challenges & Research Gaps
13.	while the teacher facilitated discussion. Inquiry-based reading was implemented in higher education through an eight-week course where students examined their own reading practices using autoethnographic inquiry. Students engaged in workshops, group discussions, short lectures, guided self-observation, and reflective writing. Reading was reframed as inquiry by encouraging students to connect texts with self-chosen questions, integrate ideas across sources, and use texts to explore broader issues rather than only summarize content.	Materials included academic texts, guided reflection prompts, take-home writing tasks, student papers, and class discussions. Media involved workshop interaction and written narratives. Assessment was qualitative, based on approximately 600 pages of student reflections analyzed thematically with NVivo. Final papers and a full-day conference were also used as learning outputs.	Main challenges were students' dominant text-centred reading habits, focus on memorizing author ideas, and belief that inquiry reading should occur only during exams or advanced study. Students often needed scaffolding to formulate inquiry questions and use texts critically. Future research should design curricular models for inquiry-based reading, examine lecturer support strategies, and test its impact across disciplines and levels.
14.	Guided inquiry-based learning was integrated into an Academic Literacy course for undergraduate teacher trainees. Students worked in groups over three terms to identify education-related issues, formulate research questions, search literature, review sources, design instruments, collect data, and write reports. Teaching combined mini-lectures, scaffolding, collaborative tasks, presentations, and reflective discussion.	Materials included newspaper articles, peer-reviewed journals, library databases, Blackboard LMS resources, worksheets, questionnaires, interview schedules, and research report guidelines. Assessment used continuous coursework, draft resubmissions with formative feedback, presentations, literature reviews, and final reports.	Main challenges were limited class time, heavy workload, weak digital access, group-work problems, low readiness for independent inquiry, and preference for direct instruction. Some students disengaged or resisted the approach. Future research should examine programme-wide models, cross-disciplinary collaboration, blended learning support, and implementation of guided inquiry in other disciplines.

Discussion

This section discusses the findings of the reviewed studies based on the three research questions of the present study.

a.) RQ 1: Implementation of Inquiry-Based Approaches in Reading Instruction

Based on the reviewed studies, inquiry-based approaches in reading instruction were commonly implemented through student-centered and collaborative learning activities. The studies showed that inquiry-oriented instruction encouraged students to actively engage with texts through questioning, investigation, interpretation, reflective discussion, and collaborative problem-solving. Several approaches were identified, including Project-Based Learning (Song et al., 2024), Critical Online Reasoning tasks (Molerov et al., 2020), social annotation activities (Zhu et al., 2020), WebQuests (Aydin, 2016), and Inquiry Complexity Reading Strategy (Erni et al., 2023). These approaches positioned students as active participants in meaning-making processes rather than passive recipients of information.

The findings also demonstrated that inquiry-based reading instruction frequently emphasized higher-order thinking skills such as analysis, synthesis, argumentation, and evaluation. For example, Barzilai et al. (2018) reported that students were guided to compare and synthesize multiple texts through inquiry-oriented tasks and collaborative discussions. Similarly, Daly-Lesch (2019) highlighted that inquiry-based literacy activities encouraged students to connect reading practices with sociocultural issues and critical reflection. In higher education contexts, inquiry-based reading was often

implemented through guided inquiry, collaborative projects, and reflective learning processes that supported academic literacy development (Mashiyyi, 2018).

These findings support constructivist learning theories which emphasize active knowledge construction, collaboration, and learner autonomy in literacy learning environments. Overall, the reviewed studies suggest that inquiry-based approaches contribute positively to reading comprehension, critical thinking, engagement, and academic literacy skills in higher education contexts.

b.) RQ2: Materials, Media, and Assessment Used in Inquiry-Based Reading Instruction

The findings revealed that inquiry-based reading instruction in higher education heavily integrated digital technologies and authentic learning materials. Various instructional media were utilized, including e-books, social annotation platforms, online databases, blogs, wikis, hypermedia texts, learning management systems, and collaborative online tools (Alice Chen et al., 2023; Erni et al., 2023; Zhu et al., 2020). These technologies supported collaborative inquiry, independent investigation, and interactive reading practices.

The reviewed studies also demonstrated the use of diverse instructional materials such as academic articles, websites, scientific texts, descriptive texts, inquiry worksheets, multimedia resources, and authentic online information sources. In many cases, digital platforms enabled students to annotate texts collaboratively, exchange ideas, and engage in reflective discussions. For example, Zhu et al. (2020) found that social annotation platforms promoted collaborative knowledge construction and active engagement with reading materials. Similarly, Aydin (2016) reported that WebQuests facilitated inquiry-based reading through guided online exploration and authentic problem-solving tasks.

Assessment practices in the reviewed studies were generally aligned with inquiry-oriented learning objectives. Rather than relying solely on traditional testing, the studies employed project-based assessments, reflective journals, peer evaluation, presentations, discussion participation, reading comprehension tests, and learning analytics (Alice Chen et al., 2023; Song et al., 2024). Some studies also used qualitative reflections, observations, and thematic analysis to evaluate students' inquiry processes and critical reading development.

The integration of digital media and alternative assessment methods indicates a shift toward more interactive, authentic, and student-centered reading instruction in higher education.

c.) RQ3: Challenges and Research Gaps in Inquiry-Based Reading Instruction

Although inquiry-based reading instruction showed many positive outcomes, the reviewed studies identified several challenges affecting its implementation. One major challenge involved students' limited readiness for inquiry-oriented learning. Many students were accustomed to teacher-centered instruction and experienced difficulties adapting to collaborative inquiry, critical reading, and independent investigation (Ermawati, Yunus, et al., 2017; Syaprizal, 2017). Low reading motivation, limited vocabulary knowledge, passive learning habits, and insufficient higher-order thinking skills were also frequently reported.

Technology-related challenges were another recurring issue. Several studies reported difficulties related to digital literacy, ineffective use of online platforms, cognitive overload, unequal participation in collaborative tasks, and technical limitations (Alice Chen et al., 2023; Zhu et al., 2020). Instructors also faced challenges such as limited pedagogical guidance, insufficient technological competence, time constraints, and difficulties designing inquiry-based assessments (Daly-Lesch, 2019; Mashiyyi, 2018).



The reviewed studies additionally revealed important research gaps. Many studies were conducted within small-scale or single-institution contexts, limiting the generalizability of findings. Longitudinal research examining the long-term effectiveness of inquiry-based reading instruction remains limited. Furthermore, relatively few studies investigated inquiry-based reading across different academic disciplines, multilingual contexts, or fully online learning environments. Emerging technologies such as artificial intelligence, adaptive learning systems, and advanced learning analytics were also underexplored in inquiry-based literacy instruction.

Future research should therefore focus on broader educational contexts, interdisciplinary inquiry-based reading models, teacher professional development, and sustainable technology integration to strengthen inquiry-oriented literacy practices in higher education.

CONCLUSION

This systematic literature review examined inquiry-based approaches in reading instruction in higher education by analyzing selected studies related to implementation, instructional materials and media, assessment practices, challenges, and research gaps. The findings revealed that inquiry-based reading instruction is commonly implemented through student-centered, collaborative, and technology-supported learning activities that encourage students to actively engage with texts through questioning, investigation, discussion, reflection, and problem-solving.

The reviewed studies also showed that various digital technologies and authentic learning materials have been integrated into inquiry-based reading instruction. E-books, social annotation platforms, WebQuests, learning management systems, online texts, and collaborative digital tools were frequently utilized to support reading comprehension, critical thinking, and academic literacy development. In addition, assessment practices increasingly emphasized authentic and process-oriented evaluation, including reflective journals, collaborative projects, presentations, peer evaluation, and inquiry-based reading tasks.

Despite the positive outcomes reported across the studies, several challenges were identified. Students often experienced difficulties adapting to inquiry-oriented learning environments due to limited critical reading skills, low motivation, passive learning habits, and insufficient digital literacy. Teachers also encountered challenges related to technological competence, instructional design, time constraints, and assessment development. Furthermore, several studies highlighted issues involving uneven participation, cognitive overload, and the effective integration of digital tools in inquiry-based reading instruction.

This review also identified important research gaps in the field. Many studies were conducted in limited contexts with small participant groups, while longitudinal and cross-disciplinary investigations remain scarce. Future research is recommended to explore broader higher education settings, investigate the long-term effectiveness of inquiry-based reading instruction, strengthen teacher training and scaffolding strategies, and examine the integration of emerging technologies such as artificial intelligence and learning analytics in inquiry-based literacy practices.

Overall, inquiry-based approaches have significant potential to enhance reading instruction in higher education by promoting active learning, critical engagement, collaboration, and academic literacy development. The findings of this review may

contribute to the development of more interactive, reflective, and technology-enhanced reading instruction practices in higher education contexts.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to all individuals who provided support, guidance, and encouragement throughout the completion of this study. Special appreciation is extended to the lecturer/supervisor for the valuable feedback and academic guidance during the research process. The authors also thank the researchers and scholars whose studies contributed significantly to this systematic literature review. Finally, heartfelt thanks are given to family and friends for their continuous support and motivation.



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