

CHAPTER 5

DISCUSSIONS AND CONCLUSIONS

In this chapter, the findings of this study were synthesized and the implications for students' critical thinking enhancement through HOTS-based tasks were discussed. This study's limitations and recommendations were also addressed and offered for future research.

5.1 Summary of the key findings

Regarding the findings for research question no. 1, students' improvement was evident in analyzing, evaluating and creating. Particularly, students displayed greater depth in analysis. The number of analyzed statements increased with more concrete examples, and stronger logical connections among ideas. Instead of relying solely on personal opinions, students began using research findings and statistical data to support their claims. This transition from personal reasoning to evidence-based argumentation reflected an enhanced capacity for evaluation. Importantly, students demonstrated more creativity in their reasoning. Although creativity was often limited to expressing personal viewpoints before the training, the students not only presented opinions but also proposed solutions and offered future predictions. This improvement of creativity showed their ability to integrate analytical thinking with appropriate reasoning, which was essential for academic and professional success. Overall, these findings indicated that students' engagement with HOTS-based tasks significantly enhanced their critical thinking skills.

Concerning the findings for the research question no. 2, for introduction, a notable improvement was reflected in students' attractive hooks, connected information, and clear thesis statement. First, significant progress in designing hooks to catch the audience's attention was demonstrated via the techniques of using the related questions or utilizing relevant statistics. Secondly, the smooth transition between connecting information and thesis statements experienced an improvement. Finally, the students' thesis statement was formulated more purposely when they clearly outlined the scope and their intended presentation. Respecting bodies, the bodies were improved in terms of enhanced creativity and persuasive arguments within well-structured paragraph organization. Within this study, crafting body paragraphs with clear topic sentences, connected supporting sentences, and credible evidence reflected

students' improvement of content quality. Particularly, topic sentence formulation showed a noticeable improvement when students realized how to purposely establish the main idea of each paragraph while maintaining relevance to the speech's overall argument. The progress of supporting sentence development was then illustrated. Students showed more logic in expanding their topic sentences with coherent arguments via synthesized ideas. Especially, students' use of credible evidence via selecting appropriate examples, data, or citations to substantiate their claims was also improved. Regarding the conclusion, generating a conclusion that recapped the main ideas and provided suggestions, opinions, predictions, or questions required students to integrate critical thinking into their presentations. A thematic analysis of students' improvements revealed three key factors, including providing restatement of main ideas, offering contributions, and engaging the audience with relevance. Specifically, students revealed improved capacity in restating their work's main ideas with clarity and coherence. Moreover, they also showed enhancement in providing thoughtful contributions, such as providing relevant suggestions, integrating persuasive opinions, and suggesting perspective analysis. Furthermore, improvements were evident in students' language use including vocabulary, sentence structures, grammatical accuracy, and overall intelligibility. Particularly, students expressed a great decline in the use of simple sentences, accompanied by the increase of compound and complex forms. The findings also demonstrated that they were able to apply better grammatical structures with wider range of relevant vocabulary to articulate ideas.

Regarding the findings of the research question no. 3, beyond academic performance, participants expressed positive perceptions of the implementation of HOTS-based tasks. 90% of students felt more motivated, engaged, and confident during their learning process.

In summary, findings from both quantitative data (e.g., improvements in mean scores and self-evaluation scores) and qualitative data (e.g., content analysis of students' responses of reflective journals, transcripts, and thematic analysis of semi-structured interview) clearly showed that HOTS-based tasks positively influenced students' critical thinking skills, content quality, and language use. Students expressed positive perceptions of HOTS-based tasks, confirming their effectiveness in enhancing their learning outcomes.

5.2 Discussions

This section described the steps involved in designing HOTS-based tasks and explained why such tasks helped students improve their critical thinking skills, content quality, and language use. The findings were compared with those of previous studies,

highlighting similarities and differences. Following this, several suggestions were offered for revising HOTS-based tasks to better support students' learning.

5.2.1 The positive effects of HOTS-based tasks on improving students' critical thinking skills

5.2.1.1 The grounded theory for critical thinking skills improvement

Drawing on quantitative and qualitative evidence from pre- and post-oral presentation tests, transcripts, reflective journals and semi-structured interviews, the present study consistently demonstrated that students improved their critical thinking skills significantly after engaging with HOTS-based tasks. These results aligned with the theoretical perspectives of Srinawati and Khasyar (2020), whose work indicated that HOTS-based instruction contributed to the improvement of Indonesia high school students' reasoning, problem-solving, and critical thinking skills through data collection tools, i.e., observations, structured questionnaires, and focus group interviews. These results reflected a recognition of HOTS as a pedagogical tool for improving students' critical thinking skills across diverse educational contexts. Whereas Srinawati and Khasyar focused on secondary school students with general HOTS application in an English class, the current study was situated in tertiary English Public Speaking instruction to improve students' critical thinking skills with HOTS-based tasks. To address the new context, the current study extended the theoretical foundation by combining Anderson and Krathwohl's (2001) revised taxonomy of HOTS with Task-Based Language Teaching (TBLT) principles (Ellis, 2003), designing tasks under the structured stage of pre-, while-, and post-tasks.

HOTS-based individual tasks were designed to strengthen analyzing, evaluating, and creating skills individually, incorporating scaffolding through guided questions that encouraged students to differentiate information, identify coherence, detect inconsistencies, form personal judgments, make hypotheses, and design persuasive arguments. Each question served as a step in guiding students through the critical thinking process, allowing them to build cognitive skills gradually, to deeply comprehend reading materials, and to formulate initial viewpoints on the given topics. HOTS-based group tasks were later designed to guide students to various questions for collaborative debate and diverse viewpoint critique on specific topics based on the theory of Zone of Proximal Development (ZPD) as outlined by Chaiklin (2003), Le and Chong (2023), and Kuhn and Modrek (2023) to emphasize peer interaction for critical thinking skills improvement. These tasks activated logical reasoning, allowed students to confront diverse viewpoints, defend positions, and revise arguments based on peer input. Guided by Jonassen's (1999) constructivist principles, the group tasks promoted

meaningful engagement through social interaction, contextualized learning, and metacognitive reflection.

By sequencing individual and group tasks in a scaffolded learning cycle (Le, 2000; Ellis, 2003), the intervention enabled students to firstly engage in individual analysis and opinion formation, and then participate in peer discussions to refine their viewpoints and articulate them in English Public Speaking formats. This theoretical integration demonstrated how HOTS-based tasks significantly improved students' critical thinking skills.

5.2.1.2 Cognitive domains and cognitive conflicts for critical thinking skills improvement

Qualitative insights from semi-structured interviews revealed a dramatical improvement in students' cognitive domains. Before the intervention, students reported an abstract understanding of the cognitive domains associated with analyzing, evaluating, and creating. They expressed uncertainty about what it meant to analyze a text or a topic, which aspects should be evaluated, and how creativity could be demonstrated within English Public Speaking context. However, after engagement with HOTS-based tasks, students began familiar and improved their cognitive domains.

It is found that the findings of this research reinforce the central role of cognitive domains, i.e., analyzing, evaluating, and creating, in cultivating students' critical thinking, particularly in the context of English Public Speaking. This result was consistent with prior studies such as Bahrudin et al. (2020), Mercer (2000), and Pumama and Nurdianingsih (2019), which emphasized that tasks targeting the cognitive domain significantly contribute to the improvement of learners' critical thinking. In particular, tasks that promoted analysis encouraged students to separate information, identify the interrelationship among components, and distinguish between relevant and irrelevant details. In fostering evaluation, tasks required students to assess the sources' credibility, justify the mentioned reasons, and critique solutions or alternative solutions based on personal criteria and background knowledge. Meanwhile, tasks for creation enhancement challenged students to generate innovative responses or solutions by synthesizing prior knowledge with collective input. Such applications of analysis, evaluation, and creation purposefully scaffolded students' cognitive thinking engagement to improve students' critical thinking during the training process.

Besides cognitive domain, it was found that cognitive conflict of the current study stimulated critical thinking skills. As suggested by Berkelaar et al. (2019), Burhanuddin (2021), Iberri-Shea (2019), and Yulianti and Sulistyawati (2021), cognitive

conflict was referred to a critical instructional element that arose when students encounter debating topics with contradictory information from given reading materials, competing viewpoints, or solutions that challenge their existing background knowledge. Rooted in Piaget's (1977) theory of cognitive disequilibrium, such conflicts compel students to re-examine assumptions, balance and integrate knowledge from multiple sources, evaluate the conflicting evidence, and resolve ambiguities for creativity – essential behaviors of critical thinking skills. For instance, by introducing debates that challenged existing perspectives, students were pushed beyond surface-level responses by HOTS-based tasks in the current study. This aligned with the findings of Chen (2016), Singh et al. (2020), and Riza and Setyarini (2020), who emphasized that HOTS-based tasks scaffolded from open-ended, real-world problems could foster students' ability to construct well-supported arguments, articulate multiple perspectives, and develop compelling reasoning. The process of resolving cognitive conflicts through HOTS-based tasks in English Public Speaking context enabled students to not only deepen content understanding but also improve their critical thinking skills.

5.2.1.3 HOTS-based questions for critical thinking skills improvement

The present study further confirmed that HOTS-based questions enhanced students' critical thinking skills when embedded meaningfully into English speaking tasks. Students reported positive perceptions of cognitive engagement, demonstrating that when questions were designed to target specific cognitive levels, they significantly improved students' critical thinking skills. The findings partially aligned with the claims of Chen (2016) that appropriate structured approach can foster critical thinking in L2 speaking. In Chen's model, teachers guided students through two phases: initially encourage them to expand their personal opinions in extended individual responses, and subsequently facilitate group discussions to promote collaborative reasoning, listening, and reflection. These stages laid the foundation for improving students' critical thinking skills.

While the cognitive focus in both studies was similar, the current study diverged from Chen (2016) in terms of task delivery. Rather than relying heavily on immediate, teacher-led questioning and in-class responses within a 10-second timeframe, HOTS-based questions in this study were integrated into individual worksheets completed outside the classroom. This design allowed students more time to read materials, synthesize information, and organize ideas before producing deeper and more reasoned responses. Furthermore, the HOTS-based questions were theoretically constructed in alignment with Anderson and Krathwohl's (2001)

taxonomy and Sullivan and Lilburn (2004), with each item explicitly targeting analyzing, evaluating, or creating skills. Such an adapted way for implementation proved particularly effective for EFL Vietnamese tertiary students, whose English proficiency and cognitive maturity benefited from the extended time and guided structure to improve critical thinking skills.

The current study also incorporated the second phase – group discussion – from Cox (2019), Chen (2016), and Le and Chong (2024) through HOTS-based group tasks to structure peer-interaction tasks. These tasks were supported by discussion prompts that elicited critical engagement and encouraged students to respond to one another’s viewpoints by using analysis, evaluation, and creation. Such ways of delaying individual response and guiding collaborative interaction enabled students to improve students’ cognition and critical thinking skills.

Another key issue of these findings of the current study was the importance of contextualizing HOTS-based tasks to the instructional setting and students’ cognitive levels of analysis, evaluation, and creation. The design of HOTS-based questions could not follow a one-size-fits-all template for students and learning contexts, topic complexity, subject familiarity, course objectives, and participants’ English proficiency levels. For instance, HOTS-based questions for general speaking or English Public Speaking were different. A task asking students to “list technology applications in education” may only elicit lower-order responses. In contrast, asking them to “figure out effective integration ways for technology utilization in different educational contexts and proposing a localized application plan” pushed students to engage at higher cognitive levels. Moreover, while a 10-second immediate response might be appropriate in general speaking classes targeting fluency, it may not suffice for tasks intended to stimulate deeper reasoning in public speaking contexts for tertiary students. In such settings, students not only presented well-structured content but also adapted delivery techniques for audience engagement. As demonstrated in the current study, controversial topics such as appropriate implications of educational technology and the future of nuclear energy in Vietnam. Such kinds of topics elicited more compelling reasons when students were given time to analyze the content, to evaluate the various perspectives, and to create some practical application in specific context.

5.2.1.4 Scaffolding for critical thinking skills improvement

The present study reinforced the significance of scaffolding tasks in promoting students’ critical thinking skills within the context of English Public Speaking for tertiary students. The findings are in line with those of Manaf et al. (2024) and Ooi

and Lim (2022), both of which emphasized that appropriate scaffolding for cognitive processes can improve students' critical thinking skills.

Specifically, Ooi and Lim (2022) examined the impacts of combining case-study instruction with scaffolding technique in an accounting course at Universiti Utara Malaysia. Their qualitative findings revealed that scaffolding helped students move beyond surfaced engagement, what they described as "skim-reading to complete a task". In agreement with Indriyana and Kuswando (2019), Srinawati and Khasyar (2020), and Vygotsky's (1978), Ooi and Lim concluded that effective scaffolding should involve structured guidance, targeted feedback, and a gradual decrease of guidance to encourage students' cognitive levels and critical thinking skills.

Although the conceptual foundation was shared, the current study introduced an adaptation by applying scaffolding within HOTS-based tasks tailored for English Public Speaking classes in a Vietnamese university context. Unlike Ooi and Lim's case study instruction, the instructional design in this study was integrated scaffolding into HOTS-based tasks to develop both language competence and critical thinking skills. This integration involved structuring both individual and collaborative tasks around Anderson and Krathwohl's (2001) cognitive domains: analyzing, evaluating, and creating. For instance, scaffolding in this study arose when students knew how to deconstruct an argument and compare multiple perspectives (Anderson and Krathwohl, 2001; King et al., 2006; Kuswana, 2012; and Stapleton, 2001). This was followed by the integration of HOTS-based question techniques to prompt students to move beyond their surface understanding. For example, instead of asking "*What does the author say?*", the HOTS-based task posed advanced questions such as "*What are the differences between the two terms 'tertiary education' and 'nontertiary education?'*" and "*Whether the supporting sentences and the evidence relate to the topic sentence within one paragraph?*" for analyzing skills, "*Whether the information mentioned in the materials are reliable? Why?*" and "*Is the author's viewpoint presented in the materials bias? Why?*" for evaluating skills, "*according to your personal viewpoint, is a university degree necessary to get a good job? Why or why not with evidence?*" and "*What are your suggested solutions for Vietnamese young students to achieve good jobs with bachelor's degrees? Explain with evidence*" for creating skills. These reflection prompts stimulated students' deeper cognitive engagement and critical thinking skills via their logical arguments.

Based on the learning process and perceptions of participants in this study, as students are familiar with these HOTS-questions, scaffolding gradually shifted toward support, enabling students to apply analyzing, evaluating, and creating skills

independently with specific contexts. Through this process, scaffolding helps students to transform explicit guidance into internalized critical thinking habits. Thus, scaffolding in this study for cognitive engagement was a vital contribution for students' critical thinking skills improvement.

5.2.1.5 Authentic contexts for critical thinking skills improvement

The qualitative findings of the present study suggested that students' critical thinking skills can be improved through the use of authentic contexts. This result aligned with prior studies such as Bessu et al. (2018), Hashemi et al. (2012), Velasco (2021), Richards and Rodgers (2001), and Sulyaningsih (2021), which emphasized the role of real-world content in improving cognitive engagement and critical thinking skills in English language classrooms.

The present study shared a similar selection of authentic materials with Bessu et al. (2018) to facilitate critical thinking skills among senior high school students in Medan. Their findings, based on semi-structured interviews, highlighted the importance of choosing interesting reading topics to stimulate students' learning motivation to engage with texts and to support teachers to manage classroom discussions and solve problems arising from those materials. Comparable conclusions were drawn by Sulyaningsih (2021), whose study with third-semester English-major students showed that authentic reading materials could be used as effective teaching tools for critical thinking development. Through qualitative analysis of students' responses, the study found that students demonstrated progress in identifying the writer's central issue, understanding the text's communicative purpose, recognizing supporting evidence, and articulating spoken or written arguments in response to the topic.

While the foundational concept of using authentic material was consistent across studies, the current research introduced key adaptation that distinguished it from previous ones. First, the design of HOTS-based tasks in this study extended beyond reading comprehension by incorporating argumentative and controversial English Public Speaking topics aligned with the cognitive demands of students. This study added another dimension to authenticity-not only in terms of content, but also in terms of task purpose and communicative context. The themes selected were age-appropriate for university students and situated within academic and social issues relevant to the Vietnamese EFL context (e.g., "Should education depend on technology?" or "Is nuclear energy a viable future solution for Vietnam?"). These topics demanded students to engage critically, both cognitively and emotionally, with real-world dilemmas.

Second, the integration of HOTS-based questions into authentic materials was carried out in a structured and phased manner, moving from reading comprehension to critical analysis and finally to argumentative public speaking. Each reading text was supplemented with HOTS-oriented prompts targeting specific cognitive levels-analyzing, evaluating, and creating-which prepared students for higher-order oral production. This task progression enabled a smooth transition from individual understanding to group discussion and English Public Speaking articulation, as reflected in the accompanying lesson plans provided in the appendices.

5.2.2 The positive influences of HOTS-based tasks on students' content quality and language use

The findings of this study indicated that the integration of Higher-Order Thinking Skills (HOTS)-based tasks significantly enhanced students' content quality and language use in English oral presentations. Both qualitative and quantitative data revealed marked improvements in sentence structure, vocabulary range, and grammatical accuracy, particularly when students were required to convey complex ideas. These improvements were closely associated with students' exposure to authentic input materials, which provided both content-rich information and contextually appropriate vocabulary.

5.2.2.1 HOTS - oriented (Task-based) instruction for content quality and language use improvement

Drawing from both qualitative and quantitative data, the current study demonstrated that as students engaged in HOTS-based tasks involving analyzing, evaluating, and creating, they gradually were able to construct more coherent and persuasive arguments with more accurate grammatical points, range of vocabulary, and various sentence structures. The findings were consistent with those of Chen (2016) and Syafryadin et al. (2020), who reported that HOTS can train students to think critically, creatively, and innovatively. Their study, conducted with undergraduate students in the English Education Study Program at a state university in Bengkulu, Indonesia via classroom observation, questionnaire, and interviews, also demonstrated that HOTS-oriented instruction helped address several key challenges in students' speaking performance, including weak arguments, limited vocabulary and grammar, insufficient background knowledge, nervousness, and particularly the inability to generate ideas during interaction. According to their report, students showed improvement in English speaking skills as they learned how to respond effectively during peer interaction. However, Syafryadin et al. (2020) did not offer detailed accounts of the classroom activities or the types of HOTS-based questions and tasks

that students experienced, leaving unclear how the observed improvements were achieved. Moreover, their study focused on general English speaking instruction without specifying the students' English proficiency levels, while the present study targeted English majors with a CEFR-aligned proficiency level of B1, engaged in an English Public Speaking course where students were expected not only to interact in English but also to develop, justify, and deliver arguments on assigned topics to audience. This context required higher levels of both content quality and language use than general speaking classes. Furthermore, the current study relied on multiple sources of data, including pre- and post-oral presentation scores and students' recorded performances, offering concrete evidence of improvement in both content quality and language use. This contrasts with the study by Syafryadin et al., which relied heavily on self-reported data from questionnaires and interviews, which may not fully reflect students' actual communicative competence. The current findings are also supported by prior studies such as Afshar and Movassagh (2017) and Shirkhani and Fahim (2011), who emphasized that integrating critical thinking into language instruction leads to improved organization of arguments and increased linguistic accuracy.

5.2.2.2 Collaborative engagement for content quality and language use improvement

Regarding HOTS-based group tasks, the current study found that students' perspectives can be broadened and refined by interactions. The construction of meaning through exchanging ideas enabled students to deepen their content quality and articulated themselves with more accurate grammar points and various sentence structures. These findings align with Le and Chong (2024) and Gillies (2016), who emphasized that collaborative work provides students opportunities to engage in meaningful dialogue to question, negotiate, evaluate, and construct personal ideas based on peer discussion. Similar to arguments of Anderson (2008a, 2008b), interaction through group discussion can improve students' content quality when they knew how to pose questions, justify opinions, analyze problems, and critically evaluate alternative perspectives

Moreover, qualitative data from student interviews in the current study revealed a notable shift in students' capacity to formulate persuasive and personal arguments. Several participants responded that they had learned to acknowledge and integrate opposing viewpoints into their own reasoning. They were adept at asking thoughtful questions, articulating their reasoning, and respectfully challenging differing viewpoints when they participated in discussions. This development highlighted the intertwined growth of content quality and language use.

5.2.2.3 Guided feedback from lecturers for content quality and language use improvement

Qualitative findings from the current study underscored the significant role of guided feedback in improving students' critical thinking skills within the English Public Speaking context. After the intervention, students reported that lecturer's guided feedback helped them to gradually shape and extend their personal perspectives during HOTS-based task completion and oral presentations. The current findings were contrary to the findings reported by Ariska et al. (2021). Ariska and colleagues implemented a qualitative study with 31 seventh-grade students in a general English classroom in Indonesia using observation and interview data. Their study emphasized the use of guided questions during feedback to encourage students to express their thinking or reasoning via the questions like "What is the idea?", "What is the study probably about?", or "What else?", along with metacognitive prompts like "Now, you are at the analysis level; next, you should move toward evaluation." The target for such kinds of questions was helping students recognize the cognitive level they were operating at and direct them toward more advanced thinking levels.

While such structured feedback was pedagogically valuable, the current study applied a more suitable way for tertiary English-major students, particularly in English Public Speaking contexts. In the current study, feedback was not designed to explicitly teach students about HOTS because these abstract terms were not directly accessible to many students. Rather, feedback in the current study served a more functional purpose to support students in developing more persuasive responses. This view aligned with Brookhart (2010) and Shute (2008), who emphasized that effective feedback should guide students toward improvement, not merely signal correctness or cognitive classification.

Specifically, feedback in the present study was designed to encourage students to enhance their reasoning with evidence and justifications instead of relying on correctness according to a model answer or majority opinion. Through guided questioning, instructors stimulated students to expand their arguments, clarify their logic, and improve the relevance and credibility of their content. For example, students were encouraged to select supporting materials that contained statistical evidence, up-to-date information, or feasible solutions with some typical open-ended prompts such as "*how well does the evidence support the claim?*", "*Do you have alternative perspectives or solutions?*". This critical engagement with source materials not only deepened content knowledge but also facilitated vocabulary growth and grammatical accuracy development over time.

5.2.2.4 Information synthesis and the use of translation tools for content quality and language use improvement

Based on interview data from the current study, the finding revealed that students became increasingly familiar with the process of synthesizing information through the use of guided worksheets and translation tools. This finding stood in contrast to the study conducted by Nurmaharaeni et al. (2022), which investigated the effects of HOTS-based instruction on 23 eighth-grade students' reading comprehension in a general English classroom. Their study concluded that HOTS improved learners' ability to make inferences, predict questions, and provide logical reasoning based on reading texts. The emphasis was on students' improved capacity to answer comprehension questions with greater accuracy and critical thinking skills, and the researchers noted a clear distinction in performance between students who were taught with HOTS strategies and those who were not.

While Nurmaharaeni et al. (2022) focused primarily on students' ability to respond to reading comprehension questions derived from short texts or simple reading materials, the current study targeted university-level English majors who engaged with more complex, research-based readings. These materials involved advanced content with multidimensional social issues that required not just understanding what the author said, but constructing arguments, integrating external knowledge, and formulating personal viewpoints to persuade an audience. Thus, reading comprehension was no longer about simply answering "what," "how," or "why" questions based on a single source; it involved synthesizing diverse pieces of evidence to develop a well-supported, contextually relevant position.

In this regard, the current study utilized reading comprehension as a synthesis process, where students were encouraged to integrate arguments, examples, and background knowledge from multiple texts. This process was scaffolded through HOTS-based tasks to enable students to deconstruct complex texts, identify central ideas, and reconstruct meaning through the lens of personal interpretation and purposeful communication. This process also reflected principles of constructivist learning theory (Jonassen, 1999), which highlights the importance of student engagement in constructing meaning through authentic and cognitively demanding experiences.

Additionally, students reported that using translation tools helped them access and comprehend advanced English materials in less time. Rather than depending on translation as a crutch, students used it as a support tool to read more efficiently and widely. With bilingual resources, students cross-checked understanding

and compared perspectives from both English and Vietnamese sources, thus deepening the breadth and accuracy of their comprehension from multiple sources across different contexts, contributing significantly to their improvement of content quality and language use.

5.3 Suggestions for HOTS-based task adjustment

Besides the positive influences of the intervention after the training course, some challenges were also mentioned for chosen topics. They were caused by unfamiliar topics, inability to access resources, technical complexity of the subject, and lack of media and public interest. One of the frequently mentioned difficulties was the unfamiliarity of the topic. As expressed by a student (S1), the issue of nuclear power was rather distant and abstract compared to more familiar topics like higher education, which students could easily relate to their personal experiences and background knowledge. The lack of prior background created challenges in researching and constructing arguments. In addition, the inability to access resources was highlighted by S10, who found it difficult to comprehend complex nuclear energy materials in both English and Vietnamese. Consequently, their ability to develop content for the tasks was reduced. The challenge was also compounded by the technical complexity of the subject matter. As S9 described difficulties stemming from limited science and engineering background, making the topic overwhelming. Finally, S4 emphasized a lack of media and public interest in nuclear energy, which resulted in a lower level of awareness and diminished motivation to engage deeply with the topic.

From such mentioned problems, the topic should be selected carefully to ensure students' effective learning engagement during designing persuasive presentation tasks. Topics that are unfamiliar or too difficult or based on complex reading materials can hinder their performance. To align with Krashen's $i + 1$ theory, the topic should be chosen based on their current English proficiency level. It is challenging but manageable. Moreover, topics relating to students' personal interests should be preferred to enhance students' intrinsic learning motivation. When students find the content interesting and manageable, they will be more active in joining and completing HOTS-based tasks throughout the process.

Findings of the semi-structured interviews also revealed that limited reading comprehension capacity and complicated task instructions during presentations were the challenges faced by some students. These difficulties could partly impact on students' ability to complete HOTS-based tasks. In response, the study suggested simplifying task structures by designing separate individual ones for each cognitive

domain (analyzing, evaluating, and creating), as compared to combining them in demanding worksheets. Specifically, students must master reading comprehension and analyzing skills before being expected to evaluate or create independently. Therefore, offering scaffolded HOTS-based tasks in smaller segments would allow students to build foundational thinking skills step-by-step. Additionally, to support students' reading comprehension, the integration of simplified guiding questions along the reading texts is essential. This aligns with Grabe and Stoller (2011), who advocate for embedding text-based comprehension strategies to facilitate deeper understanding. Once students grasp the reading content, they can then be guided to identify topic sentences, supporting details, and relevant evidence, thereby preparing for the next tasks of evaluating and creating. As strongly agreed with the findings of Zarei and Haghgoo (2012) and Walker (2003), although critical thinking is trainable, it is complex and requires gradual practice over time. Therefore, along with opportunities for students to engage meaningfully with the learning materials, critical instructional strategies are also demanded. Therefore, while the scaffolding embedded in the two tasks was effective in building foundational competence, long-term critical thinking development still requires ongoing effort with thoughtful pedagogy.

5.4 Conclusion

Overall, the findings illustrated that students' engagement with HOTS-based tasks could foster their critical thinking skills, emphasizing the important role of the combination of TBLT as the scaffolding to build up students' thinking skills. They provided students with opportunities to break down information systematically (analyzing), to assess the validity and reliability of sources (evaluating), and to synthesize their understanding into coherent and innovative outputs (creating) for their oral presentations. Through both quantitative and qualitative data, students' various degrees of improvement in practicing and mastering analyzing, evaluating, and creating skills were demonstrated as outlined by Anderson & Krathwohl's (2001) taxonomy. The HOTS-based tasks in this study were particularly effective in instructing students through higher-order cognitive processes, enabling them to develop their critical thinking. In addition, the incorporation of scaffolded worksheets such as peer reviews and lecturer's feedback helped slower students make gradual progress (Zohar & Dori, 2003), while HOTS-based individual and group tasks challenged advanced students to practice and master their critical thinking capacities (Brookfield, 2012; Ellis, 2003). Despite the varied rates of improvement, the findings highlighted the need for long term learning to accommodate students' individual learning paths for their consistent

growth in both critical thinking skills and oral presentation performances. These findings have effectively reinforced the utilization of HOTS-based tasks for promoting not only critical thinking skills but also content quality and language use.

5.5 Implications

To ensure successful implementation of HOTS-based tasks in English Public Speaking courses, detailed implications were suggested for theory, pedagogy, and methodology.

5.5.1 Theoretical implications

The findings of this study contributed to the theoretical understanding of critical thinking development in tertiary English language education. Consistent with Davies (2011), Fahim and Masouleh (2012), and Tsui (2002), the results supported the view that language instruction at the university level should focus on cultivating critical thinking skills, not merely on transmitting information. The framework proposed in this study was based on Anderson and Krathwohl's (2001) revised Bloom's taxonomy and the principles of Task-Based Language Teaching (Ellis, 2003). By integrating HOTS-based tasks into the English Public Speaking context, the study demonstrated how analyzing, evaluating, and creating could be systematically taught through task design. This theoretical model supported the idea that structured, cognitively demanding tasks could help students develop both language and critical reasoning skills. The study added to the growing body of research that positions critical thinking enhancement in language teaching and learning, particularly in contexts where communication and argumentation are central to academic performance.

5.5.2 Pedagogical implications

5.5.2.1 For EFL students

To conduct HOTS-based tasks successfully in English Public Speaking courses for tertiary EFL students, they must actively engage with their roles by applying analyzing, evaluating, and creating skills, as outlined by Anderson and Krathwohl's (2001) taxonomy under the instruction of their lecturers in classes. Firstly, students should be encouraged to practice analyzing by breaking down speech topics into smaller, manageable components, identifying key ideas, arguments, and supporting evidence. This process involves initial critical thinking skills with the target to examine how these components interrelate to the general construct. Secondly, students must focus on evaluating the quality and reliability of the reading materials. This includes selecting credible sources, identifying potential biases, and ensuring the logical consistency of their arguments, as highlighted by Anderson and Krathwohl (2001) and

Ennis (2011). Finally, students are required to concentrate on creating, where they synthesize information and generate impactful speeches. The final step requires integrating diverse viewpoints and presenting arguments in innovative ways to engage their audience effectively. To achieve these goals, students should complete all the designed tasks and worksheets with great effort and carefully speech rehearsals. HOTS-based tasks in this case do not only support students' critical thinking but also build up their English proficiency overtime (Moon, 2008).

5.5.2.2 For lecturers of English

The findings of this study confirmed that critical thinking skills could be trained for tertiary students; however, this required the use of purposeful instructional consideration. In this research, critical thinking development was embedded into task design throughout the English Public Speaking course. Students were guided to apply analyzing, evaluating, and creating while completing individual and group tasks aligned with course objectives. Despite these promising outcomes, the study highlighted that critical thinking development was a gradual process, requiring extended time, repeated practice, and continuous feedback. Therefore, it is important to design a series of courses or modules that consistently incorporate critical thinking components rather than relying on a single course intervention. The way critical thinking is integrated into each course should be carefully adapted to match both the learning objectives and the developmental needs of the students. This reinforces the idea that task design must be intentionally and pedagogically aligned. Instructors play a key role in this process and should be prepared to cultivate critical thinking across a variety of teaching and learning contexts. Further guidance on this instructional role is discussed in the following section.

To successfully implement HOTS-based tasks in English Public Speaking courses, lecturers must take an active role in guiding students through the gradual development of analyzing, evaluating, and creating skills. In the analyzing phase, lecturers should design tasks that encourage students to deconstruct topics, identify key arguments, and explore connections among the sentences' functions. This might include structured brainstorming sessions or analytical frameworks that help students break down speech or content components. For evaluating, lecturers need to foster judgment by teaching students how to assess the reliability of their sources, scrutinize logical consistency, and detect potential biases in the reading materials' content. This can be achieved through personal criteria such as evidence reliability, argument coherence, and source credibility, aligning with Ennis's (2011) emphasis on systematic evaluation in critical thinking. Finally, in the creating phase, lecturers should

encourage students to synthesize ideas and construct original, compelling speeches. They can facilitate this by assigning tasks such as drafting speech outlines, integrating diverse perspectives to engage audiences. Collaborative activities, such as peer reviews and group presentations, can further enhance students' ability to innovate and communicate effectively (Brookfield, 2012). By incorporating scaffolded instruction, formative feedback, and designed HOTS-based tasks, lecturers can support students in developing their critical thinking skill and English Public Speaking performances.

5.5.3 Methodological implications

This study made a significant contribution to the growing body of research on critical thinking integration in English as a Foreign Language (EFL), particularly within the Vietnamese tertiary learning context. While previous research for both quantitative (Faravani & Taleb, 2020; Purnama & Nurdianingsih, 2019) and qualitative (Bahrudin, 2020; Swaran et al., 2020) provided evidence of critical thinking development, most studies relied heavily on pre-post research designs and have not examined the developmental process in-depth, especially in English Public Speaking contexts. The current study addressed this gap with the conduction of pre-experimental design supported by multiple data collection methods, including HOTS-based tasks, oral presentation rubric, portfolio, reflective journal, and semi-structured interviews. As recommended by theory of Cohen (2010), this triangulated approach allowed for both quantitative measurement of students' performance and qualitative insights into their learning experiences. Consequently, the study offered a comprehensive understanding of how a HOTS-integrated instructional package could enhance students' critical thinking, content quality, and language use in oral presentations. The findings also offered practical implications for Vietnamese EFL education, providing evidence-based suggestions for curriculum improvement and the pedagogical integration of Higher-Order Thinking Skills.

5.6 Limitations and recommendations for future research

Although the effectiveness of HOTS-based tasks in fostering critical thinking and enhancing English Public Speaking skills among Vietnamese tertiary students were provided, several limitations were acknowledged. First, this study mainly focused on a single institution, and a small sample size of 30 students limits the generalizability of the findings across broader educational contexts. Secondly, while the research emphasized critical thinking skills and English oral presentation development, it did not account for the role of students' language proficiency levels, language exposure outside the classroom, intrinsic or extrinsic learning motivation, which might

significantly influence their ability to engage with HOTS-based tasks. Finally, the study's scope was targeted to English Public Speaking skills in terms of content quality and language use, leaving other English language skills, such as reading, writing, and listening, and other subskills of public speaking unexplored. These limitations highlighted gaps for further research to build on the findings and provide a more understanding of HOTS-based task implementation in English language education across diverse contexts.

5.7 Summary

This chapter presented a comprehensive discussion of the research findings with a focus on the implementation of Higher-Order Thinking Skills (HOTS)-based tasks. It synthesized key conclusions regarding their impact on students' critical thinking abilities and English Public Speaking performance. Drawing from these insights, the chapter outlined pedagogical implications to enrich teaching practices and foster deeper learning outcomes. Practical recommendations were provided for students, lecturers, and administrators to support effective integration of HOTS in language learning contexts. Furthermore, the chapter acknowledged the study's limitations and concluded by proposing directions for future research to extend and deepen understanding in this area.