BILINGUAL PUBLISHING GROUP

Forum for Linguistic Studies

https://journals.bilpubgroup.com/index.php/fls

REVIEW

Higher Order and Critical Thinking Skills in Asking Verbal Questions among English as a Foreign Language Teachers: A Systematic Review

Nahed Mohammed AlBadi , ***Nazrul Anuar Nayan*** * , ***Norshariani Abd Rahman***

Institute of Islam Hadhari (HADHARI), Universiti Kebangsaan Malaysia, Bangi 43600, Malaysia

ABSTRACT

In today's educational landscape, developing higher-order thinking skills (HOTS)—such as analysing, evaluating, and creating—has become increasingly important, especially for students preparing to navigate a complex global world. A key component of HOTS is critical thinking (CTS), which enables learners to assess ideas logically, connect concepts, and make sound decisions. In English as a Foreign Language (EFL) classrooms, verbal questioning plays a vital role in encouraging students to articulate their thoughts, reason through problems, and engage in meaningful dialogue. This study presents a systematic review of over one hundred academic sources—including peer-reviewed articles, educational reports, and case studies—exploring how verbal questioning techniques contribute to the development of HOTS and CTS in EFL settings. The findings point to several effective teaching strategies, along with recurring challenges and ways to address them. The review shows that inquiry-based approaches and collaborative learning tasks can significantly enhance learners' abilities to analyse, synthesize, and evaluate information. Active classroom methods like discussions and role-playing not only help students retain content but also apply it in practical ways. However, several barriers hinder the broader adoption of these strategies, including insufficient teacher training, overemphasis on standardized testing, and limited availability of teaching tools and digital resources. To address these obstacles, the paper highlights the need for continuous professional development, curriculum reforms that integrate CTS components, and greater support in terms of instructional materials and technology access. Together, these steps can help create more engaging and intellectually stimulating environments where HOTS and CTS can thrive.

*CORRESPONDING AUTHOR:

Nazrul Anuar Nayan, Institute of Islam Hadhari (HADHARI), Universiti Kebangsaan Malaysia, Bangi 43600, Malaysia; Email: nazrul@ukm.edu.my

ARTICLE INFO

Received: 25 June 2025 | Revised: 17 July 2025 | Accepted: 29 July 2025 | Published Online: 17 September 2025
DOI: https://doi.org/10.30564/fls.v7i9.10709

CITATION

AlBadi, N.M., Nayan, N.A., Abd Rahman, N., 2025. Higher Order and Critical Thinking Skills in Asking Verbal Questions among English as a Foreign Language Teachers: A Systematic Review. Forum for Linguistic Studies. 7(9): 972–984. DOI: https://doi.org/10.30564/fls.v7i9.10709

Keywords: Higher-Order Thinking Skills (HOTS); Critical Thinking Skills (CTS); Verbal Questioning Techniques; English as a Foreign Language (EFL); Classroom Interaction; Inquiry-Based Learning; Collaborative Learning; Teacher Professional Development

1. Introduction

Effective questioning is widely recognised as a foundational strategy that promotes active learning and enhances student engagement across diverse educational contexts. It serves as a dynamic tool to foster interaction, encourage reflection, and assess comprehension levels within the classroom. Questioning stands out as an essential teaching tool that not only encourages interaction but also deepens learning within the classroom. This engagement is critical for developing learners' ability to process and reflect on information actively, rather than passively receiving it. Questioning is broadly acknowledged as a method that stimulates learners' analytical faculties and offers instructors insights into students' comprehension levels. The way teachers frame their questions—ranging from factual inquiries to those seeking opinions—plays a crucial role in keeping students actively engaged[1]. In English language classrooms, questioning by teachers has been shown to promote language production and facilitate dynamic interaction, engaging both convergent and divergent thinking skills[2].

In contexts like Oman, many students begin higher education with noticeable gaps in foundational skills such as English, Mathematics, and Computer Science. These gaps pose significant challenges when it comes to tackling more complex cognitive tasks during language learning[3].

This article aims to highlight how effective questioning can boost higher-order thinking and critical thinking skills (CTS), while also enhancing student engagement. It explores solutions to overcome the barriers that often hinder this process. These challenges reflect broader observations in Omani higher education, where cultural values like collectivism and a desire for harmony can sometimes dampen students' motivation and encourage procrastination, limiting self-directed learning[3].

Through a review of existing literature, this article compares the impact of different questioning techniques, particularly oral versus written questions, and examines their role in fostering deeper understanding through higher-order thinking skills (HOTS) and CTS. This review contributes uniquely by contextualizing HOTS and CTS development within the Middle Eastern EFL setting, particularly in Oman. It identifies localized socio-cultural barriers and provides tailored strategies often overlooked in broader literature. Unlike previous reviews, this study integrates practical frameworks, such as diagnostic readiness assessment models and curriculum redesign strategies, that practitioners can adopt. These original contributions make this study both practically applicable and academically novel.

The structure of the paper is straightforward: it begins by outlining the importance of questioning, followed by a clear statement of objectives and methodology. It then offers an overview of educational frameworks, including Bloom's taxonomy, which remains foundational in understanding cognitive skill development.

Research shows that oral questioning tends to be more effective than written formats in eliciting student responses and nurturing critical thinking[4]. While questions aimed at higher-order thinking encourage deeper comprehension, those focusing on lower-order thinking often limit students to recalling facts[5]. Importantly, the value of questioning extends beyond language learning—it also plays a vital role in early childhood education by supporting cognitive development and is pivotal in second language acquisition[6]. Moreover, especially for learners at beginning levels, progress is closely tied to the presence of timely and effective feedback. Building cognitive skills and fostering an interactive learning environment require teachers to actively employ effective questioning strategies[7]. This approach is particularly necessary to combat student passivity, as seen in some high school classrooms in Indonesia[2].

According to Bloom's taxonomy, cognitive abilities are classified into six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation[8]. Singh and Shaari[9] further group the first three as lower-order thinking skills (LOTS)[8], which build the foundation for the last three levels—higher-order thinking skills (HOTS). These higher levels rely on prior LOTS and deepen the learner's under-

standing of the subject matter. Bloom's taxonomy guides educators in designing teaching strategies that effectively nurture these thinking skills[10]. The revised taxonomy by Wilson[11] expanded on the original, offering a more detailed and comprehensive framework that has proven invaluable for educators[12].

To promote balanced cognitive development, it is crucial that curricula and assessments include all levels of the revised Bloom's taxonomy in an equitable manner[13], as seen in **Figure 1**.

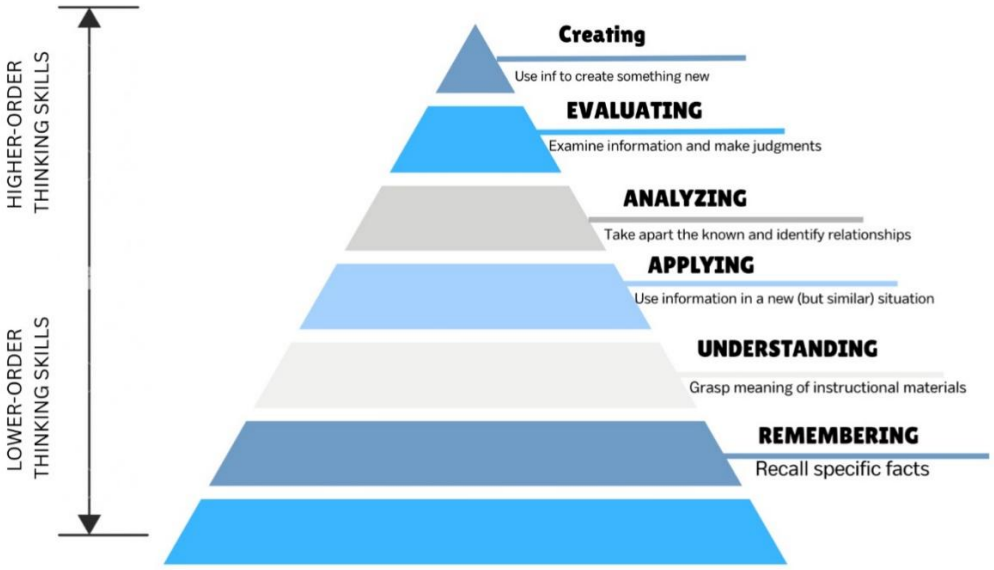

Figure 1. Bloom Taxonomy and the Cognitive Domain.

Higher-order thinking skills (HOTS) are a complex and multifaceted concept, which makes it difficult for scholars and researchers to agree on a single, clear definition. AlMutairi[14] describes higher-order thinking skills as the dynamic cognitive processes that integrate added information with existing knowledge to creatively address complex problems and develop innovative solutions[10]. This conceptualization underscores the importance of teaching methods that encourage students to move beyond rote memorization toward more integrative and applied thinking. This understanding highlights HOTS as a powerful tool that helps learners make sound decisions and tackle problems effectively. Importantly, this definition encourages teachers to integrate higher-order thinking into their lessons—not just for gifted students, but for every learner in the classroom.

Aston expands on this by describing HOTS as the scaffolding of students' thought processes—encouraging them to think deeply both about the questions posed and their own responses[11]. This is a shift away from traditional classroom practices, where students often try to guess what the teacher expects rather than exploring their own creative answers. In this approach, students are given the freedom to reflect thoughtfully on questions and respond in original ways.

Similarly, List and Sun argue that education should go beyond merely filling students' minds with information through memorization and imitation[12]. Instead, learners need to develop a deeper understanding that allows them to apply, evaluate, adapt, and even synthesize skills in diverse contexts.

One of the core components of HOTS is problem-solving—the ability to organize and direct one's thinking towards resolving real-life issues. Debache categorizes problem-solving skills into deductive and inductive reasoning[13], both essential for making sense of various life situations. Problem-solving itself can be divided into creative problem-solving, where students independently devise solutions, and collaborative problem-solving, where individuals work together, sharing ideas and managing interpersonal dynamics to tackle complex challenges[14,15].

However, English as a Foreign Language (EFL) teachers face several challenges in effectively applying HOTS and critical thinking skills (CTS) in their classrooms. Research shows

that these difficulties often stem from a lack of proper training, cultural norms that emphasize conformity over independence, and educational systems that prioritize rote memorization rather than critical analysis—issues particularly evident in Oman's higher education environment [16]. Such factors can discourage teachers from using HOTS and CTS strategies or cause them to apply these methods incorrectly. Beyond instructional techniques, the extent of teacher engagement and institutional support plays a vital role in encouraging educators to embrace innovative teaching approaches. In private higher education institutions in Oman, studies have found that higher levels of employee engagement significantly boost motivation and productivity—key ingredients for successfully implementing advanced teaching methods [17].

Unfortunately, these challenges often lead teachers to rely heavily on traditional, teacher-centred methods focused on memorization, rather than student-centered approaches that foster critical thinking. This reliance on memorization limits students' ability to acquire knowledge meaningfully because they lack the skills to apply HOTS in their learning. Additional obstacles include time constraints, insufficient training, limited knowledge, and scepticism about the effectiveness of HOTS strategies [18]. Teachers may also struggle to assess students' HOTS and CTS without appropriate tools.

Therefore, it is crucial to use established taxonomies, such as Bloom's, to guide the development of students' higher-order thinking skills [19]. Teachers must be equipped with the necessary training to teach HOTS and CTS effectively. Moreover, understanding the individual personality traits of learners can greatly enhance the selection of suitable learning resources and instructional methods. Research suggests that tailoring materials and teaching approaches to students' cognitive and personality profiles can boost engagement, comprehension, and critical thinking skill development [16]. Such personalized strategies support the development of HOTS and CTS by addressing the diverse needs of learners.

Nonetheless, building strong critical thinking skills remains difficult without sufficient knowledge, authentic training, and consistent practice. Both EFL learners and teachers may struggle to meet the foundational requirements of HOTS and to apply these skills effectively in academic and real-life contexts. Mohammed AlKhoudary found that although many EFL teachers support the use of HOTS and CTS, they often overlook proper methods for teaching them. This gap underscores the need to integrate HOTS and CTS explicitly into curricula and to provide teachers with the training necessary to implement these skills successfully.

To overcome these challenges, scholars have recommended a variety of effective HOTS strategies, including active learning, scaffolding, Socratic questioning, and collaborative discussion. With these approaches, teachers and learners can work together to develop higher-order and critical thinking skills more confidently and effectively.

This paper aims to:

1. Highlight the key aspects of HOTS by focusing on the challenges teachers face when implementing these skills.
2. Suggest practical solutions and strategies to overcome obstacles in applying HOTS during teaching and learning.
3. Discuss the importance of HOTS and CTS in enhancing the overall learning process, emphasizing the critical role of these strategies in building the capabilities of both teachers and students.

2. Method

The systematic literature review followed the methodology outlined by Booth and Carroll [20]. The authors carefully designed a process to search, select, and synthesize relevant studies based on predefined criteria. Our review specifically targeted peer-reviewed journals published between 2010 and 2024, emphasizing empirical studies relevant to English as a Foreign Language (EFL) teaching contexts within the Middle East to enhance contextual relevance and applicability.

2.1. Design of the Search Procedure

To retrieve pertinent literature, we conducted comprehensive searches across multiple scholarly databases, including Web of Science, Scopus, and Google Scholar. The search employed a carefully refined combination of keywords and Boolean operators developed through preliminary screening and piloting to optimize relevance and coverage. Keywords included terms related to 'verbal questioning,' 'EFL learners,' 'higher-order thinking skills,' and 'critical thinking skills,' allowing flexibility in fields such as titles, abstracts, and full texts to capture a broad yet focused dataset. We further lim-

ited the selection to peer-reviewed journal articles published in English, removing duplicates and non-relevant records to establish a high-quality corpus for systematic analysis. This approach ensured that the included studies adhered to rigorous academic standards and aligned with our research focus. These platforms were chosen for their strong focus on educational research. The search keywords were developed from database thesauri and key articles, and preliminary searches helped refine the search strategy by testing different keyword combinations in titles, abstracts, and keywords fields.

Preliminary search testing indicated that restricting keyword presence solely to titles or abstracts could exclude significant relevant literature, prompting an expansion to include full-text keyword presence. Therefore, the inclusion criteria were adjusted to allow these terms to appear in the full text instead, broadening the search to capture relevant literature. Finally, broader terms such as "higher-order thinking" and synonyms of CTS were incorporated to ensure comprehensiveness.

2.2. Selection Process

The search results were filtered using logical operators combining keywords related to verbal questioning, EFL learners and teachers, HOTS, CTS, and teaching strategies. The refinement process included limiting the selection to peer-reviewed journal articles with abstracts or metadata written in English. After removing duplicates, 119 unique articles were identified. This curated list served as a proxy for scientific rigor since these journals follow established peer-review standards and maintain consistent publication schedules. The researcher cross-checked this list to ensure no key articles were excluded.

3. Findings and Discussion

The analysis of these 119 peer-reviewed articles focused on the use of HOTS and CTS in English as a Foreign Language (EFL) classrooms. While these findings comprehensively outline the existing landscape, it remains imperative to evaluate how these barriers manifest in specific cultural contexts, such as Oman, where educational traditions and resource constraints uniquely shape teaching practices. Therefore, localized strategies need exploration alongside general recommendations.

All revealed several recurring themes:

- Perceptions and Assessment Challenges**:** Despite widespread recognition of HOTS and CTS as vital skills for 21st-century learners, many educators find assessing them challenging[21]. A common misconception is that HOTS apply mainly to STEM subjects, with less emphasis placed on language education[18,22].
- Implementation Barriers**:** HOTS and CTS development among EFL learners remains limited. Many assessment tools still focus predominantly on lower-order skills, restricting cognitive growth opportunities. Even teachers who understand the value of HOTS/CTS often struggle to implement them effectively[23,24].
- Educator Training and Knowledge Gaps**:** A lack of adequate training and confidence prevents many teachers from designing and delivering lessons centred on HOTS. Time pressures and curricular demands lead many educators to fall back on traditional, rote learning methods[25,26].
- Material and Curriculum Limitations: Many teachers report insufficient integration of HOTS and CTS within coursebooks and curricula. Instructional materials tend to emphasize communicative skills without embedding critical thinking strategies, limiting students' cognitive development[23,24,27]. This issue also reflects broader curriculum design challenges observed in science education reforms, where life skills and HOTS integration remain limited[28].
- Student and Institutional Challenges: Factors such as diverse student backgrounds, large class sizes, poor communication among stakeholders, and minimal use of educational media further obstruct the effective implementation of HOTS[29–31].
- Summary of Structural Barriers: Nold (2017) categorizes major obstacles into four key areas: insufficient teacher training, lack of appropriate materials, entrenched traditional beliefs, and limited time.

3.1. Discussion: Applying HOTS and CTS

Despite consensus on the importance of higher-order thinking skills, many educators face multifaceted challenges that hinder the effective implementation of these strategies. EFL teachers encounter a complex web of barriers when attempting to apply HOTS and CTS in their classrooms.

Limited awareness, lack of professional development, inadequate curricular support, and logistical challenges like classroom size and time constraints all hinder effective integration. Even when teachers recognize the importance of these skills, they often lack the resources and institutional support necessary to implement them meaningfully.

Many educators continue to rely on outdated teaching methods that prioritize content coverage overactive learner engagement. This leaves students with few opportunities to develop essential analytical, evaluative, and creative skills. Teachers also face difficulties tailoring HOTS instruction to accommodate students with varying abilities and language proficiencies. These findings underscore an urgent need for focused teacher training, curriculum reform, and stronger institutional backing to foster HOTS and CTS in EFL contexts.

To address these multifaceted implementation challenges, the literature highlights several strategic interventions. **Table 1** summarises common barriers to HOTS and CTS integration and proposes targeted solutions based on empirical evidence and best practices.

Table 1. Common Challenges and Suggested Solutions for Implementing HOTS and CTS.

Challenge	Suggested Solution
Lack of teacher training	Professional development programs
Rote-based curriculum	Curriculum reform integrating HOTS
Assessment misalignment	Diagnostic tools, alternative assessments
Large class sizes	Smaller groups, peer-facilitated sessions
Limited resources	Use of digital tools and OER
Cultural resistance	Real-life contextual HOTS examples

These summarized insights in **Table 1** offer a practical reference for educators and policymakers seeking to design interventions that support effective questioning and critical thinking development. By aligning classroom strategies with these targeted solutions, stakeholders can promote sustainable pedagogical improvements and better learner outcomes in EFL contexts.

3.2. Strategies for Implementing HOTS and CTS

Numerous studies emphasize the importance of embedding HOTS and CTS within English language teaching, empowering both students and teachers. Critical thinking is increasingly recognised as a key educational goal, especially in regions such as Oman [30]. Effective strategies include:

- Active Learning: Encouraging students to actively engage, interact, and think critically through activities like role-playing, debates, mind mapping, and collaborative group work [32–34]. In the context of Omani EFL classrooms, these strategies can be tailored to accommodate linguistic and cultural considerations, ensuring that learners participate comfortably and effectively.
- Scaffolding: Providing support through teachers, peers, or digital tools to help learners navigate complex tasks, aligned with sociocultural theory and the zone of proximal development [35,36].
- Socratic Questioning: Promoting deep inquiry instead of rote answers to nurture reflective and analytical thinking. Research confirms its effectiveness in improving reasoning skills in EFL classrooms [37–39].
- Collaborative Discussion: Facilitating discussion-based learning to foster peer interaction and cognitive skill development. Structured discussions and jigsaw tasks enable learners to co-construct knowledge and apply critical thinking to diverse contexts [40–42].

Ultimately, successful application of these strategies requires strong institutional commitment to teacher development, availability of resources, and curricula that align with higher-order thinking goals. Teachers need not only theoretical knowledge but also practical tools to confidently implement these approaches.

4. Interaction

Discussion is a powerful strategy that can significantly boost learners' higher-order thinking skills (HOTS). It involves engaging a group of people in meaningful conversations around a particular topic. These interactions might take the form of debates, reasoned arguments, or open-ended

questions, fostering critical engagement. Discussions can happen between teachers and students or among students themselves, encouraging cognitive activities that generate innovative ideas and provide learners with opportunities to express their opinions openly [43].

Research has consistently shown that discussion strategies effectively enhance students' problem-solving abilities and creativity [40]. According to Indriyana and Kuswandono [41], key skills such as creating, evaluating, and analysing are crucial and should be nurtured through group discussions to strengthen HOTS. Blings and Maxey further emphasize that group discussions allow students to exchange ideas, offer constructive feedback to each other, and enable teachers to prompt deeper responses [44].

Typically, discussions are grounded in cooperation and collaboration among participants. Scholars highlight the success of collaborative work in fostering HOTS among English as a Foreign Language (EFL) learners. For example, a study involving 37 accounting students in Indonesia found that combining jigsaw collaboration and problem-based learning models significantly improved their critical thinking skills [42].

Nevertheless, EFL learners often face challenges such as language barriers, personal factors, and differences in academic culture. To overcome these hurdles, learners should be encouraged to actively participate verbally, utilize various learning resources, and maintain positive motivation [45]. Teachers play a vital role in this process by carefully planning discussion sessions and setting clear objectives to maximize their effectiveness [40].

Indriyana and Kuswandono suggest that teachers can guide students through analysing texts and explaining concepts during discussions [41]. Students then collaborate with their peers to work on given tasks, culminating in presentations of their findings. Setianingsih et al. recommend that learners operate within their zone of proximal development [40], with teachers organizing students into diverse groups. In these heterogeneous groups, members support each other's idea development and thinking processes. Finally, teachers encourage each student to summarize and share their insights with the entire class.

These collaborative and well-structured discussion strategies have proven effective in enhancing EFL learners' higher-order and critical thinking skills, ultimately improving their learning outcomes and knowledge acquisition.

4.1. Obstructions Faced by EFL Teachers in Implementing Higher-Order Thinking Skills (HOTS)

1. Limited Knowledge and Awareness**:** Many teachers lack sufficient understanding or awareness of the importance of HOTS, which hinders their ability to effectively incorporate these skills into their teaching [25,26,29].
2. Inappropriate Teaching Methods**:** Some educators continue to use ineffective teaching techniques, especially regarding questioning strategies, which do not promote higher-order thinking [39].
3. Attachment to Traditional Methods: Teachers' preconceptions and comfort with conventional, teacher-centred approaches often prevent them from adopting innovative HOTS-focused strategies [26].
4. Students' Inability to Meet HOTS Requirements: Many students struggle to handle questions that require critical thinking and higher-order skills, posing challenges for both teachers and learners [26].
5. Large Class Sizes: High numbers of students in classrooms make it difficult for teachers to implement HOTS effectively, as individual attention and interaction are limited [23,31].
6. Student Diversity: The heterogeneity of students' backgrounds, skills, and learning paces presents additional challenges in delivering HOTS instruction that meets everyone's needs [25,29].
7. Misconceptions About HOTS: Some students hold incorrect beliefs about the nature and purpose of higher-order thinking, which can negatively affect their engagement and performance [2].

4.2. Possible Solutions Related to Teachers and Their Perspectives in Implementing HOTS

1. Professional Development: Teachers need access to ongoing professional development programs and workshops that build their awareness and deepen their knowledge about higher-order thinking skills [24].
2. Student-Centred Strategies: Employing diverse HOTS teaching methods that focus on student-centred

learning—such as active learning, Socratic questioning, scaffolding, and discussion techniques—can greatly enhance classroom engagement and critical thinking [36,41,46,47].

3. Flexibility and Adaptability: Teachers should cultivate flexibility by embracing current developments and expanding their expertise across various fields to better meet students' learning needs [29].
4. Enhancing Language Skills: Students need opportunities to apply thinking skills in meaningful contexts, supported by scaffolding strategies and real-life problem-solving. Improving second language competencies—listening, speaking, writing, and reading—is essential for effective HOTS application [25,36,48].
5. Manageable Class Sizes: Ensuring a reasonable number of students per classroom is vital to improve teaching effectiveness and allow for more individualized attention [39].
6. Classroom Discussion: Facilitating discussions helps address learner diversity and supports the development of various HOTS approaches by encouraging interaction and collaborative learning [40].
7. Motivation Through Activities: Encouraging motivation in EFL learners can be achieved through engaging group or pair activities, brainstorming sessions, and creative tools like cartoons, which make learning more enjoyable and interactive [46,49].

4.3. Common Obstacles Related to Teaching and Learning Materials in HOTS Implementation

1. Limited HOTS Content in Coursebooks**:** Many coursebooks lack sufficient tasks, instructions, and strategies that promote higher-order thinking skills [23].
2. Lack of Authentic Evaluation: There is often no thorough or authentic evaluation process for English coursebooks, which limits their effectiveness [50].
3. Misalignment Between Coursebooks and Assessments: The teaching materials frequently do not align well with students' tests, causing inconsistencies in learning and evaluation [27].
4. Overly Heavy Coursebooks: Coursebooks can be too dense and difficult for students to navigate effectively [23].
5. Poor Communication: There is often insufficient communication and coordination between teachers, parents, and schools, which affects material use and student support [23].
6. Underutilized Educational Media: Educational media resources play a limited role in supporting HOTS within classrooms [23].
7. Shortage of Learning Materials: Schools and teachers frequently face shortages of adequate teaching and learning materials [25].
8. Overloaded Teaching Schedules: Teachers are often burdened with excessive lessons and extracurricular activities, which leave less time to focus on HOTS instruction [23].

4.4. Effective Solutions for Enhancing Teaching and Learning Materials in HOTS Education

1. Integrate HOTS Activities in Textbooks: Embedding various HOTS tasks and strategies directly into students' textbooks can enhance thinking skill development [25].
2. In-House Coursebook Evaluation: Rather than relying solely on broad ministry-level reviews, schools should involve teachers, curriculum developers, textbook authors, supervisors, parents, and students in evaluating English coursebooks to ensure relevance and effectiveness [24].
3. Teacher Training on Coursebook Evaluation: Providing teachers with workshops and training on how to critically assess and utilize coursebooks, especially regarding HOTS content, empowers them to maximize instructional impact [25,29].
4. Creative Curriculum Design: Curricula should be thoughtfully and creatively designed to better integrate HOTS and meet learners' needs [27].
5. Curriculum Revision: Regular review and updating of national school curricula are essential to ensure alignment with HOTS goals [30].
6. Strengthen School-Parent-Teacher Collaboration: Conducting meetings and seminars involving parents, teachers, and school administrators fosters better communication and support for HOTS initiatives [23].
7. Enhance Role of Educational Media: Educational me-

dia should be actively used to provide sufficient knowledge and resources related to HOTS [23].

8. Provide Diverse Learning Materials and Teacher Training: Schools should supply varied materials that support HOTS implementation and train teachers on effectively using these resources in the classroom [24,25].
9. Reduce Teaching and Extracurricular Load: Decreasing the number of lessons and extracurricular duties assigned to teachers can free up time and energy for focused HOTS instruction [23].

5. Importance of Study

This study is valuable because it sheds light on the challenges that discourage both EFL teachers and learners from effectively using higher-order thinking skills (HOTS) in the classroom. It not only identifies these barriers but also proposes practical strategies to overcome them. The insights gained are expected to contribute to the advancement of English language teaching by offering guidance to curriculum designers and test developers focused on HOTS and critical thinking skills (CTS). By integrating a variety of HOTS and CTS strategies across different language skills, this research aims to support EFL learners in mastering English more effectively and preparing them to meet future academic and professional challenges with confidence.

Moreover, this study benefits educators by increasing their awareness of when and how to equip students with the essential thinking skills and strategies necessary for success. It encourages teachers to incorporate HOTS and CTS not only in language classes but also across other subjects and educational levels. The findings provide valuable support for curriculum planners, test designers, and stakeholders in the Middle East, helping them recognize the obstacles to HOTS integration and appreciate the effectiveness of these methods. Ultimately, this research serves as a strong motivator to embed higher-order and critical thinking activities within curricula and offers practical guidelines to empower teachers in fostering these skills.

6. Challenges

One prominent challenge within EFL education is the insufficient professional development available to instructors for effectively fostering higher-order and critical thinking skills.

Follow up with your own commentary on how this applies in your specific educational setting (e.g., Oman), showing your unique contribution. Professional development programs are needed to provide teachers with the appropriate methodologies for better teaching of these skills. The traditional curriculum often places more emphasis on rote memorization rather than the encouragement of critical thinking and problem-solving. Therefore, revision of the curriculum to encapsulate HOTS and CTS objectives will have a constructive impact on the learning attained by students. Furthermore, standardized testing rewards LOTS, discouraging teachers from adopting HOTS in their classes. To overcome this issue, alternative modes of assessment need to be devised that will sanction and encourage higher-order thinking. Students trained under traditional learning may also object to activities that require critical thinking. Thus, HOTS activities should be introduced gradually to the students by relating them to real life situations to increase their acceptability. Time is also another constraint, where the time given for the teacher may be insufficient to fit in with HOTS during lessons; hence, knowing the shortcuts that will make it easier to use HOTS in lesson preparation without burdening the teacher is essential. Finally, a lack of access to materials and resources might limit the application of HOTS strategies in the classroom. Instead, using online resources and collaborative tools opens more learning opportunities and diverse ways of developing skills.

7. Summary

This systematic review examined the role of verbal questioning in promoting higher-order and critical thinking skills (HOTS and CTS) in EFL contexts. The study highlighted major barriers such as teacher training gaps, outdated curricula, and assessment misalignment. Through synthesizing 119 peer-reviewed articles, four structural challenges were identified—lack of training, poor materials, systemic rigidity, and time constraints. Best practices included scaffolding, Socratic questioning, collaborative learning, and active engagement strategies. The findings emphasize the importance of localized, evidence-based strategies to strengthen HOTS and CTS implementation, particularly in culturally nuanced contexts like Oman. This section lays the ground-

work for proposing actionable recommendations and future research.

8. Conclusions, Recommendations and Practical Implications

The primary aim of this paper was to review higher-order thinking skills (HOTS), critical thinking skills (CTS), and related concepts, focusing on the challenges of implementing HOTS in English as a Foreign Language (EFL) classrooms. It also offers practical suggestions and strategies to help EFL teachers overcome these obstacles and support students in strengthening their HOTS and CTS.

Developing HOTS and CTS in EFL learners should begin early, given their vital role in effective teaching and learning. Introducing HOTS at the foundational levels of English instruction can greatly enhance students' critical thinking abilities as they progress into university studies. However, before integrating HOTS, it is essential to ensure that learners have a solid grasp of basic language skills. To determine this readiness, a practical diagnostic framework is recommended, including placement tests, learner self-assessment sheets, structured classroom observation, brief interviews, and situational role-plays. These tools allow teachers to evaluate foundational skills and tailor HOTS interventions accordingly. Such strategies can be embedded within lesson planning tools or academic advising systems in EFL institutions. Without this foundation, language deficiencies can hinder both teachers' ability to apply HOTS strategies and students' capacity to engage with higher-order thinking tasks effectively.

Equipping teachers with authentic, practical training on how to implement HOTS and CTS in their classrooms is equally important. Moreover, a collaborative approach involving teachers, curriculum developers, textbook authors, supervisors, parents, and even students in textbook evaluation is crucial. Designing EFL curricula that embed diverse HOTS and CTS activities, along with providing clear guidance for teachers, will foster a more effective and engaging learning environment. Recommended Diagnostic Framework for Readiness Prior to Implementing HOTS and CTS to close the gap between research outcomes and classroom implementation ability, a diagnostic framework is suggested to assess students' readiness prior to implementing Higher-Order Thinking Skills (HOTS) and Critical Thinking Skills (CTS). The framework includes the following:

1. Placement Test: To ascertain students' foundational knowledge in the subject matter. Multiple-choice or short-answer questions that cover basic concepts.
2. Self-Assessment Checklist: To encourage student reflection on their metacognition and confidence. Brief Likert-scale statements (e.g., "I can explain key vocabulary," "I feel confident analysis a short text").
3. Teacher Observation: To collect qualitative data on classroom behavior and engagement. Tools: Rubrics, anecdotal records, or observation checklists. Focus Areas: Participation, questioning, response accuracy, and use of reasoning.
4. Interviews or Informal Conferences: To collect individual insights and assess student motivation and metacognition. Questions might include "What do you do when you don't know an answer?" "How do you solve a problem?"
5. Role-Play or Situational Tasks: To see how students implement knowledge in new, real situations. Examples: Debates, simulations, or problem-solving exercises.
6. Data Analysis and Grouping Students may be categorized on the basis of readiness levels based on the above instruments: ready for HOTS & CTS, partially ready (require support) and not ready (need foundation reinforcement).

Future research should develop and empirically test diagnostic tools to assess student readiness for HOTS and CTS instruction. Longitudinal studies examining the impact of gradual HOTS integration in EFL classrooms across different educational levels in Oman would also be valuable. Furthermore, comparative studies between digital and in-person questioning strategies could shed light on technological interventions that enhance critical thinking development.

Author Contributions

Conceptualization, N.M.A. and N.A.N.; methodology, N.M.A.; software, N.M.A.; validation, N.A.R. and N.A.N.; formal analysis, N.M.A.; investigation, N.A.N.; resources, N.M.A.; data curation, N.M.A.; writing—original draft preparation, N.M.A.; writing—review and editing, N.A.N.;

visualization, N.M.A.; supervision, N.A.N. and N.A.R.; project administration, N.M.A.; funding acquisition, N.M.A. All authors have read and agreed to the published version of the manuscript.

Funding

This work received no external funding.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

Not applicable.

Acknowledgments

The authors would like to express their sincere gratitude to the participating schools, teachers, and students for their valuable cooperation during the data collection process. Special thanks are also extended to the supervisors and colleagues who provided constructive feedback and guidance throughout the preparation of this research.

Conflicts of Interest

The authors declare no conflict of interest.

References

[1] Aprina, N.D., Andriyanti, E., 2020. Teachers' questions in elementary school English learning: Types and functions. Indonesian Journal of EFL and Linguistics. 5(2), 339.

[2] Wolcott, S.K., Sargent, M.J., 2021. Critical thinking in accounting education: Status and call to action. Journal of Accounting Education. 56, 100731.

[3] Al Ghunaimi, H., 2025. Improving resource choices for students and professionals in accounting and finance according to personality characteristics: Exploratory study. International Journal of Innovative Research and Scientific Studies. 8(2), 44–54. DOI: http://dx.doi.org/10.2139/ssrn.5281971

[4] Aziza, M., 2021. A teacher questioning activity: The use of oral open-ended questions in mathematics classroom. Qualitative Research in Education. 10(1), 31–61.

[5] Zainil, M., Kenedi, A.K., Indrawati, T., et al., 2023. The Influence of a STEM-Based Digital Classroom Learning Model and High-Order Thinking Skills on the 21st-Century Skills of Elementary School Students in Indonesia. Journal of Education and E-Learning Research. 10(1), 29–35.

[6] Ölmezer-Öztürk, E., Öztürk, G., 2016. Types and Timing of Oral Corrective Feedback in EFL Classrooms: Voices from Students. Novitas-ROYAL (Research on Youth and Language). 10(2), 113–133.

[7] Mahmoodi-Shahrebabaki, M., Yaghoubi-Notash, M., 2015. Teachers' and Learners' Attitudes towards Critical Thinking Skills: A Case Study in the Iranian EFL Context. Journal of Applied Linguistics and Language Research. 2(2), 93–106.

[8] Singh, R.K.V., Shaari, A.H., 2019. The analysis of Higher-Order Thinking skills in English reading comprehension tests in Malaysia. Geografia. 15(1), 12–26.

[9] Simonson, M., Zvacek, S.M., Smaldino, S., 2019. Teaching and Learning at a Distance: Foundations of Distance Education, 7th ed. Information Age Publishing Inc. (IAP): Charlotte, NC, USA.

[10] Bradl, H., Bechmann, J., Mueller, M., et al., 2016. Platform approach speeds process development. BioPharm International. 29(4), 20–25.

[11] Aston, K.J., 2024. 'Why is this hard, to have critical thinking?' Exploring the factors affecting critical thinking with international higher education students. Active Learning in Higher Education. 25(3), 537–550.

[12] List, A., Sun, Y., 2023. To clarity and beyond: Situating higher-order, critical, and critical-analytic thinking in the literature on learning from multiple texts. Educational Psychology Review. 35(2), 40.

[13] Debache, A., 2016. Enhancing Problem-Solving Skills and Motivation through Cooperative Learning. Revue Des Sciences Humaines. 27(4), 7–26.

[14] AlMutairi, A.N.M., 2015. The Effect of Using Brainstorming Strategy in Developing Creative Problem Solving Skills among Male Students in Kuwait: A Field Study on Saud Al-Kharji School in Kuwait City. Journal of Education and Practice. 6(3), 136–145.

[15] Grii, P., Care, E., 2015. Assessment and Teaching of 21st Century Skills: Methods and Approach. Springer: Dordrecht, the Netherlands. DOI: https://doi.org/10.1007/978-94-017-9395-7

[16] Awashreh, R., Ghunaimi, H. (eds.), 2025. Bridging cultural gaps: Enhancing student motivation and academic integrity in Oman's universities. Forum for Linguistic Studies. 7(2), 265–279.

[17] Al Ghunaimi, H., 2024. The Employee Engagement's Impact on Productivity and Motivation in the Private

higher education Sector in Oman. Journal of Ecohumanism. 3(6), 869–877.

[18] Aghajani, M., Gholamrezapour, E., 2019. Critical Thinking Skills, Critical Reading and Foreign Language Reading Anxiety in Iran Context. International Journal of Instruction. 12(3), 219–238.

[19] Alkharusi, H.A., Al Sulaimani, H., Neisler, O., 2019. Predicting Critical Thinking Ability of Sultan Qaboos University Students. International Journal of Instruction. 12(2), 491–504.

[20] Booth, A., Carroll, C., 2015. Systematic searching for theory to inform systematic reviews: is it feasible? Is it desirable? Health Information & Libraries Journal. 32(3), 220–235.

[21] Özpir, H.C., Balcı Çömez, C., Benzer, E., 2025. Scientific stories in the assessment of higher order thinking skills. Cogent Education. 12(1), 2460226.

[22] Yen, T.S., Halili, S.H., 2015. Effective teaching of higher order thinking (HOT) in education. The Online Journal of Distance Education and e-Learning. 3(2), 41–47.

[23] Al-Kindi, N.S., AL-Mekhlafi, A.M., 2017. The Practice and Challenges of Implementing Critical Thinking Skills in Omani Post-Basic EFL Classrooms. English Language Teaching. 10(12), 116–133.

[24] Tuzlukova, V., Al Busaidi, S., Burns, S., et al., 2018. EXPLORING TEACHERS'PERCEPTIONS OF 21ST CENTURY SKILLS IN TEACHING AND LEARNING IN ENGLISH LANGUAGE CLASSROOMS IN OMAN'S HIGHER EDUCATION INSTITUTIONS. Journal of Teaching English for Specific and Academic Purposes. 6(1), 191–203.

[25] Tyas, M.A., Nurkamto, J., Marmanto, S., et al. (eds.), 2019. Developing Higher Order Thinking Skills (HOTS)–Based Questions: Indonesian EFL Teachers' Challenges. Proceedings of the International Conference on Future of Education. 2(1), 52–63. DOI: https://doi.org/10.17501/26307413.2019.2106

[26] Ginting, A.A., Kuswandono, P., 2020. Challenges faced by English teachers: Implementation of higher order thinking skills (HOTS) in designing assignments in East Indonesia. Pedagogy: Journal of English Language Teaching. 8(1), 13–23.

[27] Al Mamari, M.R.H., Al-Mekhlaf, A.M., Al-Barwani, T.A., 2018. Is Communicative Language Teaching Being Tested Communicatively? An Analysis of English Tests in Oman. English Language Teaching. 11(11), 83–91.

[28] Deveci, I., Konuş, F.Z., Aydiz, M., 2018. Investigation in terms of life skills of the 2018 Science Curriculum Acquisitions. Cukurova University Faculty of Education Journal/Çukurova Üniversitesi Eğitim Fakültesi Dergisi. 47(2), 765–797.

[29] Seman, S.C., Yusoff, W.M.W., Embong, R., 2017. Teachers challenges in teaching and learning for higher order thinking skills (HOTS) in primary school. International Journal of Asian Social Science. 7(7), 534–545.

[30] Mehta, S.R., Al-Mahrooqi, R., Denman, C., et al., 2018. Assessing Omani University Entrants' Critical Thinking Skills with the Cornell Class-Reasoning Test Form X. Pertanika Journal of Social Sciences & Humanities. 26(4), 2229–2242.

[31] Aziz, A.A., Ismail, F., Ibrahim, N.M., et al., 2017. Investigating the implementation of Higher Order Thinking Skills in Malaysian classrooms: Insights from l2 teaching practices. Sains Humanika. 9(4-2), 65–73. DOI: https://doi.org/10.11113/sh.v9n4-2.1361

[32] Romadhoni, I., Nurlaela, L. (eds.), 2018. Higher Order Thinking Skills to Enhance Millennial Students Through Active Learning Strategies. In Proceedings of the International Conference on Indonesian Technical Vocational Education and Association (APTEKINDO 2018), Surabaya, Indonesia, 11–14 July 2018; pp. 91–94.

[33] Cooper, K.M., Downing, V.R., Brownell, S.E., 2018. The influence of active learning practices on student anxiety in large-enrollment college science classrooms. International Journal of STEM education. 5(1), 23.

[34] Brame, C., 2016. Active learning. Vanderbilt University Center for Teaching: Nashville, TN, USA. Available from: https://cft.vanderbilt.edu/wp-content/uploads/sites/59/Active-Learning.pdf (cited 24 December 2024).

[35] Gonulal, T., Loewen, S., 2018. Scaffolding Technique. In: Liontas, J.I. (ed.). The TESOL Encyclopedia of English Language Teaching. John Wiley & Sons, Inc.: Hoboken, NJ, USA. pp. 1–5. DOI: https://doi.org/10.1002/9781118784235.eelt0180

[36] Alrawili, K.S., Osman, K., Almuntasheri, S., 2020. Effect of Scaffolding Strategies on Higher-Order Thinking Skills in Science Classroom. Journal of Baltic Science Education. 19(5), 718–729.

[37] Zare, P., Mukundan, J., 2015. The use of Socratic method as a teaching/learning tool to develop students' critical thinking: A review of Literature. Language in India. 15(6), 256–265.

[38] Martin, N.D., Dornfeld Tissenbaum, C., Gnesdilow, D., et al., 2019. Fading distributed scaffolds: The importance of complementarity between teacher and material scaffolds. Instructional Science. 47(1), 69–98.

[39] Sulaiman, M.A.A., Swanto, S., Din, W.A., 2018. Theory-Practice Gaps in Developing Critical Thinking: Insights from a Pedagogical Study in Omani Context. Arab World English Journal. 9(3), 258–281.

[40] Setianingsih, R., Sa'dijah, C., As'ari, A.R., et al., 2017. Investigating fifth-grade students' construction of mathematical knowledge through classroom discussion. International Electronic Journal of Mathematics Education. 12(3), 383–396.

[41] Indriyana, B.S., Kuswandono, P., 2019. Developing students' higher order thinking skills (HOTS) in read-

ing: English teachers' strategies in selected junior high schools. JET (Journal of English Teaching). 5(3), 204–216.

[42] Saputra, M.D., Joyoatmojo, S., Wardani, D.K., et al., 2019. Developing critical-thinking skills through the collaboration of jigsaw model with problem-based learning model. International Journal of Instruction. 12(1), 1077–1094.

[43] Jabeen, S.S., Thomas, A.J. (eds.), 2015. Effectiveness of Online Language Learning. In Proceedings of the World Congress on Engineering and Computer Science 2015, San Francisco, CA, USA, 21–23 October 2015; pp. 1–5.

[44] Blings, S., Maxey, S., 2017. Teaching students to engage with evidence: An evaluation of structured writing and classroom discussion strategies. Journal of Political Science Education. 13(1), 15–32.

[45] Abrar, M., Mukminin, A., 2016. International graduate classroom discussion engagement, challenges, and solving-strategies. Asia-Pacific Collaborative education Journal. 12(1), 5–19.

[46] Asok, D., Abirami, A., Angeline, N., et al. (eds.), 2016. Active Learning Environment for Achieving Higher-Order Thinking Skills in Engineering Education. In Proceedings of the 2016 IEEE 4th International Conference on MOOCs, Innovation and Technology in Education (MITE), Madurai, India, 09–10 December 2016; pp. 47–53.

[47] Paul, R., Elder, L., 2019. The Miniature Guide to Critical Thinking Concepts and Tools. Rowman & Littlefield: Lanham, MD, USA.

[48] AlKhoudary, Y.A.M., 2015. The effect of teaching critical thinking on Al-Buraimi university college students' writing skills: A case study. International Journal of applied linguistics and English literature. 4(6), 212–219.

[49] Thakur, V.S., Al-Mahrooqi, R., 2015. Orienting ESL/EFL Students Towards Critical Thinking through Pictorial Inferences and Elucidation: A Fruitful Pedagogic Approach. English Language Teaching. 8(2), 126–133.

[50] Anggraeni, D.M., Sole, F.B., 2020. Analysis of Science Teachers' Understanding of High Order Thinking Skills (HOTS) and Their Implementation in Learning. Jurnal Penelitian Pendidikan IPA. 6(2), 210–214.