

The perceptions of tertiary students and lecturers regarding CLIL-based critical reading material employing interactive multimedia

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ABSTRACT

Content and Language Integrated Learning (CLIL), a methodology for teaching and learning content via a foreign language, has become a promising method for developing critical reading material and fostering students' analytical thinking and reasoning abilities in higher education. Numerous studies have examined the development of critical reading teaching materials, yet only some have focused on developing and implementing CLIL-based strategies in higher education. Therefore, this article explores the perceptions of English students and lecturers on implementing CLIL-based principles with interactive multimedia in developing critical reading material in higher education. The study collected data from students and teachers through questionnaires using a descriptive quantitative method. The closed-ended responses were analyzed by frequency and proportion, and compared between groups using the Mann-Whitney U test. Open-ended responses were categorized and analyzed through a matrix checklist to study a key variable or topic of public interest. The findings showed that most students believed that CLIL-based critical reading material using interactive multimedia enhanced their analytical thinking and reasoning abilities concerning the subject content. They also believed their learning outcomes would improve. All lecturers believed that the need for CLIL-based critical reading material employing the integration of interactive multimedia is essential, especially in an online learning setting. Furthermore, the lectures stated that engaging with critical reading material using interactive multimedia in the classroom increased the students' motivation, promoting interaction among students and developing essential logical and cognitive competencies. Overall, the student and lecturer groups corroborated the need to further implement CLIL-based critical reading material development by using interactive multimedia in higher education.

Keywords: CLIL principles; critical reading; interactive multimedia; material development

First Received:

1 November 2021

Revised:

26 April 2022

Accepted:

8 December 2022

Final Proof Received:

27 January 2023

Published:

31 January 2023

How to cite (in APA style):

Fitrawati, F., Syarif, H., Zaim, M., & Perrodin, D. D. (2023). The perceptions of tertiary students and lecturers regarding CLIL-based critical reading material employing interactive multimedia. *Indonesian Journal of Applied Linguistics*, 12(3), 598-611. <https://doi.org/10.17509/ijal.v12i3.36838>

INTRODUCTION

Reading should center on analytical processing, analyzing, assessing, and understanding data; it should not only be about acquiring knowledge (Kurland, 2010). Unfortunately, in some tertiary

education settings within developing countries, such as Indonesia, where English is taught as a foreign language, critical reading is often not a primary focus of higher education. Studies have examined

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the development of critical reading teaching materials globally (Banegas, 2016; Šulistová, 2013), yet few have focused on the need for appropriate critical reading strategies within Indonesia's higher education environment. The solution may lie in creating critical reading materials based on the Content and Language Integrated Learning (CLIL) methodology, which offers a focal point for encouraging critical thinking. The CLIL method emphasizes language skills and learning content that can stimulate the analytical thinking and reasoning abilities of students in higher education, as well as enhance the reading comprehension teaching materials and the critical reading learning experience (Hamidavi et al., 2016; Nurbaya & Rahayu, 2019; Zarobe & Zenotz, 2015).

Research has scrutinized learning objectives and student responses toward activities implemented in CLIL programs with Indonesian tertiary settings (Hapsari, 2016; Puspitasari, 2016; Rahmadani et al., 2019). These studies focused on the positive implications of CLIL principles in developing critical reading material; however, they overlooked the need for incorporating technology and interactive multimedia in our modern education arena. Limited research has found that although academics across Indonesia acknowledged the need for technologically proficient lecturers, a relatively limited number had infused technical competency into preparing critical reading material (Harsono, 2017; Pérez & Malagón, 2017; Somers & Llinares, 2018).

Therefore, this study would like to explore the perceptions within Indonesian higher education regarding CLIL-based critical reading materials that employ interactive multimedia in an ordinary course. By addressing the following questions, this analysis could offer insight into implementing the concept of CLIL principles in developing critical reading material with interactive multimedia integration within developing nations:

1. What are tertiary students' perceptions concerning the need for implementing CLIL-based critical reading material with interactive multimedia in an ordinary course?
2. What are lecturers' perceptions concerning the need for implementing CLIL-based critical reading material with interactive multimedia in an ordinary course?

Principles of Content and Language Integrated Learning (CLIL)

Content and Language Integrated Learning (CLIL) is a dual-focused educational methodology in which a foreign or second language is used in teaching content and language (Coyle et al., 2010). In CLIL, content and language are interwoven—even if the emphasis is greater on one more than the other at a

given time—teaching content from a curriculum subject is integrated with a foreign or second language (Lesca, 2012). The concept of CLIL is different from English Medium Instruction (EMI) and Content-Based Instruction (CBI), which were developed in the early 1980s and 1990s. The EMI and CBI approaches aim only for content mastery, with no specified language aims. At the same time, CLIL focuses on content and language, particularly in foreign language learning, as it acts as a vehicle for learning. Thus, teachers plan the content, the language, and the procedures by stating how content will be addressed so that it is meant for every learner, no matter their proficiency level. Moreover, CLIL advocates claim that it boosts linguistic proficiency and improves content acquaintance, cognitive skills, and creativity in learners of all abilities (Coyle et al., 2010; Fürst & Grin, 2017; Horvat et al., 2021).

Coyle (1999) early on asserted that the “4Cs Framework” should be considered when designing lessons and material employing the CLIL approach. The four main components of the structure are *Content, Communication, Cognition, and Culture*. Coyle (1999, 2005) explained that *Content* requires subject matter (i.e., themes and topics), skills development, understanding creation, and knowledge acquisition, and the content should be related to everyday life (Gondova, 2013). Students should learn through practice supported by theory rather than theory alone since there is a real relationship between the subject matter and daily life (Pokrivčáková, 2013). The content explains and highlights the topic, and the content or topics will be the reading selection from various disciplines. Finally, students will learn new terminologies and demonstrate their content through different test-taking methods.

According to Coyle (2005), *Communication* is based on the idea that language learning is supported by communication as a tool for communication; hence, language should be given the most significance. Communication focuses on the use of language while learning to use language. This focus can be seen in vocabulary use or word part recognition. Therefore, it is vital to develop classroom activities that encourage communication between individuals, groups of individuals, and groups within groups. For implementation to be successful, appropriate scaffolding needs to be at the core of the teaching-learning process.

According to Coyle (2005), higher-order thinking skills are involved in *Cognition*; hence in CLIL, cognition does not require teaching pupils content or having them memorize it. However, CLIL cognition requires a higher level of thinking and guides learners to develop ways of understanding language and content (Coyle, 2005). Cognition develops thinking skills that link concept formation (i.e., abstract and concrete),

understanding, and language. Here, the applications of critical reading skills are included, such as reviewing and organizing ideas, figuring out inferred meaning, and thinking critically (e.g., fact and opinion, author purposes, bias, and other critical reading skills).

Finally, Coyle (2005, 2011) explained that the *Culture* component helps students develop self-awareness and broaden their understanding of other cultures. It is recommendable to have students work with authentic materials to actualize the concept. Cultural differences help students select suitable language for better interaction during culture-related situations.

Critical Reading Material Development

Gagner et al. (1992) pointed out that most materials are content-based rather than learning objectives, and teachers and instructors can adapt the goals to the learning content. There is a need to develop teaching materials. Gagner et al. followed with the six characteristics which should be considered when developing teaching material: 1) the material must be relevant to the student's experiences and backgrounds, their target (outside the classroom), and their affective needs; 2) the material must contain the process of learning or discovery, problem-solving, and analysis, and develop specific strategies and skills; 3) the material should be authentic texts that target relevant linguistic aspects of the target language (critical reading, language function, vocabulary, etc.) by integrating the four macro language skills (listening, speaking, reading, and writing); 4) the material must focus on cross-cultural aspects and develop critical social awareness; 5) the material must aim for real-world activities (tasks), varying roles and groupings, and actualizing activities and objectives; and finally, 6) the material must be authentic (in the form of text or natural objects) and varied (printed, visual, audio, etc.).

Interactive Multimedia

Early on, Kalyuga (2009) stated that teachers must create an effective learning environment by using words and pictures to promote the learning processes in the context of teaching and learning. Interactive multimedia integrates media in learning through text, graphics, videos, clickable images, self-assessment questions, widgets, animation, and sound to present and convey information (Costello, 2016; Ivers & Barron, 2010; Smaldino et al., 2014).

Mutlu-Bayraktar et al. (2019) alluded that 'multimedia learning' in classroom subject matter presentations should involve three or more media using a computer, namely speech or sound, images or diagrams, animation, photos or videos, and text in the form of writing. In addition, interactive multimedia should allow the user to determine their steps using the media by clicking on the available

link or menu (Abdulrahman et al., 2020; Kapi et al., 2017). Implementing interactive multimedia learning can facilitate a meaningful learning experience. These encounters can be achieved if the learning material is delivered through various technological learning tools and interactivity in student learning activities.

Hannafin and Peck (1988) suggested a theoretical basis for designing multimedia for English language teaching materials. First, the material to be developed must have contiguity; for instance, when a video is shown, students should be able to respond immediately by discussing the content of the video together. Second, a video displayed as the opening of the material should apply the principle of orientation and recall, namely the existence of initial knowledge that must be called to activate memory. Third, the exercises should be complemented directly with feedback regarding applying the principle of feedback and reinforcement, where students get immediate feedback or support when they do the exercises. They can tell right away whether their answer is correct or not. If the answer is incorrect, they will be given another chance to do the exercise until their answer is correct. Fourth, the teaching material should complement a tutorial where students can reach a new or renewed understanding of the material independently outside the classroom through the implementation of the principle of repetition and can fulfill the principle of individualization.

Therefore, this study will focus on examining the perceptions of students and lecturers concerning interactive multimedia in the form of an e-book developed for the Research Method class to enhance critical reading materials.

METHOD

Research Design

Although studies have examined the development of critical reading teaching materials in other developing countries (Banegas, 2016; Šulistová, 2013), few studies have focused on the need for appropriate critical reading strategies within Indonesia's higher education environment. The present study, therefore, used a descriptive quantitative method to ascertain the perceptions of students and lecturers regarding the need to develop critical reading material based on CLIL principles using interactive multimedia in an Indonesian higher education context (Creswell & Creswell, 2017). Fittingly, Gay et al. (2018) asserted that descriptive research allows researchers to describe one or more variables by comparing or connecting them with other variables by emphasizing current conditions, investigating relations, and analyzing cause-effect phenomena.

Context and Participants

The site for this analysis was a Research Method class in the English Language Education Program (ELEP) at a state university in Padang, Indonesia. The Research Method class was chosen for two reasons. First, English was the only language of instruction to convey learning, even though the ELEP students were non-native English speakers. Second, the CLIL learning approach implemented within this class was believed to successfully enhance the learning of English as the target language and subject content and develop the students' positive attitude towards themselves as language learners (Marsh & Langé, 2000).

Since ELEP students were still participating in virtual learning when this analysis was conducted, the questionnaires were distributed via Google Forms to all 150 ELEP students who had taken the Research Method course of the 2019 academic year. Of the 150 questionnaires, only 110 were returned. As well, six lecturers within the ELEP participated in the undertaking. Their involvement in this analysis was expected to provide perceptions from an academic point of view regarding the CLIL-based principles adopted in critical reading material. The same above procedure was applied to this participant group.

Data Collection and Instrument

To gather data, questionnaires were delivered using Google Forms to student and instructor participant groups. This virtual delivery method was determined to be the most efficient strategy due to its simplicity of deployment and the ease with which respondents can complete it on their smartphones. There were both closed and open questions on the survey. The questions were created using a requirements analysis, principles from CLIL, and the integration of interactive multimedia in creating critical reading materials. The answers to the closed-ended questions were Not Important, Less Important, Important, or Very important.

Data analysis

The data were gathered in two ways: first, closed-ended responses were examined by determining the frequency and percentage, then by determining the mean (M), and finally by calculating the standard deviation (SD). The perceptions of both the student participant (SP) and lecturer participant (LP) groups were compared using the Mann-Whitney U test. Second, themes were used to group open-ended responses using a Miles et al. (2019) checklist matrix approach for evaluating field data on a significant variable or public domain of interest.

FINDINGS AND DISCUSSION

The results from the closed-ended questions, interspersed with excerpts from the open-ended

responses, were classified into two broad categories: 1) the students' perceptions regarding the need for CLIL-based critical reading material utilizing interactive multimedia and 2) the lecturers' perceptions regarding the same. Each category was further divided into two sections: a) description, analysis, and discussion of responses of student and lecturer participants to closed-ended questions, and b) description, analysis, and discussion of responses of student and lecturer participants to open-ended questions.

Student Perceptions of CLIL-Based Critical Reading Material Utilizing Interactive Multimedia

Student Perceptions Seen from Closed-Ended Questions

In general, most of the students (92%) perceived that critical reading material should be in the form of content of various disciplines, very important (10%), and important (82%). The highest number of positive responses was obtained from five of the 15 statements (Nos. 4, 6, 7, 8, and 9). This pattern revealed a significant connection between these top five statements. The table in Appendix A provides a thorough explanation and discussion of the associations among the statements.

Statement 1 was perceived as important by more than 80% of students and very important by 10%. This statement indicates that students agreed to the concept of CLIL being implemented to develop critical reading material. The statement showed that critical reading material should be in the form of content from various disciplines. Marsh (2012) explained that CLIL is material-centered learning (content) approach as well as language (language) used in learning, as well as a method of two-centered learning, namely, the language used to learn science and as a learning material. This result can be interpreted that learning language by adopting the concept of CLIL principles can make the students master the content-specific subject and, at the same time, the aspects of the language, as well as be able to use language as a means of communication (Nurbaya & Rahayu, 2019). Statement 1 was also supported by Statement 4, which was perceived as important by more than half of the students (62%). This statement agrees that CLIL-based critical reading material encourages learners to use language while learning to use language itself.

More than half of the students (55%) perceived Statement 4 as very important, while slightly less than half (41%) of students perceived Statement 4 as important. This statement was the most preferred, indicating that all students agreed that critical reading material could stimulate the learning to be more extensive and have a varied vocabulary. Gierlinger and Wagner (2016) and Reynaert (2019) found that CLIL classrooms could benefit learners

in their acquisition of vocabulary in the target language. Implicitly, the highest need for integrating the CLIL principle into critical reading material can be seen in the visible growth in receptive and productive vocabulary (Karabassova, 2018). Other researchers also showed that CLIL is well implemented in the language classroom to improve students' vocabulary mastery. Jafarigozar et al. (2022) researched the implementation of CLIL in Iranian students. They found that CLIL-based learning improved receptive and productive vocabulary growth.

The second highest preferred statement was Statement 7. Half (50%) of students perceived Statement 7 as very important, and less than half (48%) perceived it as important, as they felt that critical reading material should develop students thinking and reasoning skills. Bandyopadhyay and Szostek (2018) noted that critical thinking comprises a commitment to utilizing reason in creating a perspective and that students must express their judgment and appraisal of what they read. Cruz (2021) likewise mentioned that developing critical and creative thinking abilities in CLIL demonstrates that critical thinking can be achieved with collaboration and global and sustainable awareness. This idea demonstrated how well the CLIL approach could be used to teach the subject of critical reading. Following this, Statements 8 and 9 aligned with the previous statement. These two statements revealed that students should activate their critical thinking regarding content and language use. Lightbown and Spada (2013) indicated that a CLIL environment could help to foster the negotiation of meaning. As a result, students will engage higher-order thinking skills to analyze, synthesize, discuss, evaluate, and understand content using a second or foreign language (Vega & Moscoso, 2019).

Furthermore, Statements 14 and 15 accommodate students' needs in the interactive multimedia platform used in critical reading class. Statement 15 revealed that just under half (45%) of the students agreed that assisting critical reading material with interactive multimedia forms is necessary. The forms of interactive multimedia can be seen in Statement 14. From Statement 14, most students (91%) chose to use the interactive e-book as the digital platform of reading material, as an e-book transforms a conventional book into a digital version (Oyaid & Alshaya, 2019). There are some reasons to integrate e-books as learning media. First, e-books are digital book formats that make the users, the e-books themselves, and the environment (device) interact with each other digitally because they contain hypermedia and interactive elements which are put together simultaneously. Accordingly, the readers will get an e-reading experience, including cognitive, sensorial, and physical interactions (Bozkurt et al., 2016). Second, interactive e-books require the users' active

participation in handling the interactive e-books and their elements. Last, the materials in the interactive e-book are supported by interactive content, such as videos, clickable images, self-assessment questions, and widgets.

Following is a summary of the findings from the above-described research. The total rate of disapproval responses on average was less than 8% ($M = 8.8$), compared to the average rate of approval responses which, in total, is almost ten times higher ($M = 83.6$). The data demonstrated that most students perceived that implementing CLIL-based using interactive multimedia in developing critical reading material was, by all means, necessary.

Student Perceptions Seen from Open-Ended Questions

Student responses to open-ended questions regarding their perceptions of the need to implement CLIL-based using interactive multimedia in developing critical reading material revealed several vital points.

The Need for Different Contents or Topics

The majority of free-form responses from students highlighted the importance and benefits of implementing the CLIL principle in critical reading material. One of the principles is varying the material from different content of the topic. Most believed that changing the material made students more interested and motivated in learning the subject, as evidenced by the following excerpts.

Excerpt 1 The material should be more varied from up-to-date news. (SP2)

Excerpt 2 I feel kind of bored if the material is all about answering TOEFL and EITLS questions. It's better if we can read different readings from different genres like entertainment, history, or news. (SP98)

As exemplified by Excerpt 1 and Excerpt 2, students believed there was a potential to implement different content to improve the students' interest in reading and learning critically in the future. As Coyle (1999, 2005) stated, content requires subject matter (i.e., themes and topics), skills development, understanding creation, and knowledge acquisition. According to Gondova (2013), the subject matter should apply to daily life. Students should learn through practice supported by theory rather than theory alone since there is a real relationship between the subject matter and everyday life (Pokrivčáková, 2013). The content explains and highlights the topics, as the content or topics will be a selection of reading from a wide range of disciplines. Furthermore, students will learn new terminologies and demonstrate their content through various test-taking methods.

The Need for Teaching Materials for Independent Study

As seen in the following example, some students also provided more critical suggestions on developing the critical reading material.

Excerpt 3 I think all the materials in critical reading are good because, at the end of the materials, there are always questions to deepen understanding of the materials that have been read. My personal hope is that there should be independent exercises that we can do at home, and we can get feedback immediately after that. (SP 17)

The findings were in line with Mudjiman (2008), who found that the learners set the purpose of independent learning, which is to achieve goals in addition to the exercises carried out in the learning sessions in the classroom. Excerpt 3 shows the importance of teaching materials that enable students to learn independently. The need to coach students in critical reading skills and additional teaching materials with needed feedback can be done at home on each question. In agreement, Wina (2009) mentioned several benefits students could get if they have independent learning habits. First, it is possible to develop optimal student learning flexibility; next, it allows learning interactions from anywhere and anytime. And last, it is reaching out to students in a broader scope of learning.

The Need for Direct Feedback to Students

In addition to affirming the existence of exercises for independent study, students should be provided feedback on what has been learned from the materials. As seen in the following excerpts, this statement aimed at students to be directed in understanding the teaching material given.

Excerpt 5 Reading material is best delivered in an interesting way, and every meeting is given feedback because so far, we have only been given material and asked to do a lot of assignments without feedback. (SP 26)

Excerpt 6 We recommend that after the assignments are collected, the lecturer gives feedback to students so that students know what their mistakes are. (SP 35)

Excerpts 5 and 6 explain that students need feedback on their learning materials. Good feedback is intrinsically more than a statement of what is wrong or right with a particular piece of work. It provides students an insight into how to improve in areas where they need to improve and an understanding of how the positive aspects of their work might be transferable to different contexts. To support this argument, Zhang and Hyland (2018) concurred that teachers who regularly give feedback

to the students regarding the accuracy and the appropriateness of their work have higher-achievement students. The feedback resulted in increasing not only students' achievement but also students' motivation.

The Need for Interactive Multimedia

Besides the exercises and feedback, other students emphasized the aspect of interactive multimedia used in critical reading material development. This clarity can be seen in these excerpts.

Excerpt 7 I expect critical reading material to be given using interactive multimedia so students are more interested and active in learning. (SP 21)

Excerpt 8 My suggestion is that the lecturer should provide material in the form of video or audio. (SP 5)

These suggestions indicated the students' need for the interactive use of multimedia in critical reading teaching materials. In Excerpts 7 and 8, students explained that lecturers usually use teaching materials like printouts, often making students bored when reading them. Interactive digital multimedia integrates text, graphics, video, and sound to present and convey user-controlled information (Ivers & Barron, 2010; Mayer, 2014; Smaldino et al., 2014). Digital teaching materials can display some material using interactive learning media (Sugianto et al., 2013). Sari (2018) found that interactive multimedia effectively taught reading, significantly improving the students' interest and reading skills. Multimedia can address cognitive skills: focusing, information gathering, memorizing, organizing, analyzing, generating, and evaluating (Ampa et al., 2013; Ivers & Baron, 2010). Multimedia allows the students to focus on the course content, promote active learning, engage students in higher-order thinking skills, and represent ideas through various media.

Lecturers' Perceptions of CLIL-Based Critical Reading Material Utilizing Interactive Multimedia

Lecturers' Perceptions Seen from Closed-Ended Questions

The lecturers received the same questionnaire as the student group. Like how student replies were reviewed, the lecturer's responses were also analyzed, using themes for open-ended questions and two methods to determine the frequency and percentage of answers to closed-ended questions.

However, unlike the students' responses, ranging from very important to important, lecturers' responses are only found in two categories: very important and important. Table 2 shows that 67% of lecturers perceived implementing CLIL principles in

critical reading material as important to very important ($M = 2.67$), and 83% perceived explaining and highlighting the topics in critical reading material as important to very important. None of them perceived any of the 15 statements are less important or not important. Another notable aspect is the amount of very important responses, as 60% were higher than the number of important answers (40%). According to the lecturers, these trends implied that implementing CLIL principles in critical reading material was extremely important. Similarly, according to Philipp (2013), technology is crucial in education to enhance learning and collaboration, curriculum creation, and staff development.

Table in APPENDIX B demonstrates the responses from the lecturers regarding the importance of CLIL principles in developing critical

reading material. Unlike the varied student responses, the responses from the lecturers were substantially uniform. In other words, all lecturers had similar perceptions of the teachers' need for CLIL principles to be implemented in developing critical reading material. There are 13 statements sharing the same percentage (100%) of importance. This data was closely related to each statement's mean (M) and standard deviation (SD). The table shows that each statement's mean and standard deviation are comparable. Tables 1 and 2 provide additional explanations of how the mean rank and test statistics were calculated.

Table 2 shows the Asymp. Sig. (.006) is higher than α (.005). This finding indicates no significant difference between lecturers' perceptions regarding the need for CLIL-based critical reading material assisted by interactive multimedia.

Table 1
Mean rank of all participant responses to closed-ended questions

	Ranks			
	Participants	N	Mean Rank	Sum of Ranks
Mean-rank	Lecturers	6	95.00	570.00
	Students	110	56.51	6216.00
	Total	116		

Table 2
Test statistics of all participant responses to closed-ended questions

Test Statistics ^a	
	Mean Rank
Mann-Whitney U	111.00
Wilcoxon W	6216.00
Z	-2.742
Asymp. Sig. (2-tailed)	.006

Note: ^a Grouping variable: all participants

Lecturers' perceptions seen from open-ended questions

The lecturer participants responded to an open-ended question about integrating CLIL principles by utilizing interactive multimedia to create critical reading material. Their replies were grouped into the following points.

The Need for Vocabulary Strategy Mastery in Critical Reading Material

Excerpt 9 I think we need to focus on strategies to increase student's vocabulary, but I don't know if it is included in one of the topics above. (LP1)

This lecturer (LP1) stated that students must be taught vocabulary mastery strategies when participating in critical reading. It is undeniable that one of the fundamental problems of reading is the limited vocabulary possessed by students, so it is difficult for students to understand the contents of reading (Dini & Fitrawati, 2020). Other studies supported the positive impact of CLIL on content

and L2 vocabulary development (Baten et al., 2020; Hughes & Madrid, 2019). They found that CLIL provides content and L2 vocabulary development and increases opportunities for exposing learners to L2 vocabulary knowledge in meaningful situations. Early on, Schmitt and Schmitt (1995) found that attaching words to their surroundings increases the likelihood of comprehension of the text. These strategies were considered adequate for that age group and the skill involved.

Similar to this, Chamot (2001) addressed employing task-based learning methodologies and emphasizing how students can use their resources (i.e., "apply what you know") to learn most efficiently. By doing this, students emphasize their ownership of their learning by concentrating on their resources. Some of these consist of the following:

- 1) Activate prior knowledge; students use knowledge about a particular subject to better comprehend new information.

- 2) Make predictions; students decide what to anticipate from a task depending on their prior knowledge and available facts.
- 3) Inferring from the context, students infer the meaning of a text based on the details it provides, such as images, headlines, etc.
- 4) Evaluate the text's organization; students can better understand the text's arrangement by studying the text's arrangement.

The Needs of Students Reading Interests and Today's Issue Materials

Lecturers 3 (LP3) and 4 (LP4) addressed the need to update reading material based on students' interests and today's issues while implementing CLIL principles in developing critical reading material. This data is demonstrated in Excerpts 10 and 11.

Excerpt 10 It is a good idea to let the students discuss the text based on their interests and insights related to their preferences in daily life. (LP3)

Excerpt 11 I suggest updating reading material that is more relevant to today's issues or significant history in shaping the world today (LP4)

Lecturers LP3 and LP4 agreed to provide reading material from different sources. They also believed that good reading material is what students are interested in the most. This realization could mean that although it might be challenging to provide CLIL-related teaching materials, critical reading lecturers are eager to implement CLIL in their classes and have the confidence to adapt or adopt any available textbooks and resources. English teachers believed they could adjust or adopt available books, materials, and resources. They were aware of doing so and should correspond and consider learners' needs and learning process.

The Need for Critical Reading Material for Online Learning

Lecturer 6 (LP6) was concerned with designing critical reading material for online education, as shown in Excerpt 12.

Excerpt 12 I also suggest designing critical reading material to accommodate online learning interactive media. (LP6)

Due to the pandemic, the teaching and learning process was conducted online. It was assumed that online-based instructions were covered 'wherever' and 'whenever' the learning situation was feasible. Furthermore, online learning complements a broader classification of learning expansion, which includes earlier technologies such as correspondence courses, educational television, and video conferencing (U.S.

Department of Education, 2010). One lecturer (L6) suggested providing critical reading material via interactive multimedia in film, video, short story, or online learning materials to support online learning. This kind of teaching material is attractive and fun to learn. Li (2014) asserted that multimedia has an interactivity feature that helps make learning more fun and enjoyable. For example, students can stimulate their background knowledge of the text by watching videos and documentaries, playing games and quizzes, or looking at interesting pictures while reading the text. By using those interactive features, students find the learning engaging and interesting.

Modern lecturers must be able to analyze, modify, and create materials to ensure that the learners and the materials they use are compatible (Morrison et al., 2019). This conclusion is especially true in CLIL, as there are few ready-made materials, and all CLIL teachers must become material designers. Lecturers can choose the most appropriate approach to organizing information and introducing new themes and vocabulary items when creating their teaching materials. Finally, it is worth mentioning that by doing online activities and quizzes in the classroom, the students feel motivated toward their learning process.

When contrasting the responses of teacher participants with those of lecturer participants to the open-ended question, there were some similarities and contrasts. Despite a relatively small percentage of teachers responding negatively, it can be said that both groups share a comparable understanding of the significance of using CLIL concepts when creating critical reading materials. Both groups also feel that before interactive multimedia was used to support reading critically in Research Method class, students were less enthusiastic and tended to be bored. Most students think it is better if the reading material is in video or online learning material. Interactive multimedia material can attract students to be more active in learning; it is fun for them. They also suggested that lecturers should be able to explain critical reading material.

However, both groups need to be in higher agreement on one point. While students highlighted the benefits of CLIL principles in developing critical reading material to improve students' critical thinking skills, lecturers showed an indication of doubtfulness about implementing interactive multimedia in critical reading materials. Thus, the lecturer participants strongly recommended the online learning material in cooperating online learning mode. Online learning enhances the learning process and better meets each learner's needs. Students may study at their own pace without worrying about catching up to those already learning something. Moreover, students can have a meaningful learning experience by gathering enough information online (Tareen & Haand, 2020).

CONCLUSION

Almost all results related to implementing CLIL principles in critical reading showed positive outcomes. They promised the improved quality of students' critical thinking and reasoning despite problems and challenges teachers encountered during its implementation. Most students and lecturers believe there is a potential good effect of implementing CLIL principles in developing critical reading material to facilitate students' comprehension of the subject they learn. In addition, understanding and identifying the students' responses are crucial in creating exciting teaching material. Students need teaching materials suitable for their current conditions, interest, and preferences. They need more exercises rather than just an explanation of the theories. They also need direct feedback after learning particular topics or subjects to make them understand the material better. Therefore, lecturers should design and provide interactive multimedia to overcome students' needs. The interactive e-book used for reading the content subject allows learning delivery interestingly. The learning materials have readings and interactive features that allow students to interact independently with the presented topics.

The nature of the CLIL approach was beneficial as it was implemented in the Research Method class with non-native English ELEP students. The finding is in line with Chamot (2018) that a CLIL environment is one where non-native students learn English as a target or foreign language and also use English in an academic setting within a globalized international context. In other words, the language used as an instrument is the one the students only hear and use in the classroom. However, based on this study's results, CLIL principles can be applied to non-English subjects in the English department, where English is only the language of instruction to convey learning. Therefore, the results of this needs analysis may contribute to those interested in developing a teaching and learning model for a critical reading class or other subjects by providing information on previous and current similar research.

Future researchers can investigate the evaluation of the teaching materials currently being used by the lecturers and compare them with the results of the needs of lecturers and teachers on CLIL-based teaching materials so that an overview of the design of teaching materials that will be developed is obtained. Another aspect of the study that might be necessary is investigating the impact of implementing CLIL principles on motivation and learning strategies.

ACKNOWLEDGEMENTS

We appreciate the research grant provided by the Ministry of Education, Culture, Research, and

Technology (formerly the Minister of Research and Higher Education) for funding this work. We are also appreciative of the participants in this study.

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APPENDICES

Appendix A

Student responses to closed-ended questions

No	Statements	Responses				M	SD
		Not Important	Less Important	Important	Very important		
1	Critical Reading material should be in the form of content from various disciplines	1% (1)	7% (8)	82% (90)	10% (11)	3.01	0.459
2	Content should explain and highlight the topics in Critical Reading.	0% (0)	4% (4)	65% (72)	31% (34)	3.27	0.523
3	Those contents are selected from various selections of reading texts	1% (1)	6% (7)	70% (77)	23% (25)	3.15	0.556
4	Critical Reading materials should try to carry the learners to the use of language to learn while learning to use language.	0% (0)	5% (5)	62% (68)	34% (37)	3.29	0.548
5	Critical Reading material can build learners' confidence in learning the target language	1% (1)	5% (6)	64% (70)	30% (33)	3.23	0.585
6	Critical Reading material can stimulate learning to be more extensive and have a varied vocabulary.	0% (0)	5% (5)	41% (45)	55% (60)	3.50	0.587
7	Critical Reading materials should develop students' thinking and reasoning skills.	0% (0)	2% (2)	48% (53)	50% (55)	3.48	0.537
8	Critical Reading material can develop students' understanding of the Content and Language they learn	0% (0)	4% (4)	60% (66)	36% (40)	3.33	0.544
9	Critical Reading material should develop students' critical thinking related to Content and Language use.	0% (0)	2% (2)	65% (72)	33% (36)	3.31	0.502
10	Critical Reading materials should bring the culture that uses the language.	2% (2)	25% (27)	59% (65)	15% (16)	2.86	0.670
11	The exercises should be contextual and communicative.	2% (2)	2% (2)	59% (65)	37% (41)	3.32	0.605
12	Critical Reading materials should be opened with video, short story, film, audio record, or documentary clip	1% (1)	19% (21)	52% (57)	28% (31)	3.07	0.713
13	Video, short story, film, Audio record, or documentary clip should be discussed	2% (2)	15% (16)	55% (61)	28% (31)	3.10	0.703
14	The Critical Reading material presented is in the form of an interactive digital e-book	4% (4)	15% (17)	53% (58)	28% (31)	3.05	0.764
15	Critical Reading material presented is in the form of interactive multimedia	13% (13)	31% (35)	41% (45)	15% (17)	2.60	0.890

Note: Presented by percentage and frequency (in brackets); *M* = mean; *SD* = standard deviation

APPENDIX B

Lecturer responses to closed-ended questions

No	Statements	Responses Degree				M	SD
		Not Important	Less Important	Important	Very important		
1	Critical Reading material should be in the form of content from various disciplines	17% (1)	17% (1)	50% (3)	17% (1)	2.67	1.033
2	Content should explain and highlight the topics in Critical Reading.	0% (0)	17% (1)	50% (3)	33% (2)	3.17	0.753
3	Those contents are selected from various selection of reading texts	0% (0)	0% (0)	33% (2)	67% (4)	3.67	0.516
4	Critical Reading materials should try to carry the learners to the use of language to learn while learning to use language.	0% (0)	0% (0)	33% (2)	67% (4)	3.67	0.516
5	Critical Reading material can build learners' confidence in learning the target language	0% (0)	0% (0)	33% (2)	67% (4)	3.67	0.516
6	Critical Reading material can stimulate learning to be more extensive and have a varied vocabulary.	0% (0)	0% (0)	33% (2)	67% (4)	3.67	0.516
7	Critical Reading materials should develop students thinking and reasoning skills.	0% (0)	0% (0)	33% (2)	67% (4)	3.67	0.516
8	Critical Reading material can develop students' understanding of the Content and Language they learn	0% (0)	0% (0)	50% (3)	50% (3)	3.50	0.548
9	Critical Reading material should develop students' critical thinking related to Content and Language use.	0% (0)	0% (0)	33% (2)	67% (4)	3.67	0.516
10	Critical Reading materials should bring the culture that uses the language.	0% (0)	0% (0)	33% (2)	67% (4)	3.67	0.516
11	The exercises should be contextual and communicative.	0% (0)	0% (0)	67% (4)	33% (2)	3.33	0.516
12	Critical Reading materials should be opened with video, short story, film, audio record, or documentary clip	0% (0)	0% (0)	50% (3)	50% (3)	3.50	0.548
13	Video, short story, film, audio record, or documentary clip should be discussed	0% (0)	0% (0)	17% (1)	83% (5)	3.83	0.408
14	The Critical Reading material presented is in the form of an interactive digital e-book	33% (2)	50% (3)	17% (1)	0% (0)	1.83	0.753
15	Critical Reading material presented is in the form of interactive multimedia	0% (0)	50% (3)	17% (1)	33% (2)	2.83	0.983

Note: Presented by percentage and frequency (in brackets); *M* = mean; *SD* = standard deviation