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**RESEARCH ARTICLE**

**Promoting Critical Thinking Ability for High School Students through Debating Activities**

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**ABSTRACT**

Nowadays, critical thinking ability is one of the most important skills in the 21st century; however, not many high school students have a good critical thinking ability in English. Therefore, the aim of the research is to improve the critical thinking ability of high school students by organizing activities for students to debate in English. The specific objectives are to investigate the current situation of critical thinking ability among high school students as well as organize activities for students to debate and then evaluate the impacts of debating activities on their critical thinking ability. To conduct the study, a mixed-method research design, which combines qualitative methods and quantitative methods, was used along with the survey. There was 16 grade 10 students from CTN Debate Club at Thai Nguyen Specialized High School, Vietnam, who volunteered to take part in the research. All of these students were required to take part in speaking pre-test and post-test as well as pre and post-questionnaire about their opinions of using debating activities. The results show that using debating activities played a significant role in improving and enhancing the critical thinking ability of high school students. Students' feedback concerning the use of debating activities are, in general, also quite optimistic. Besides, the research proposes some suggestions for minimizing the drawbacks of using debating activities to enhance the potentiality of this method and make it more interesting, meaningful and effective.

**KEYWORDS**

Critical Thinking, Debating activities, Elements of debating, Debating formats, Assessment rubric for critical thinking

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**1. Introduction**

Nowadays, critical thinking ability is one of the most important skills in the 21st century. According to Warnick, B., and Inch, E., critical thinking is defined as the ability to analyze problems or circumstances, integrate all available information, provide solutions or assumptions, and confirm your position (1994). Critical thinking, according to Johnson, Elaine B. (2010), is an ordered and clear process that is employed in mental activities like problem-solving, decision making, examining assumptions, and scientific discovery. In short, the ability to think critically is a necessary skill for effective communication, further education, and success in a competitive environment. The researcher believes that critical thinking is superior to thinking based on logical reason when students can open their minds, evaluate situations, and find the background to reach a judgment or conclusion through active control, which is rational, reflective, responsible and competent.

However, not everyone has a good critical thinking ability, especially among high school students, because it requires the learners to convince others people or decide whether the information is good or bad, true or false. It is a fact that many students still think low and are lazy to seek out information to expand their knowledge. Therefore, 99% of teachers agree that strengthening critical thinking abilities is a very important or indispensable goal for education, according to Arum, R., and Roska, J. (2011).

In fact, CTN Debate Club is the first as well as the only club in Thai Nguyen City, Vietnam, that organizes and trains the local high school students, especially students at Thai Nguyen Specialized High School, in debate skills through debate meetings in Vietnamese; However, having worked with some students from CTN Debate Club at Thai Nguyen Specialized High School, the researchers found that their critical thinking ability in Vietnamese is pretty great, but they do not have many opportunities to enhance their critical thinking skills in the English class as well as their club meetings. Although the learners sometimes take part

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in debating competitions organized by their high school, they are still confused when debating in English. Particularly, they do not know how to identify, analyze, and evaluate statements or information in debating progress. As a result, the students can not consider the issues in different aspects and give the reasons or evidence to protect their opinion logically as well as persuade other people.

There are many ways to develop critical thinking ability for students, one of them is through debating activities. Students are supposed to be open-minded individuals who can strengthen their critical thinking skills and expand their knowledge through debate activities. The speakers took a more active position in the discourse and attempted to understand and make decisions in a tough situations, according to Malmir, A., and Shoorcheh, S. (2012). Indeed, whenever people understand what they require in a rational and reflective manner, they must work diligently to discover an acceptable solution to complex problems and study the methods and conditions for testing scientific theories. As a result, students' critical thinking skills can be considerably enhanced by using and applying debate activities.

Therefore, this study aims to provide a method for students to foster their critical thinking ability. The specific objectives are to investigate the current situation of critical thinking ability among high school students from the CTN Debate Club at Thai Nguyen Specialized High School, organize debate activities for students, and then assess the effects of debating activities on high school students critical thinking ability.

## **2. Literature Review**

### **2.1. Key concepts**

#### **2.1.1 Critical Thinking**

Critical thinking is a clear, organized process involved in mental activities such as problem-solving, decision-making, persuasion, analyzing assumptions, and scientific inquiry, according to Johnson, E. (2002), as well as the ability to reason in a systematic process that allows students to formulate and evaluate their own beliefs and claims. According to Moon, J. (2008), critical thinking is the ability to engage with complicated concepts in a way that allows a person to effectively give evidence to support a reasonable judgment. The context will be taken into account in the evidence and, as a result, in the judgement.

Furthermore, when students can be open-minded, investigate situations, and find the background to make a judgment or conclusion using active control, which is rational, reflective, responsible, and competent, the researchers believe that critical thinking is preferable to logical reasoning.

#### **2.1.2 Debating activities**

Debating activity, according to Dale, Paulette, and James C Wolf (2000), is a speaking situation in which opposing points of view are presented, discussed, and supported by reasons, evidence, and refutation. As a result, students' critical thinking abilities are put to the test in debates to see if they can smoothly explain their beliefs or if they have difficulties delivering their ideas based on their point of view. He also said that having the option to discuss can assist with active learning. According to the researchers, the students' roles ensure that they have a core understanding of the topic as well as diverse points of view to support their case.

#### **2.1.3 Elements of debating**

According to Fernandes Arung (2016), there are six points to argue. The first is motion, which is also the most crucial aspect of debating. The issue of a debate is referred to as a motion. Both the positive and negative teams should debate the motion's topic, which should be disputed and not biased or beneficial to one side. A motion often starts with some phrases such as "this house" (TH), "this house believes that (THBT)", "this house would" (THW), and "this house regrets" (THR). Second, the debaters must concentrate on Definition. In other words, students should be aware of the current topic in society because that is what debaters will debate. Another point worth mentioning is the theme line, which is what a team must prove and is also the primary basis for attacking the opponent's case. The following one is an Argument in which the debaters elaborate on the motion. This feature also serves as a thought fragment to support the theme line. The rebuttal is another important aspect of a debate, and it refers to the presenting of information and argument intended to undercut or undermine an opponent's point. Finally, sum-up/closing, which is the debaters' conclusion at the conclusion of the debate. One debater will be the final speaker, and he or she will offer a summary of what transpired during the debate, as well as a conclusion about their team's strengths and weaknesses.

#### **2.1.4 Debating activities and Critical Thinking**

According to Scott, S. (2008), critical thinking abilities are cultivated at all levels of the debating process. Students must gather appropriate evidence of support while thinking critically in order to present a compelling argument when preparing for rebuttals. Based on Yang, C. H., & Rusli, E. (2012); Munakata, M. (2010); and Omelicheva, M. Y. (2012), students also needed to learn how to use evidence to support their arguments and opinions (2007). According to Doody, O., and Condon, M. (2012), debating activities encourage students to use critical thinking skills such as defining the problem, evaluating the reliability of resources, identifying

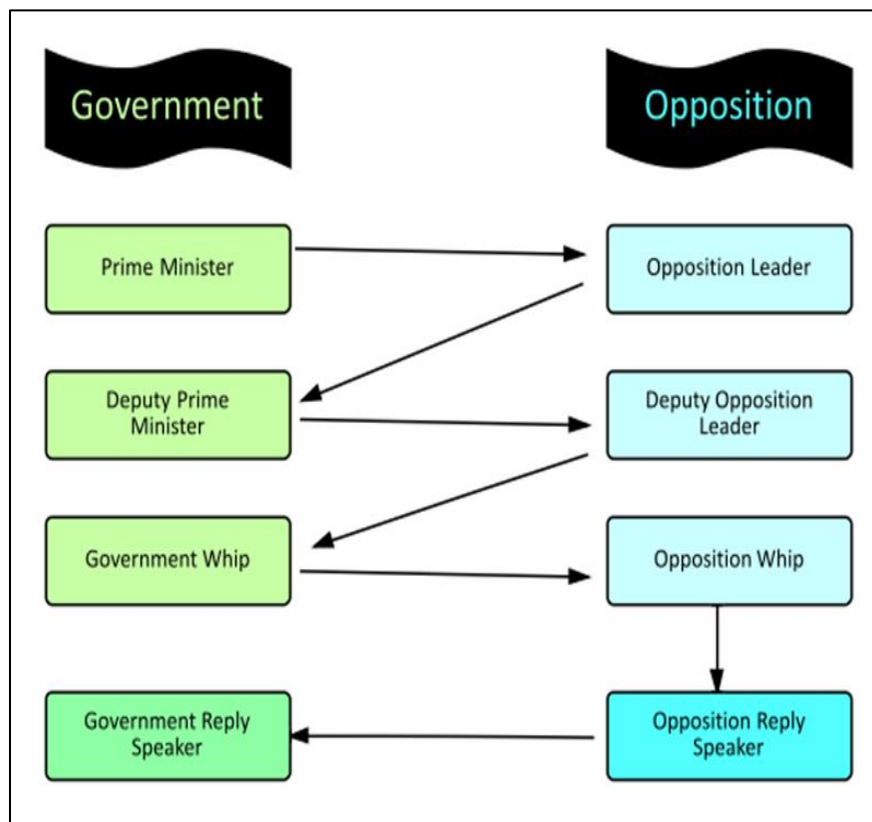
and challenging assumptions, recognizing contradictions, and prioritizing the relevance and importance of various points in the overall discussion. Furthermore, according to Park, C., Kier, C., & Jugdev, K. (2011) and Galloway, R. (2012), debate activities encourage and enhance higher-order learning such as analysis, synthesis, and evaluation (2007). Furthermore, based on Galloway R. (2007), other advantages of debates include the chance that debaters would discover that perspectives other than their own have validity and that reasonable minds can disagree on controversial matters through debating activities

Students must be able to assess the reasons for their behaviors, beliefs, and knowledge claims in order to think critically, according to Gieve, S. (1998), which necessitates them to defend themselves and challenge themselves, classmates, instructors, experts, and authoritative texts. Because students must think rapidly when speaking, debate activities can help them enhance their communication and critical thinking skills. They must be able to support their ideas or concepts with facts and evidence.

Students can develop their critical thinking skills by participating in debating activities that include the following phases: Firstly, they should identify and clarify the issue (Interpretation) before going to gather and organize information about the issue (Analysis). Based on the analysis, they could Evaluate that information for accuracy and applicability (Evaluation) as well as draw conclusions from the evidence (Inference) in the next step. After that, the debaters have to explain conclusions logically in the form of a debate (Explanation). And finally, they also must critically appraise and examine one’s performance (Self- regulation).

**2.1.5 Debating formats**

There are two formats of debating activities which involve Asian Parliamentary and British Parliamentary Format of Debating. However, the researchers just organized the debate following the Asian Parliamentary debate because the participants got used to participating in this type of debating format when they debated in the CTN Debate Club. By doing this, the students do not only feel confused but also ignore their speeches in debating. This is how the Asian Parliamentary debate looks like:



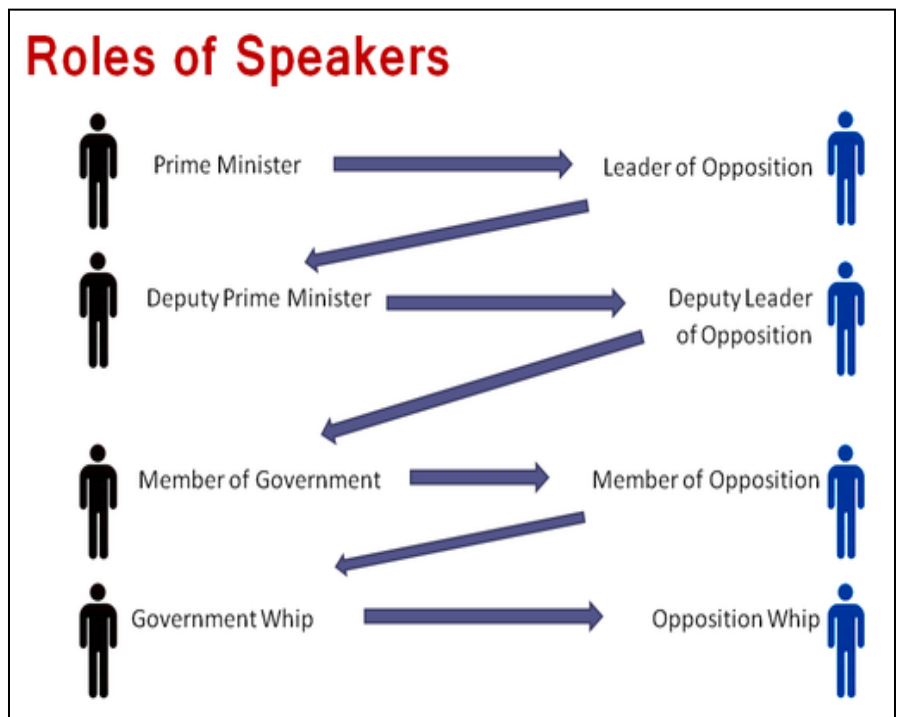
**Figure 1: Asian Parliamentary Debate Shape.**

As can be seen, the Asian Parliamentary Debate composes of two teams: The GOV and the OPP. The following table shows the responsibilities of members of the two teams:

Speech	Responsibility of Debate
- 1st Proposition <b>(Prime Minister)</b>	Introduce motion, define key terms, set burdens, establish mechanism or model if needed, offer substantive arguments
- 1st Opposition <b>(Opposition Leader)</b>	Deal with proposed framework by proposition, clash with proposition arguments, offer own substantive arguments
- 2nd Proposition <b>(Deputy Prime Minister)</b>	Clash, offer new substantive arguments, defend 1st speaker's points
- 2nd Opposition <b>(Deputy Opposition Leader)</b>	Clash, offer new substantive arguments, defend 1st speaker's points
- 3rd Proposition <b>(Government Whip)</b>	Clash and Summarize Key Issues
- 3rd Opposition <b>(Opposition Whip)</b>	Clash and Summarize Key Issues
- Opposition Reply <b>(Opposition Reply Speaker)</b>	Crystallize the round
- Proposition Reply <b>(Government Reply Speaker)</b>	Crystallize the round

**Table 1: Speaker Responsibilities for Asian Parliamentary Debate.**

In addition, this is how the British Parliamentary debate looks like:



**Figure 2: British Parliamentary Debate Shape.**

In general, like the Asian Parliamentary Debate, the British Parliamentary Debate is divided into two teams: the GOV and the OPP. The roles of members of the two teams are shown in the table below:

Speech	Responsibility of Debate
- 1st Proposition <b>(Prime Minister)</b>	-Defines and interprets the motion; -Develops the case for the proposition.
- 1st Opposition <b>(Opposition Leader)</b>	-Accepts the definition of the motion; -Refutes the case of the 1st proposition; -Constructs one or more arguments against the Prime Minister's interpretation of the motion.
- 2nd Proposition <b>(Deputy Prime Minister)</b>	-Refutes the case of the 1st opposition; -Rebuilds the case of the 1st proposition; -May add new arguments to the case of the 1st proposition.
- 2nd Opposition <b>(Deputy Opposition Leader)</b>	-Continues refutation of case of 1st proposition; -Rebuilds arguments of the 1st opposition; -May add new arguments to the case of the 1st opposition.
- 3rd Proposition <b>(Member of Government)</b>	-Defends the general direction and case of the 1 <sup>st</sup> proposition; -Continues refutation of 1st opposition team; -Develops a new argument that is different from but consistent with the case of the 1st proposition (sometimes called an extension).
- 3rd Opposition <b>(Member of Opposition)</b>	-Defends the general direction taken by the 1st opposition; -Continues general refutation of 1st proposition case; -Provides more specific refutation of 2nd opposition; -Provides new opposition arguments.
- 4 <sup>th</sup> Proposition <b>(Government Whip)</b>	-Summarizes the entire debate from the point of view of the proposition, defending the general view point of both proposition teams with a special eye toward the case of the 2nd proposition; -Does not provide new arguments.
- 4 <sup>th</sup> Opposition <b>(Opposition Whip)</b>	-Summarizes the entire debate from the point of view of the opposition, defending the general view point of both opposition teams with a special eye toward the case of the 2nd opposition; -Does not provide new arguments.

**Table 2: Speaker Responsibilities for British Parliamentary Debate.**

## 2.2 Previous research

Many studies have been undertaken to investigate the effectiveness of using debating activities to enhance students' critical thinking ability. For example, Othman, M., F. Mohamad, and F. Amiri (2013) looked into how students felt about using classroom discussion to build critical thinking and oral communication skills. The target group consisted of 16 undergraduate students majoring in Teaching English as a Second Language (TESL) at the University Putra Malaysia's Faculty of Educational Studies (UPM). Classroom discussion procedures were adapted from the British Parliamentary Debate. On either side of the lawsuit, there were two teams (Government and/or Opposition). The data was gathered using a questionnaire, reflection papers, and interviews. According to the findings, the students thought the classroom debate was a beneficial learning experience. The respondents believed that the debates helped improve their critical thinking skills and oral communication ability. In addition, as the students claimed, other benefits of the debates included mastering the course content, boosting confidence, overcoming stage fright, and improving team work skills.

Additionally, Pezhman Zare and Moomala Othman (2014) looked into how students felt about using classroom discussion to improve critical thinking and oral communication skills. The target group consisted of 16 undergraduate students majoring in Teaching English as a Second Language (TESL) at the University Putra Malaysia's Faculty of Educational Studies (UPM). Classroom discussion procedures were adapted from the British Parliamentary Debate. On either side of the case, there were two teams (Government and/or Opposition). The data was gathered using a questionnaire, reflection papers, and interviews. According to the findings, the students thought the classroom debate was a beneficial learning experience. The respondents believed that the debates helped improve their critical thinking skills and oral communication ability. In addition, as the students claimed, other benefits of the debates included mastering the course content, boosting confidence, overcoming stage fright, and improving team work skills.

It can be seen that there are many studies related to debating skills and the results are universal: debating skills can help students enhance their critical thinking ability. However, these definitions and methods do not deal with the importance of debating activities in classes as well as developing critical thinking assessing rubric to enhance students' critical thinking skills. Thus, this research aims to study the crucial role of debate in enhancing critical thinking in civilization classes. To do this, the researcher decided to conduct this research in the context of the Debate Club at Thai Nguyen Specialized High School to build an optimal procedure for organizing debating activities in club meetings and assessing students' critical thinking ability, and then evaluate its impact on our students' critical thinking ability.

### **3. Methodology**

#### **3.1. Research design**

To conduct the study, the researchers employed mixed methods research design, which combines qualitative methods and quantitative methods. By doing this, the researchers can not only investigate the current situation of critical thinking ability among students from CTN Debate Club at Thai Nguyen Specialized High School but also evaluate how debating activities help the students improve their critical thinking ability as well as assess their attitude of the students about using debating activities to promote critical thinking ability. First of all, the researchers delivered the pre-questionnaire and the pre-test to the sixteen participants to investigate the current situation of critical thinking among high school students from the Debate Club at Thai Nguyen Specialized High School. Then, the researchers analyzed the results of the pre-questionnaire and pre-test and found the weakness in the critical thinking of participants. Based on the results of the pre-questionnaire and pre-test, the researchers organized debating activities in the club meetings. This research was also done through classroom observation to assess the learning process and the effects of the activities, and the attitude of students. After that, we utilized post-questionnaires to collect feedback from students about using debating activities to improve critical thinking and a post-test to evaluate how posters help students improve their critical thinking skills. Finally, the researchers collected post-questionnaire and post-test data and analyzed them to provide discussions on the processed data.

#### **3.2. Participants**

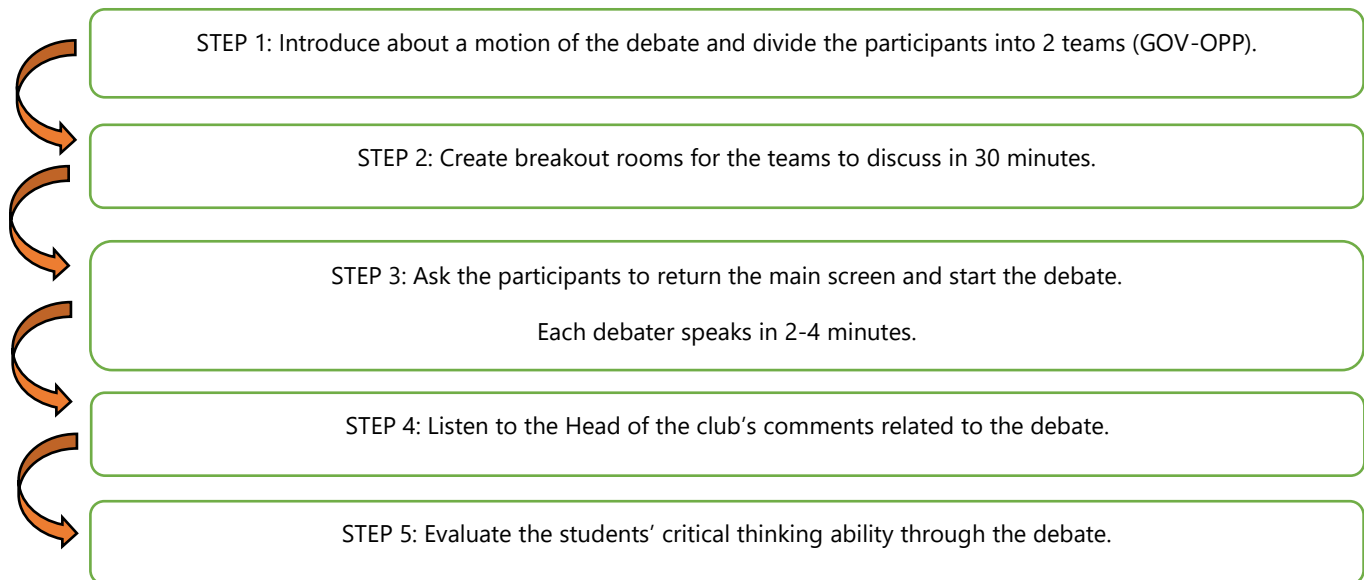
Sixteen-grade 10th high school students from CTN Debate Club at Thai Nguyen Specialized High School, who volunteered to take part in the research to investigate the current situation of critical thinking ability as well as attend club English debating meetings, are the participants of the study. It is a fact that the Debate club organizes the debates in Vietnamese. Therefore, most of the club's members, especially the newbie members, have no chance to debate and improve their critical thinking in English. As a result, the researchers believes that it is a great opportunity for them to explore and improve their debating skill as well as critical thinking in English by participating in this study.

All of these students were required to take part in the pre-tests and post-tests as well as pre and post-questionnaire about their attitude towards the effectiveness of using debating activities.

#### **3.3. Data collection instruments and procedure**

##### **3.3.1 Organizing debate activities procedure**

Due to the complicated situation of the covid epidemic and students from CTN Debate Club at Thai Nguyen Specialized High School studied online at home, the experimental sessions of this study were held online by the club via the software Zoom and Google Meet every Saturday night within 10 weeks. The researchers organized the debating activities into 5 steps, following the figure below:



**Figure 3: Steps in organizing debate activities procedure**

**Pre-test:** Prior to the experiment, the participants took part in an instruction meeting. The researchers first give the learners useful phrases to express their opinion; common debating phrases, and types of debating activities. In addition, the students were supplied with several processes for thinking logically. Based on those, they debated in 2 teams: The affirmative team (GOV – GOVERNMENT) speaks in support of the topic. Their goal is to persuade others that the topic is true, and The negative team (OPP – OPPOSITION) speaks against the topic. Their goal is to persuade others that the topic is not true to express their opinions towards the motion that the researchers gave them as a pre-test. Finally, students' critical thinking ability performed in the debating was assessed according to the Critical Thinking Rubric.

**Post-test:** At the end of the experiment, the students are required to debate in 2 teams: The affirmative team (GOV – GOVERNMENT) speaks in support of the topic. Their goal is to persuade others that the topic is true, and The negative team (OPP – OPPOSITION) speaks against the topic. Their goal is to persuade others that the topic is not true to express their opinions towards the motion that the researchers gave them as a post-test as they did in the pre-test. Their critical thinking ability performed in the debating was evaluated in the same way as in the pre-test.

The pre-post test design required the researchers to collect data about the students' level of critical thinking before the research took place and then to collect the same data at the end of the research period. In this study, the pre-post test design allows the researchers to evaluate the impact of debating activities on students' critical thinking ability by comparing the differences between the pre-test and post-test results. In each test, the researchers gave a motion that was suitable to students' knowledge level and related to the topics in the textbook "English 10 (New version)". The students had to give their opinion (support or against) toward the statement and worked in groups of 4 members to take part in debating activities following the Asian Parliamentary debate organized by the researchers. In fact, based on the organizing debating activity of the CTN Debate Club as well as the formats of debating which the researchers mentioned in the Literature Review, each debater has their own speech and their own responsibility in a debate. Moreover, each speech and the role in a debate performs one or some aspects of critical thinking ability. As a result, we decided to evaluate the students' critical thinking ability through group debating, where the participants had to debate in groups. Finally, the students' critical thinking ability in group debating was assessed according to the Critical Thinking Rubric.

The test was marked analytically based on a Critical Thinking Scoring Rubric designed by SPC (St. Petersburg College). Students' critical thinking was assessed separately by two raters (the researchers and the Head of the Club) on each of the six criteria: Communication, Analysis, Problem Solving, Evaluation, Synthesis and Reflection. Performance on each criterion was judged along with five levels of performance from 0 to 4, including Not Present (0); Emerging (1); Developing (2); Proficient (3); Exemplary (4).

**Pre-questionnaire:** The aim of the pre-questionnaire is to investigate the students' attitudes about using debating activities as motivating factors in improving critical thinking skills, their difficulties and the causes of the difficulties in thinking and speaking.

**Post-questionnaire:** The researchers designed the questionnaire based on two kinds of questions: open-ended questions and close-ended questions. Based on their feedback, the questionnaire was designed to gather the participants' feedback relating to

debating activities, including such aspects as procedure/steps, benefits, disadvantages, attitudes of participants and possible solutions to enhance the effectiveness of using debating activities in improving critical thinking for high school students.

### ***3.3.2 Classroom observation***

The researchers observed the participants continuously from the first meeting with debating activities to the final one to find the developments in their critical thinking ability through an observation sheet designed by the researchers and also used the Critical Thinking Scoring Rubric to assess and mark their critical thinking ability into six criteria: **Communication, Analysis, Problem Solving, Evaluation, Synthesis and Reflection** in each debate of the club meetings.

### ***3.3.3 Criteria for building the motions in the debates***

According to Fernandes Arung (2016), a motion in a debate should be debatable and impartial. It means that the motion should stand in the middle of neutral and doesn't incline to any sides. Therefore, there are three criteria that the researchers had based on to choose the motions in debating activities in this study. First of all, the motions can be a debate on two sides (support and against), and the debaters in two teams (GOV AND OPP) are equally in giving arguments, judgements, evidence and adjustments for the motions. The second criteria for building the motions in the debates is that we provide the motions which are suitable to students' knowledge level and related to the topics in textbook "English 10 (New version)" from unit 2-YOUR BODY AND YOU to unit 8-NEW WAYS TO LEARN. Another characteristic is that the motions are not only mentioned the latest issues or problems in the society that the participants have awareness of but also accepted by the Head and the leaders of the CTN Debate Club after having a discussion with the researchers.

### ***3.3.4 Critical Thinking Scoring Rubric***

We based on the Critical Thinking Scoring Rubric designed by SPC (St. Petersburg College) for grading the students' critical thinking scores. Five levels of critical thinking ability are signified in the rubric: A - Exemplary (4.0), B - Proficient (3.0 – 3.9); C - Developing (2.0 – 2.9); D - Emerging (1.0 – 1.9); F - Not Present (0 – 0.9). For each level, there are six criteria: **Communication** (Define the problem in your own words), **Analysis** (Compare & contrast the available solutions), **Problem Solving** (Select & defend your final solution), **Evaluation** (Identify weaknesses in your final solution), **Synthesis** (Suggest ways to improve/strengthen your final solution) and **Reflection** (Reflect on your own thought process, "What did you learn from this process?" - "What would you do differently next time to improve?"). The students' critical thinking score was the average score of the six criteria scores.

Each level reflects students' critical thinking ability across all the criteria. Under each level, a number of descriptors are included. Such descriptors can make each score level distinct from the others. Therefore, when assessing Critical Thinking ability Based on Debating Activities, the researchers need to consider all the criteria and descriptors together or holistically. The total possible score is 4.0. Clear instructions concerning how to employ this rubric were also provided.



Table 3. Critical Thinking Scoring Rubric

## ASSESSMENT RUBRIC FOR CRITICAL THINKING

Performance Element	Exemplary (4)	Proficient (3)	Developing (2)	Emerging (1)	Not Present (0)
<b>I. Communication</b> <i>Define problem in your own words.</i>	Identifies the main idea or problem with <u>numerous</u> supporting details and examples which are organized <u>logically</u> and <u>coherently</u> .	Identifies the main idea or problem with <u>some</u> supporting details and examples in an <u>organized</u> manner.	Identifies the main idea or problem with <u>few</u> details or examples in a <u>somewhat</u> organized manner.	Identifies the main idea or problem poorly with <u>few or no</u> details or states the main idea or problem <u>verbatim</u> from the text.	Does <u>not</u> identify the main idea or problem.
<b>II. Analysis</b> <i>Compare &amp; contrast the available solutions.</i>	Uses <u>specific inductive or deductive</u> reasoning to make inferences regarding premises; <u>addresses</u> implications and consequences; identifies facts and relevant information <u>correctly</u> .	Uses <u>logical</u> reasoning to make inferences regarding solutions; <u>addresses</u> implications and consequences; identifies facts and relevant information <u>correctly</u> .	Uses <u>superficial</u> reasoning to make inferences regarding solutions; Shows some <u>confusion</u> regarding facts, opinions, and relevant, evidence, data, or information.	Makes <u>unexplained, unsupported, or unreasonable</u> inferences regarding solutions; makes <u>multiple errors</u> in distinguishing fact from fiction or in selecting relevant evidence.	Does <u>not</u> analyze multiple solutions.
<b>III. Problem Solving</b> <i>Select &amp; defend your final solution.</i>	<u>Thoroughly</u> identifies and addresses <u>key</u> aspects of the problem and <u>insightfully</u> uses facts and <u>relevant</u> evidence from analysis to support and defend potentially <u>valid</u> solutions.	Identifies and addresses <u>key</u> aspects of the problem and <u>uses</u> facts and <u>relevant</u> evidence from analysis to develop potentially <u>valid</u> conclusions or solutions.	Identifies and addresses <u>some</u> aspects of the problem; develops <u>possible</u> conclusions or solutions using some <u>inappropriate</u> opinions and <u>irrelevant</u> information from analysis.	Identifies and addresses <u>only one</u> aspect of the problem but develops <u>untestable</u> hypothesis; or develops <u>invalid</u> conclusions or solutions based on opinion or <u>irrelevant</u> information.	Does <u>not</u> select and defend a solution.
<b>IV. Evaluation</b> <i>Identify weaknesses in your final solution.</i>	<u>Insightfully</u> interprets data or information; identifies <u>obvious</u> as well as <u>hidden</u> assumptions, establishes <u>credibility</u> of sources on points other than authority alone, <u>avoids</u> fallacies in reasoning; distinguishes <u>appropriate</u> arguments from extraneous elements; provides <u>sufficient</u> logical support.	<u>Accurately</u> interprets data or information; identifies <u>obvious</u> assumptions, establishes <u>credibility</u> of sources on points other than authority alone, <u>avoids</u> fallacies in reasoning; distinguishes <u>appropriate</u> arguments from extraneous elements; provides <u>sufficient</u> logical support.	Makes <u>some</u> errors in data or information interpretation; makes arguments using <u>weak</u> evidence; provides <u>superficial</u> support for conclusions or solutions.	Interprets data or information <u>incorrectly</u> ; Supports conclusions or solutions <u>without evidence</u> or logic; uses data, information, or evidence <u>skewed</u> by <u>invalid</u> assumptions; uses <u>poor</u> sources of information; uses <u>fallacious</u> arguments.	Does <u>not</u> evaluate data, information, or evidence related to final solution.
<b>V. Synthesis</b> <i>Suggest ways to improve/strengthen your final solution.</i>	<u>Insightfully</u> relates concepts and ideas from multiple sources; uses <u>new</u> information to enhance final solution; <u>recognizes</u> missing information; <u>correctly</u> identifies <u>potential</u> effects of new information.	<u>Accurately</u> relates concepts and ideas from multiple sources; uses <u>new</u> information to enhance final solution; <u>correctly</u> identifies <u>potential</u> effects of new information.	<u>Inaccurately</u> or <u>incompletely</u> relates concepts and ideas from multiple sources; <u>shallow</u> determination of effect of new information on final solution.	<u>Poorly</u> integrates information from more than one source to support final solution; <u>Incorrectly</u> predicts the effect of new information on final solution.	Does <u>not</u> identify new information for final solution.
<b>VI. Reflection</b> <i>Reflect on your own thought process.</i> <i>"What did you learn from this process?"</i> <i>"What would you do differently next time to improve?"</i>	Identifies <u>strengths</u> and <u>weaknesses</u> in own thinking; recognizes personal assumptions, values and perspectives, <u>compares to others</u> , and <u>evaluates</u> them in the context of alternate points of view.	Identifies <u>strengths</u> and <u>weaknesses</u> in own thinking; recognizes personal assumptions, values and perspectives, <u>compares to others</u> , with <u>some</u> comparisons of alternate points of view.	Identifies <u>some</u> personal assumptions, values, and perspectives; recognizes <u>some</u> assumptions, values and perspectives of others; <u>shallow</u> comparisons of alternate points of view. does not consider alternate points of view.	Identifies <u>some</u> personal assumptions, values, and perspectives; <u>does not</u> consider alternate points of view.	Does <u>not</u> reflect on own thinking.

### 3.4. Data Analysis

The quantitative analysis of data was conducted to assess the effect of debating activities on the students' critical thinking ability. Collected data were processed manually.

## 4. Results and Discussion

### 4.1. Results of the Pre-questionnaire

The researchers found that because all students have studied English for a long time, they have a good environment in which to develop English speaking based on the Pre-questionnaire results. Furthermore, they were aware of the importance of critical thinking ability in their future, which is considered a great motivator for them to be active and disciplined in their study of this skill. Besides, the participants exhibited a positive attitude toward the technique of using debating activities in improving critical thinking ability though they had no more opportunities to participate in the activities when they were in the classes. As a result, the majority of them believe they are poor thinkers in English for different reasons such as a lack of vocabulary linked to the motion, fear of making grammar mistakes when speaking English, etc. The analysis of the Pre-questionnaire results is shown below:

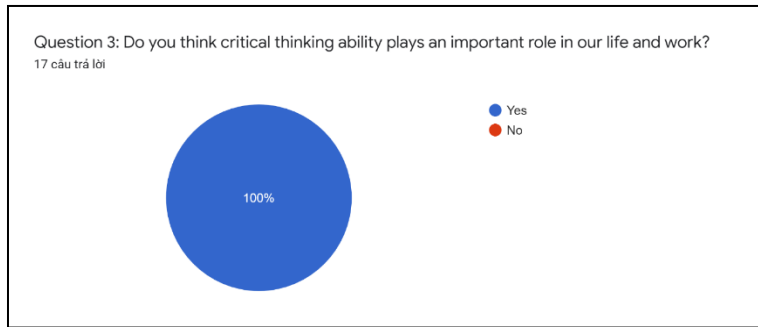


Figure 4. Students' attitude towards roles of critical thinking ability

It can be seen from the graph that all surveyed students (100%) agreed that critical thinking ability plays an important role in their life and work. Explaining their answers, they gave some reasons such as critical thinking ability is one of the important skills in the 21st century: to find a well-paid job, to develop their career, to deal with the problems in their life and so on. It means that their attitude toward critical thinking seems to be positive, and all of them have an awareness of the benefits when they are logical thinkers.

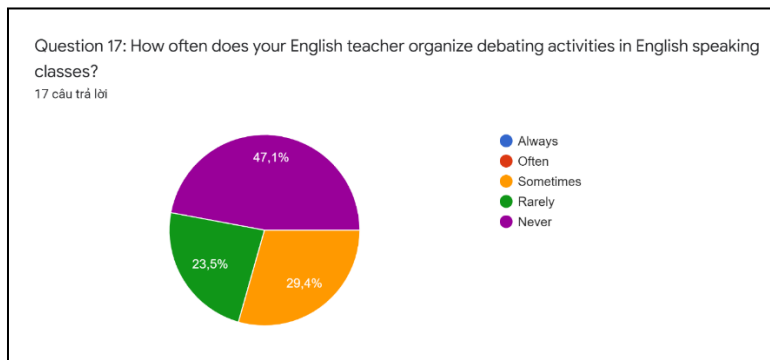


Figure 5. The frequency of debating activities organized by the English teacher

The pie chart reveals the frequency of debating activities organized by their English teacher. It is clear that the teachers of the participants engaged in debating activities to practice critical thinking irregularly. Approximately 29 % of the students stated that their English teachers sometimes organize the activities in speaking lessons. In other words, the teachers only organized the debating activities in several English lessons. It means that pupils will no longer be able to practice their critical thinking ability in their classes due to the percentage of teachers rarely holding debating activities in English lessons, which represented nearly a quarter of the total students (23,5%). Moreover, there are 47% of the surveyed students said that they have no chance to debate because their teachers never organize any debating activity for learners.

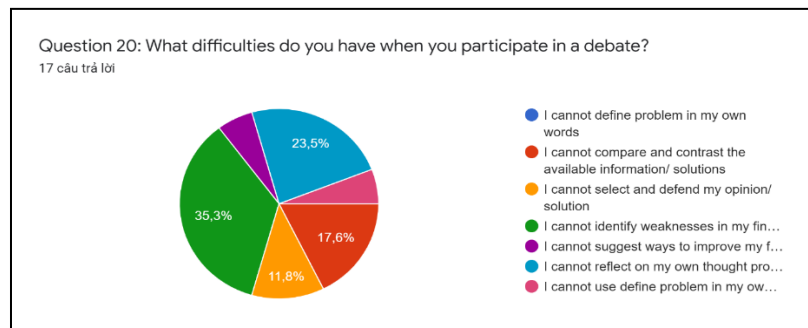
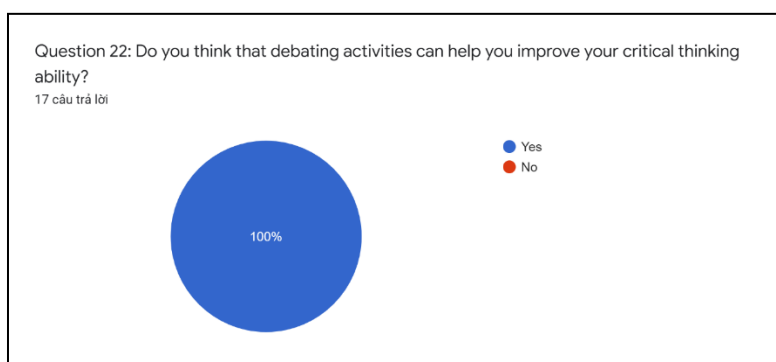


Figure 6. The percentage of difficulties students meet when participating in a debate

The pie chart illustrates the difficulties which the students meet when participating in a debate. Their difficulties have come from numerous reasons; however, the proportion of the students who cannot identify weaknesses in my final solution made up over 35%, signifying a major cause of difficulties in debating. The second reason why students are afraid of debating is that I cannot reflect on my own thought process; 23,5% of the total students agree with it. In addition, there are several other difficulties students face when participating in a debate, so the researcher presented them in the following table.

**Table 4. Difficulties in participating in a debate**

No	Difficulties in speaking English	Percentage of students
1	<i>I cannot compare and contrast the available information/ solutions.</i>	17,6%
2	<i>I cannot select and defend my opinion/ solution.</i>	11,8%
3	<i>I cannot define problem in my own words.</i>	5,9%
4	<i>I cannot suggest ways to improve my final solution.</i>	5,9%



**Figure 7. The proportion of students who think that debating activities can help them improve their critical thinking ability or not**

The graph shows that all surveyed students (100%) agreed that debating activities could help them enhance their critical thinking ability. They explained their answers by stating that improving critical thinking ability by participating in debating activities is beneficial to be more confident, broaden their social relationships, enhance team work skills, and motivate themselves to think logically and deeply. Besides, taking part in debating activities is necessary to improve their communication, analysis, problem solving, evaluation, synthesis and reflection that are required the students to combine and utilize flexibility and proficiency during debating process. It means that their attitude toward promoting critical thinking ability by using designing activities seems to be optimistic.

#### **4.2. The impacts of debating activities on students' critical thinking ability**

In the pre-test, the students had to work in groups of 4 members to debate following the Asian Parliamentary debate. And the motion for them to the debate was "This house believes junk food should be banned in schools" and "This house believes the best way to improve students' health is to increase the number of sports facilities in schools". The researcher saw that, the students' critical thinking ability is quite poor. In addition, most of them could not define the problem in their own words and just compare & contrast the available solutions of the opposing team simply, superficially. Although the students prepared their speech before recording and were familiar with debating in Vietnamese, they did not analyze the information, arguments, evidence, and examples carefully to select & defend their final solution. Moreover, their speeches usually are over time as well as some of their presentations is not fluent in general.

However, in the post-test, most of these mistakes have been overcome. In the post-test, the students also worked in groups of 4 members to debate following the Asian Parliamentary debate. And the motion for them to the debate was "This house believes students should learn to play a musical instrument" and "This house believes students shouldn't go to music concerts". In order to evaluate the impacts of debating activities on students' critical thinking ability, we compared the students' critical thinking scores in the pre-test and post-test. The following chart illustrates the scores in the critical thinking pre-test and post-test gained by the students.

	GROUP 1		GROUP 2		GROUP 3		GROUP 4	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Criteria 1: <b>Communication</b>	1	2	1	3	2	3	1	3
Criteria 2: <b>Analysis</b>	2	3	2	2	1	3	1	3
Criteria 3: <b>Problem Solving</b>	2	3	2	1	1	3	2	3
Criteria 4: <b>Evaluation</b>	2	3	1	3	2	3	2	3
Criteria 5: <b>Synthesis</b>	1	2	1	3	2	2	2	3
Criteria 6: <b>Reflection</b>	0	2	0	2	1	2	2	3
<b>Average</b>	<b>1.3</b>	<b>2.5</b>	<b>1.2</b>	<b>2.3</b>	<b>1.5</b>	<b>2.7</b>	<b>1.7</b>	<b>3.0</b>

Table 5: Critical thinking scores of the groups in the pre-test and post-test.

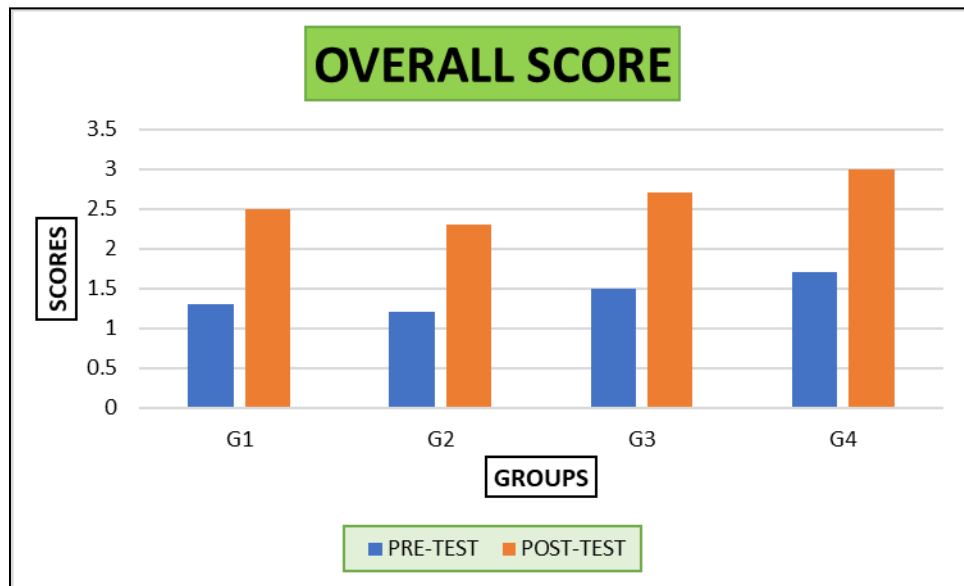


Figure 8. Pre and post-test critical thinking scores of groups

It can be clearly seen from figure 1 that the pre-test scores were relatively low, primarily ranging from 1.2 to 1.7. All of the groups were at level D - Emerging (1.0 – 1.9). However, after organizing debating activities in the club meetings, their critical thinking scores have improved remarkably. It is visible from the figure that the post-test scores are mainly in the range of 2.3 to 3.0. In fact, the improvement in the critical thinking ability of high school students when they think and talk in English is slower and harder than that in Vietnamese; Therefore, having said that, the post-test scores witnessed a dramatic rise compared to the results in the pre-test. There were three groups of students at level C - Developing (2.0 – 2.9), and a group achieved level B - Proficient (3.0 – 3.9), which was impossible in the pre-test.

Table 6. Average Scores in the Pre-test and Post-test

Pre-test	1.4/4.0
Post-test	2.6/4.0

Table 6. Average Scores in the Pre-test and Post-test

It can be seen from the table that there was a considerable increase in the average critical thinking scores in groups' post-test results compared to their pre-test results of them. While assessing the students' pre-test performance, the researchers found that it was very hard for students to not only identify the main idea or problem correctly but also evaluate data, information, or evidence related to their arguments. Besides, identifying facts and relevant information correctly and shallowing comparisons of alternate

points of view were the weakest aspects that the participants performed in the pre-test. Moreover, they were extremely confused to use logical reasoning to make inferences regarding solutions; address implications and consequences. Nevertheless, after they took part in English debating activities as well as gained some useful advice and instructions from the researchers, they had more motivation to think and speak properly. Specifically, the students gathered more ideas, arguments, and evidence to present in the debates. Besides, the learners also tended to become more confident and know the way to present their thinking and make questions for the opposing teams in the debating progress. Therefore, they got a much higher average score of 2.6 in the post-test, compared to only 1.4 in the pre-test.

To demonstrate the effectiveness of using debating activities in students' critical thinking ability, we also compared the results of the participants in the pre-test and post-test, as can be seen in Figure 7.

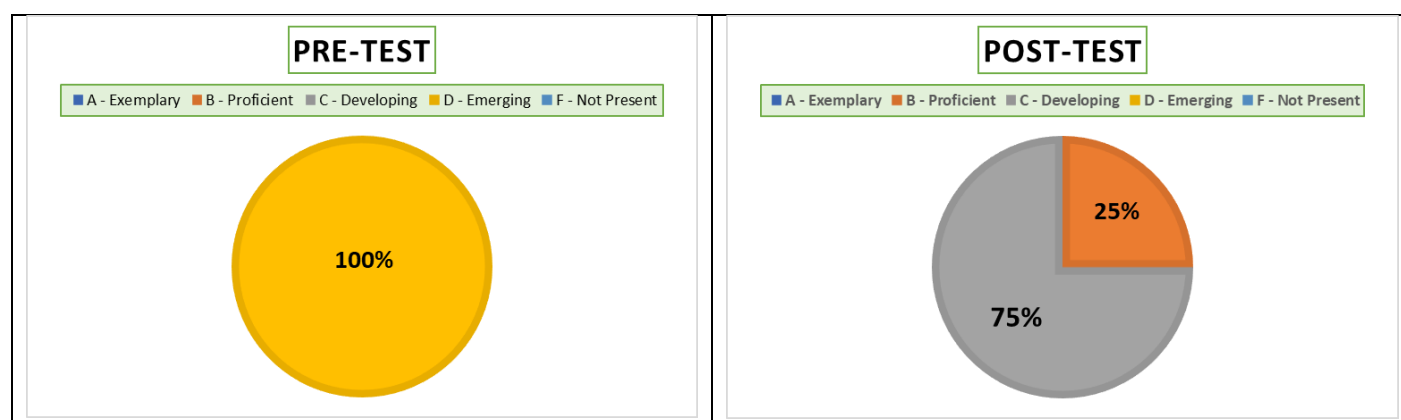


Figure 9. Results of grading student's speaking performance in pre and post-test

Figure 3 indicates that no group in the club got Grade A – Exemplary, Grade B – Proficient, Grade C – Developing, and Grade F – Not Present in the pre-test. Meanwhile, all of the groups gaining D – Emerging.

By contrast, the number of groups that got Grade B in the post-test accounted for a quarter of the groups. Besides, there were 75% of them gained Grade C. Although no group could get Grade A, there were no groups getting Grade D and F.

**4.3. The impact of debating activities on different aspects of students' critical thinking ability**

Students' critical thinking score was assessed according to the Speaking Scoring Rubric, focusing on six criteria: Communication, Analysis, Problem Solving, Evaluation, Synthesis and Reflection.

Table 7. Average scores according to the Critical thinking criteria

Criteria	Communication	Analysis	Problem Solving	Evaluation	Synthesis	Reflection	OVERALL SCORE
Pre-test average scores	1.3	1.5	1.8	1.8	1.5	0.8	1.4
Post-test average scores	2.8	2.8	2.5	3.0	2.5	2.3	2.6

For each of the scoring criteria, groups made significant progress. Specifically, they got much bigger changes in both Communication criteria as well as Analysis, with an average score of 2.8 in the post-test. Furthermore, they still had many difficulties with the Problem Solving and Synthesis criteria because the average score in the post-test for these criteria both only increased to mark 2.5, compared to scores 1.8; 1.5 on the pre-test, respectively. Besides, there was a rise of Reflection average score among groups to 2.3 in the post-test, while the students did not perform this aspect proficiently at 0.8 in the pre-test. In addition, we also found that the participants' scores for Evaluation were the highest in both the pre-test and post-test at 1.8 and 3.0, respectively.

4.4. Observation

	MOTION	GROUP 1	GROUP 2	GROUP 3	GROUP 4
WEEK 1	This house believes that all museums and zoos should be free to everyone.	Average Score: 1.3	Average Score: 1.2	Average Score: 1.5	Average Score: 1.7
WEEK 2	This house believes that volunteer work should be a compulsory part of high school programmes.	Average Score: 1.3	Average Score: 1.2	Average Score: 1.5	Average Score: 1.7
WEEK 3	This house believes that students learn better thanks to electronic devices.	Average Score: 1.2	Average Score: 1.2	Average Score: 1.5	Average Score: 1.5
WEEK 4	This house believes that electronic devices are making students socially less interactive.	Average Score: 1.2	Average Score: 1.3	Average Score: 1.5	Average Score: 1.5
WEEK 5	This house believes that men are better leaders than women.	Average Score: 1.5	Average Score: 1.7	Average Score: 1.7	Average Score: 1.8
WEEK 6	This house believes that students should attend single-sex schools (separate boys and girls).	Average Score: 1.8	Average Score: 1.8	Average Score: 2.5	Average Score: 2.6
WEEK 7	This house believes luck is more important than a student's ability to get high scores in exams.	Average Score: 1.5	Average Score: 1.7	Average Score: 2.2	Average Score: 2.3
WEEK 8	This house believes students learn better in online classes than in traditional classes.	Average Score: 1.7	Average Score: 2.0	Average Score: 2.2	Average Score: 2.3
WEEK 9	This house believes that extra classes do more harm than good for students.	Average Score: 2.0	Average Score: 2.2	Average Score: 2.5	Average Score: 2.7
WEEK 10	This house prioritizes students studying in groups than studying alone.	Average Score: 2.5	Average Score: 2.3	Average Score: 2.7	Average Score: 3.0

Table 8. Critical thinking scores of the groups during the experiment.

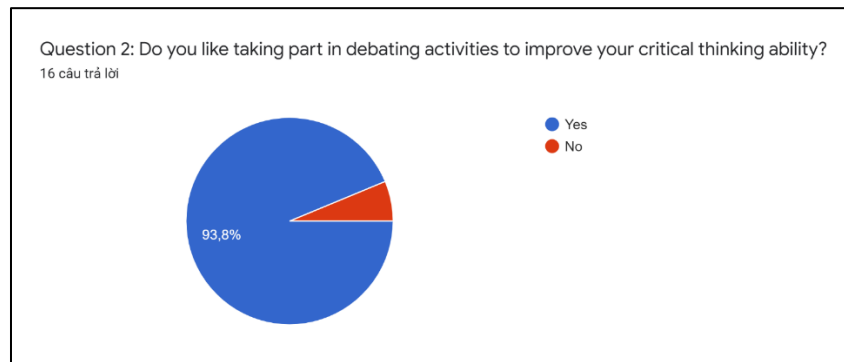
While observing the debating, we found that their critical thinking has improved significantly over time in terms of Communication, Analysis, Problem Solving, Evaluation, Synthesis and Reflection. Although the average scores of the four groups increased slightly and slowly, their critical thinking scores all went up steadily for weeks during the experiment. Regarding Communication, students showed how their defining problems in their own words skill increased by identifying the main idea or problem with some supporting details and examples in an organized manner related to the motions. Relating to Analysis, the researchers could see that comparing and contrasting the available solutions or information is effective obviously after receiving the feedback and comments from the researchers and the Head of the club, who has many experiences in debating; students recognized the mistakes and corrected them on the drafts before debating. Coming to Problem Solving, the researchers found that the participants could identify and address key aspects of the problem and use facts and relevant evidence from analysis to develop potentially valid conclusions or solutions that just some of them could make in the pre-test. Relating to Evaluation, most of the students accurately relate concepts and ideas from multiple sources; use new information to enhance the final solution; correctly identify potential effects of new information to make their opinions stronger. In addition, students' speed also improved clearly; they could speak English faster and more naturally with good intonation, stress and less hesitation in long sentences than they did in the beginning.

In addition, the results from the analysis of the observation checklists show that students' interaction, attitude during the meetings and the atmosphere in the meetings were always positive. Specifically, in the process of working, the students were highly collaborative with the researchers as they understood and followed the instructions of the researchers and asked questions to get a clear explanation. Also, these students took part in team work or discussed the arguments, evidence, analysis, etc., actively. The students seemed happy and interested in debating, which made the meeting's atmosphere exciting.

From all the analysis above, it can be noticed that when improving critical thinking ability based on debating, students were given opportunities to develop ideas, speed of thinking, debating skills, logic in thinking and improve their presentation skills.

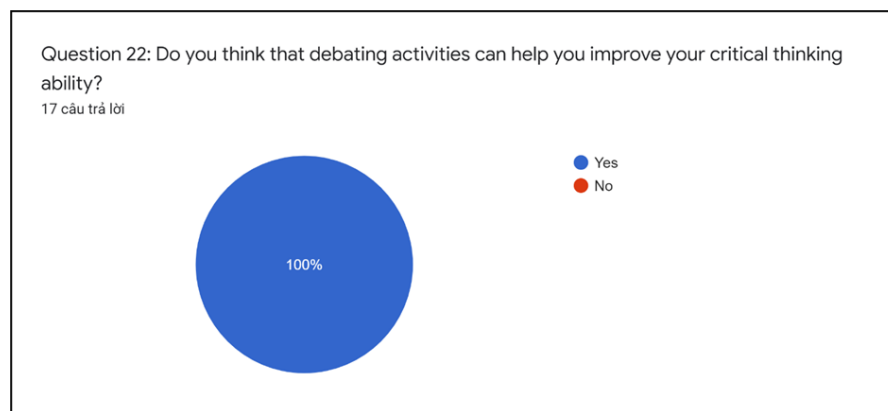
4.5. Students' feedback on speaking through posters designing activities

The results of the feedback questionnaires for students show that most of the students are interested in improving critical thinking by taking part in debating activities. They would like to use this method not only to enhance their critical thinking ability but also to raise their motivation to speak the English language.



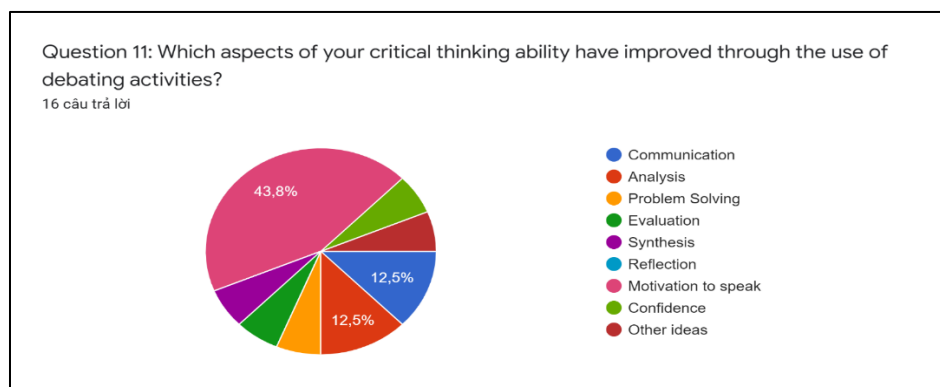
**Figure 10: Students' opinions about improve their critical thinking ability through debating activities**

It can be seen from the graph that nearly all surveyed students (93,8%) like participating debating activities to improve their critical thinking ability. After an experimental time, speaking based on this activity seemed to have positive effects on students' motivation in critical thinking ability. It means that their attitude toward this method seems to be very good.



**Figure 11. The proportion of students who agree that debating activities can help them improve their critical thinking ability or not**

It can be seen from the given graph that all surveyed students (100%) agreed that debating activities could help them improve their critical thinking ability. Explaining their answers, they gave some reasons such as debating is useful to raise their critical thinking ability, especially in debate progress; be more confident, know how to express ideas; evidence as well as arguments in debating. It means that their attitude toward this method seems to be optimistic.



**Figure 12: The proportion of aspects of their critical thinking ability have improved through debating activities**

Overall, many aspects of their critical thinking ability have improved through debating activities. Motivation to speak was an aspect that has improved among nearly half of the students (43,8%). In other words, students motivate themselves to think logically and speak in English with other participants than normally. Communication and Analysis were other aspects that have improved (12,5% of the students). The researchers found out that the students communicated as well as analyzed the motions, arguments, examples,

etc., better and more clearly. Besides, 6,3% of the students believed that their Problem Solving, Evaluation, Confidence, and Synthesis have improved after debating with the instructions of the researchers.

## **5. Conclusion**

### **5.1 Main findings**

The researcher could describe the main findings as follows after completing the survey and the experiment, evaluating and discussing the results:

One, the English critical thinking ability of high school students from the CTN Debate Club at Thai Nguyen Specialized High School was not strong in general; they still struggled in Communication, Analysis, Problem Solving, Evaluation, Synthesis, and Reflection.

Two, throughout the study process, the researchers discovered that students responded well to the use of debating activities in club English meetings and that employing debating activities increased students' interest, motivation, activity, and creativity in logical thinking.

Three, including debate activities in club English meetings, may help students enhance their critical thinking ability. Furthermore, practically all of the students recognized the value of debating activities in improving their critical thinking ability in English. Debating activities were found to be useful in boosting critical thinking skills by approximately 94 percent of the participants. Furthermore, the majority of the participants had a good attitude toward debating activities, and they highlighted a number of aspects of critical thinking ability that have improved as a result of using this technique of debating.

In fact, the current study found that despite recent changes in critical thinking ability development, debating activities-based logic thinking plays an important role in strengthening and enhancing critical thinking ability in high school students. In comparison to the start of the research, the participants' critical thinking skill has improved significantly in all aspects of communication, analysis, problem solving, evaluation, synthesis, and reflection. Because they all want to win the debate, the students have grown more confident and engaged in thinking logically.

Aside from the advantages, various issues associated with enhancing critical thinking ability through the use of debating activities have been found and examined. Organization, time management, and assessment are the most significant issues.

### **5.2. Recommendations**

The participants provided various recommendations to improve the use of debating activities in increasing the critical thinking ability of high school students through the post-questionnaire.

For teachers who want to encourage their students to think critically in English, particularly high school students, should organize debating activities and integrate different types of debating activities into their English speaking lessons on a regular basis to create more opportunities, situations that require students have to think critically as well as raise their interesting in debate. Furthermore, teachers could structure the debates as a competition and provide various minor prizes to encourage students to participate actively and enthusiastically in thinking and speaking. In addition, teachers should encourage their students to look for what they wish to use as proof or examples in order to make their arguments more appealing and persuasive. They should also encourage students to explore their presentation styles in debating as well as gain more knowledge related to the latest issues debate motions in the "The debaters" program.

Besides, students should actively participate in debating activities and support their team's beliefs in the arguing process to make this strategy more successful. Second, students should improve their logical thinking and speaking skills in order to participate more actively in debating events. Furthermore, encouraging students to collaborate with their classmates to express themselves in debating is a good way to boost their confidence in thinking and speaking because they can share their ideas, opinions, and experiences as the debate progresses. As a result, students can better understand the motions and broaden their thinking.

### **5.3. Conclusion**

The current study was done to help high school students improve their critical thinking skills by organizing debating activities. The findings of the study demonstrate that debating activities can be an effective and enjoyable technique to improve students' critical thinking ability. Furthermore, the students have a favourable attitude regarding the utilization of debating activities. The majority of them stated that the procedure makes them happy and cheerful. They also indicated that debating activities have given them the confidence and motivation to speak, as well as boosting their thinking and giving them with presenting skills, the ability to analyze, compare, and evaluate material, and interest in debate. With all of these advantages of using debating activities to improve high school students' critical thinking ability from the CTN Debate Club at Thai Nguyen Specialized High School, the researchers



strongly suggest that this method be made an integral part of not only club meetings but also classes and other educational settings.

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**Conflicts of Interest:** The authors declare no conflict of interest.

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