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n Assessment of Critical Thinking Skills of Thai Undergraduate Students in Private Thai Universities in Bangkok through an Analytical and Critical Reading Test

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Abstract

The purpose of this research was to assess the critical thinking of Thai undergraduate students in a sample of private Thai universities in Bangkok. The population studied was 6,436 English major students in Faculties of Humanities and Liberal Arts in a total of 12 private universities in Bangkok which offer analytical and critical reading courses to their English major students. The selected sample was 400 English major students who studied analytical and critical reading courses in 4 private Thai universities in Bangkok, taken from purposive sampling. The research instrument was an analytical and critical reading test. Collected data was analyzed by mean, standard deviation and statistical analysis of variance (ANOVA). Result of the study showed that critical thinking of Thai undergraduate students in private Thai universities was at a low level with a mean score of 5.93 marks (from the total score of 15 marks) with a standard deviation of 2.67.

Keywords: assessment, analytical and critical thinking skills, interpreting, making inference

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การประเมินความสามารถในการคิดอย่างมี วิจารณญาณของนักศึกษาไทยในมหาวิทยาลัย เอกชนในกรุงเทพมหานครโดยใช้แบบทดสอบ การอ่านวิเคราะห์

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บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อประเมินความสามารถในการคิดอย่างมีวิจารณญาณของนักศึกษาไทยในมหาวิทยาลัยเอกชนในเขตกรุงเทพมหานคร ประชากรที่ใช้ในการศึกษา คือ นักศึกษาวิชาเอกภาษาอังกฤษในคณะมนุษยศาสตร์และศิลปศาสตร์ ในมหาวิทยาลัยเอกชนในกรุงเทพมหานคร 12 แห่ง จำนวน 6,436 คน กลุ่มตัวอย่างที่ใช้ในการวิจัย คือ นักศึกษาวิชาเอกภาษาอังกฤษ ที่เรียนวิชาการอ่านวิเคราะห์และวิชาการอ่านอย่างมีวิจารณญาณในคณะมนุษยศาสตร์และศิลปศาสตร์จำนวน 400 คน จาก มหาวิทยาลัยเอกชน 4 แห่งในกรุงเทพมหานคร ที่ได้มาจากการเลือกกลุ่มตัวอย่างแบบเจาะจง เครื่องมือที่ใช้ในการวิจัย คือ แบบทดสอบการอ่านวิเคราะห์ และการอ่านอย่างมีวิจารณญาณ สถิติที่ใช้ในการวิเคราะห์ข้อมูล คือ ค่าเฉลี่ยเลขคณิต ค่าเบี่ยงเบนมาตรฐานและ ANOVA ผลการวิจัย พบว่า ความสามารถในการคิดอย่างมีวิจารณญาณของนักศึกษาไทยอยู่ในระดับต่ำ โดยมีค่าคะแนนเฉลี่ยที่ 5.93 คะแนน (จากคะแนนเต็ม 15 คะแนน) และมีค่าเบี่ยงเบนมาตรฐาน 2.67

คำสำคัญ: การประเมินผล ความสามารถในการคิดอย่างมีวิจารณญาณ การตีความ การสรุปความ

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Introduction

Life in the 21st century is challenging with new knowledge and technologies being absorbed into the national framework on a daily basis. To be able to navigate these complexities, a special skill called “Critical Thinking” can be called upon. Critical thinking is essential for managing complex situations. In Thailand, most research on Thai students’ critical thinking found that Thai students lack critical thinking skills. Students who are used to following instructions often find it challenging to analyze situations, make decisions, and solve problems. Teachers need to understand critical thinking thoroughly before introducing their classes to such skills. To clarify the facts of the situation, we need to learn more about critical thinking in Thailand.

Critical thinking is not a new feature of the Thai national policy in education, but it has become more prominent recently. Now, education policy requires that Thai students be able to reason, criticize, know how to solve problems, and apply these skills in real life. The importance of critical thinking is also stressed in the National Education Act of 1999, in Section 24, which states:

In organizing the learning process, educational institutions and agencies concerned shall... (2) provide training in thinking process, management, how to face various situations and the

application of knowledge for obviating and solving problems; (3) organize activities for learners to draw from authentic experience; drill in practical work for complete mastery; enable learners to think critically and acquire the reading habit and continuous thirst for knowledge. (Office of the National Education Commission, n.d., p. 11)

According to Atagi (2002), and Lipman (2003), critical thinking is also particularly important in the new millennium, as advanced societies change from industrial to informational societies in which the search, selection, and application of information, and the creation and dissemination of knowledge play important roles in both individual and social development. Accordingly, an education paradigm for “knowledge-based” societies is emerging in which higher-order thinking skills, communication skills, and continuous learning are emphasized. Critical thinking is the heart of education. They pointed out that education can be seen as the great laboratory for rationality, but it is more realistic to see it as a context in which young people learn to be reasonable so that they can grow up to be reasonable citizens, reasonable companions, and reasonable parents.

The website Skills You Need (2015), concerning the topic of Critical Thinking, points out that someone with critical thinking skills needs to be able to:

Understand the links between ideas.

Determine the importance and relevance of arguments and ideas.

Recognize, build and appraise arguments.

Identify inconsistencies and errors in reasoning.

Approach problems in a consistent and systematic way.

Reflect on the justification of their own assumptions, beliefs and values. (para. 6)

It's obvious that those skills are already taught in the subjects of analytical and critical reading in universities. However, tertiary level students are assumed not to have sufficient critical thinking skills. The situation was confirmed by Graham (2010), Pathanasethpong (2014) and Fredrickson (2016) in articles in the *Bangkok Post* newspaper, addressing their opinions on the study of English by Thai students, that it has taken a period of 10 years since the 1999 Education Act before the executives of the ministry's education agencies agreed to the proposal to reduce the role of rote learning and to adopt analytical thinking as a fundamental teaching protocol. Teachers need to be trained at optimal speed, in order to give students who are in basic education the best chance of understanding the necessity of critical thinking. In 2013, the Program for International Student Assessment revealed the 2012 test results for 15-year-old students in 67 participating areas, with Thailand

among them. The test was meant to gauge critical thinking and literacy in mathematics, science and reading. For Thailand, the mean score in all three categories hovered around the 25th percentile. The Level 5 and 6 performance (indicative of higher-order cognitive processes) could only be achieved by 2.5% of the Thai students for mathematics, 1% for reading, and 0.9% for science. More than half of the students could not make it past Level 3, which suggested they were only capable of solving straightforward problems. When comparing among Asian countries, Thai students are underperforming compared to their peers in most other Asian countries, as their scores were below the international average in all three subjects (Math, Science and Reading) tested in the 2015 Program for International Student Assessment (PISA). In reading, Thais scored 409 points, well below the OECD average of 493 points. According to the survey, Thailand ranked 57th for reading from 70 countries worldwide.

Lohatepanont (2017) stated that Thailand 4.0 will require a skilled work force that is ready to face the challenges of an ever-changing 21st century world. Research has shown that Thai schools are comparatively not up to the task. He questioned about how the government can ensure that Thailand can compete with neighboring countries, when it fails to equip its citizens with the necessary skills in critical thinking, mathematics and language. He also

pointed that there seemed to be no hope for “Thai innovation”

In order to present undergraduate students with critical thinking skills, subjects such as analytical and critical reading are provided in the curricula of institutions of tertiary education in order to enable the practice of English language reading, and also the critical thinking of students through analysis and critical skills such as interpretation, inference, and reflection on justifications (Kurkland, 2010; Lau & Chan, 2015). However, there has been little research done on critical thinking skills of Thai undergraduate students, especially in private Thai universities in Bangkok.

Significant of the Study

Because critical thinking skills are extremely important in developing a successful career (Tilus, 2012), and students are to use their critical thinking in their careers to develop themselves, working for their workplaces and for their country, it’s always of interest to learn about their critical thinking ability. The study of assessment of analytical and critical thinking through critical reading is another step in gathering information to understand the level of critical thinking skills of Thai students. The resulting information can be used as a guideline to develop the curricula and methods of teaching analytical and critical reading, in order to improve Thai students’ critical thinking.

Literature Review

The Concept of Critical Thinking

Scriven and Paul (as cited in Foundation for Critical Thinking, 2015) concluded that critical thinking is the intellectually disciplined process of conceptualizing, applying, analyzing, synthesizing, and evaluating information actively and skillfully gathered from observation, experience, reflection, reasoning, or communication, as a guide to belief and action. It is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness.

Cottrel (2011) stated that “Critical thinking involves a cognitive activity associated with using the mind. Learning to think in analytical, evaluative ways means using mental processes such as attention, categorization, selection and judgment” (p. 1).

Bloom, Engelhart, Furst, Hill and Krathwohl (1956) originated the six-tiered taxonomy of cognitive complexity, which are knowledge, comprehension, application, analysis, synthesis, and evaluation. Anderson and Krathwohl (2001) developed and revised the taxonomy changing from nouns to the six verbs, starting from remember, understand, apply, analyze, evaluate, and create. The first three levels of this cognitive complexity are regarded

as a **lower order of thinking**. The three more advanced levels of cognitive complexity are analyzing, evaluating, and creating, which are regarded as a **higher order of thinking**, which has been described as “thinking about thinking”. Smith, (2003) supported the idea that teaching critical thinking is an important goal for university professors.

The Relationship between Critical Thinking and Critical Reading

According to Kurland (2010), critical **reading** is explained as a technique for **discovering** information and ideas within a text, while critical **thinking** is referred to a technique for **evaluating** information and ideas, which is finally used for deciding what to accept and believe. He explained that critical **reading** involved a careful, active, reflective, analytic reading. Critical **thinking** involved reflecting on the validity of what you have read relating to our prior knowledge and understanding of the world. Critical **reading** does not mean simply close and careful reading. To **read critically**, one must read actively, recognize and analyze evidence upon the page.

As shown by the above definitions, critical reading comes before critical thinking: Once we have fully understood a text (critical reading) can we truly evaluate its assertions (critical thinking). The tools of critical reading are analysis and inference.

In short, critical thinking is the ability to think clearly and rationally. It includes the ability to engage in reflective and independent thinking (Lau & Chan, 2015).

Someone with critical thinking skills must be able to do the following:

- Understand the logical connections between ideas
- Identify, construct and evaluate arguments
- Detect inconsistencies and common mistakes in reasoning
- Solve problems systematically
- Identify the relevance and importance of ideas
- Reflect on the justification of one's own beliefs and values

Related Research

There are some foreign and Thai research papers concerning the assessment of critical thinking of students as follows:

Jariyathitinant (2002) conducted research on Use of Critical Reading Strategies to Promote Critical Reading and Thinking of Undergraduate Students with the purpose of comparing students' critical ability before and after being taught through critical reading strategies. The sample was 25 undergraduate students taking the Analytical and Critical reading course at Naresuan University, Payao campus. The research instruments consisted

of 6 lesson plans and critical reading and critical thinking tests. The findings were as follows: 1. After being taught through critical reading strategies, students' critical reading ability was higher than those tested before being taught and significantly different at 0.01 level. 2. The critical thinking level of most students was 64%, average to good.

Chaiyawong (2009) probed the relationship between the results of the students' grade point average throughout the course and the critical thinking ability of students studying in a Diploma of Dental Public Health Program, Sirindhorn Public Health College, Phitsanulok Province. The purpose of the research was to study the critical thinking ability of students. The sample was 40 students in group number 13/2008. A set of tests was developed by using the concept of Watson and Glaser to collect data concerning critical thinking ability. Data was analyzed by percentage statistics and Pearson's Product Moment Correlation Coefficient. The results of the study found that the critical thinking ability of 50% of students was at a good level, 42.5% of students were at a moderate level, 5% of students were at a low level and 2.5% of students were at a very good level. Regarding the relationship between the results of studying throughout the course and the critical thinking ability of students as a whole, it was found that the relation was positive at a moderate level (.581), the level

of significance is .01. In consideration of each aspect, the relationship between the result of studying throughout the course and the critical thinking ability for evaluation of arguments was positive at a moderate level (.554), and the level of significance was .01. The relation between the result of studying throughout the course and the critical thinking ability for inference was positive at a low level (.441), level of significance was .01. The relation between the result of studying throughout the course and the critical thinking ability for recognition of assumption, deduction and interpretation was positive at a low level (.158, .213 and .284, respectively) without statistical significance.

Terry and Ervin (2012) conducted research on Student Performance on the California Critical Thinking Skills Test (CCTST) to examine the determinants of performance on the said Test. The sample consisted of 96 students at a midsized regional institution located in the Southwest of the United States. The empirical model employed controlled for grade point average, standardized test scores (SAT/ACT), online courses, gender, ethnic background, age, major, and transfer students. Classification as a business major, grade point average, and ability measured via standardized test scores were the three model variables that were positive and statistically significant. The only statistically significant variable with a negative coefficient was the transfer variable,

which controlled for students transferring 18 or more hours from another university or community college. The results indicated that students completing 18 or more hours in the online environment scored approximately five percent lower on the CCTST exam, although the result was not statistically significant. None of the demographic variables in the model were statistically significant determinants of performance on the CCTST exam.

Shaaban (2014) researched the Assessment of Critical Thinking Skills through Reading Comprehension. It was to investigate the assumptions prevalent among educators in the Arab world that the teacher-centered model of classroom interaction, that has dominated the Arab school educational scene for a long time, has produced graduates with limited critical thinking and reasoning skills which are essential for functioning effectively in the modern world. The study examined and analyzed the scores of 425 applicants to an English-medium university on a passage comprehension section of a standardized English language test. The results of the item analysis of the responses were in order to assess the difference in scores on items testing basic comprehension skills and scores on items testing higher order skills. Results of the study showed that test-takers defined fairly well on the factual and relational comprehension items (those relating to recall,

reference, and vocabulary in context) but had considerable difficulty with analytic and critical comprehension items (those relating to inference, tone, attitude, prediction, and evaluation). The study explained the findings within the context of the curricula and methods of teaching used in Lebanese schools and made recommendation regarding the development of analytic, problem solving, and critical thinking skills.

Zin, Wong and Rafik-Galea (2014) conducted research on Critical Reading Ability and Its Relation to L2 Proficiency of Malaysian ESL Learners. Specifically, this study examined the ESL learners' analytical and inference skills when they read two expository texts. A self-developed critical reading comprehension test (CRCT) was used to measure their analytical skills in identifying the writer's purpose and the main ideas in the text. The findings indicated that the students lacked required critical skills, in particular when they were required to identify the writer's purpose and the main idea in the text, which supported the observation and experience of many Malaysian educators and researchers.

Foreign and Thai research concerning the assessment of students' critical thinking has shown both satisfactory and unsatisfactory results. This probably depended on the sample groups, research methodology and research instruments. However, it would be great

to know about the critical thinking skills of Thai undergraduate students in private Thai universities in Bangkok. The results can be used as an indicator of teaching management of analytical and critical reading classes at the tertiary level.

Methodology

Research Objectives

The purpose of this research was to assess the critical thinking of Thai undergraduate students in private Thai universities through an analytical and critical reading test of their ability in: 1) interpreting; 2) making inference; and 3) reflecting on their own justification.

Scope of the Study

Population

The population of this study was 6,436 English major students in the Faculties of Humanities and Liberal Arts in a total of 12 private Thai universities in Bangkok, offering analytical and critical reading courses to their English major students. (Office of Higher Education, 2016)

Sample

According to the Table for Determining Sample Size for a finite population devised by Krejcie and Morgan (1970) and Yamane (1967), the sample size of the unidentified number of population should be about 385-400;

consequently, the researcher selected English major students who studied analytical and critical reading courses in 4 private universities in Bangkok. 100 English major students were sampled from each selected university, making a total of 400 English major students who used to study analytical and critical reading subjects.

Research Tools

After studying the literature review, the researcher sought an analytical and critical reading test passage by selecting the one which contained the familiar content background from which the students could assimilate and accommodate their schema while comprehending the reading selection, making it appropriate to Thai students at the tertiary level. Modifying a reading comprehension worksheet of “The Getaway” by Savage (1966), the researcher wrote the questions to assess critical thinking of Thai students in their ability of: 1) interpreting; 2) making inference; and 3) reflecting on their justification. The test passage was endorsed and modified for this research and was approved by three experts who validated its validity and reliability.

Analytical and Critical Reading Test

The test comprised a reading passage with 15 items of multiple choices questions which aimed to assess the students’ ability in interpreting, making inference, reflecting on their justification with 5 items per each:

Question item nos. 1-5 test the ability of interpreting.

Question item nos. 6-10 test the ability of making inference.

Question item nos. 11-15 test the ability of reflecting on their justification.

Validity and Reliability of the Instrument

Content Validity of the test was evaluated by three experts using Index of Item Objective Congruence (IOC). In the first episode, IOC = 0.84, after correction, IOC = 1 Reliability of the test was done by piloting the test to other 50 students with the same qualification of the sample group. The Cronbach's Alpha Coefficient was calculated to identify the internal consistency by SPSS, and the result was 0.92.

Data Analysis

A test on Analytical Critical reading was given to English major students in 4 private

universities in Bangkok from totally 12 private universities which offer this course to their English major students to examine their critical thinking skills in: 1) interpreting; 2) making inference; and 3) reflecting on their justification.

The collected tests were checked for the right answers and analyzed by mean, standard deviation and statistical analysis of variance (ANOVA).

Indication of the test score

1-5 indicate that the student has a low level of critical thinking.

6-10 indicate that the student has a moderate level of critical thinking.

11-15 indicate that the student has a high level of critical thinking.

Results

The analysis of the data was done through the students' test scores in an analytical and critical reading test. The result of the data analysis is presented in the following tables.

Table 1 Analysis of the students' total average test score (mean score) on interpreting, making inference and reflecting on their own justification

N = 400 (100 / university)

Critical thinking skills	Mean	Std. Deviation
Interpreting (5 Marks)	1.95	1.15
Making inference (5 Marks)	1.83	1.24
Reflecting on their own justifications (5 Marks)	2.15	1.38
Total (15)	5.93	2.67

Table 1 shows that the students' mean score on interpreting was 1.95 with a standard deviation of 1.15, on making inference was 1.83 with a standard deviation of 1.24 and on

reflecting on their own justification was 2.15 with a standard deviation of 1.38. The total mean score was 5.93 with a standard deviation of 2.67.

Table 2 The comparison of the total average test score of the 4 universities

University	Mean Score (From 15 marks)	Standard Deviation
1	5.85	2.61
2	7.20	2.76
3	5.37	2.59
4	5.30	2.27
Total	5.93	2.67

Table 2 shows that the scores from the analytical-critical reading test were separately computed for mean and standard deviation. The mean and standard deviation

of the 4 universities were 5.85/2.61, 7.20/2.76, 5.37/2.59 and 5.30/2.27 respectively. The total mean score and standard deviation of the 4 universities was 5.93/2.67.

Table 3 The significance of multiple comparisons of total average test score between the 4 universities

University	Compared to Other Universities	Result of Significance (p-value)
1	2	0.000
	3	0.187
	4	0.131
2	1	0.000
	3	0.000
	4	0.000
3	1	0.187
	2	0.000
	4	0.847
4	1	0.131
	2	0.000
	3	0.847

Table 3 shows that University1's mean score was different from that of University2 at < 0.001 level of significance but was not different from those of the others. University2's mean score was different from those of the other universities at < 0.001 level of significance. University3's mean score was different from that of University2 at < 0.001 level of significance but was not different from those of the others. University4's was different from that of University2's at < 0.001 level of significance but was not different from those of the others.

Discussion

The findings of the study are discussed as follows:

1. The scores from the analytical-critical reading test of the 4 universities were separately computed for mean and standard deviation. The mean and standard deviation of the 4 universities were 5.85/2.61, 7.20/2.76, 5.37/2.59 and 5.30/2.276, respectively. The total mean score and standard deviation of the 4 universities was 5.93/2.67.

From the mean score of analytical and critical reading test of the students, it can be interpreted that the ability of Thai undergraduate students on interpreting, making inference, and reflecting on their own justification was at a significantly low level. The total mean score was only 5.93, out of the total 15. The result was parallel to the studies carried out by Shaaban

(2014) who researched the assessment of critical thinking skills through reading comprehension of 425 applicants to an English-medium university on the passage comprehension section of a standardized English language test. The results of the study showed that the test takers had considerable difficulty with analytic and critical comprehension items (those relating to inference, tone, attitude, prediction, and evaluation).

The results of the study also indicated that the critical thinking of Thai students, on the whole was at a low level with the total mean score was 5.93 (out of 15), with the standard deviation of 2.67. The reasons for low critical thinking could be analyzed in two ways.

The first reason was that Thai students could not understand the reading passage because they didn't understand English grammar (main clause, subordinate clause, phrases, part of speech, etc.) and the meaning of vocabularies (prefix, suffix, stem, context clues, etc.), so that they weren't able to do the test correctly. Thus, the test was too difficult for them. In this case, it's time to accept that teachers need to encourage students to memorize and understand English grammar and vocabulary meaning.

The other reason could be that the students might understand the text, but they were not familiar with analytical and critical questions; thus, they could not answer the

questions of interpreting, making inference, or reflecting on their own justification because they are not used to those types of questions. In this case, if teachers always provide them with such kind of questions, students will be able to answer analytical and critical questions and practice to think analytically and critically.

Such findings agreed with the result of PISA Test 2015 (OECD, 2016) which announced that the PISA's reading mean score was 493, and that of Thailand was 409 which was below average and six marks (-6) lower than that of previous assessment (OECD, 2016). Thailand's ranking was at no. 55 out of a total of 70 countries. This standing indicates a relatively inferior situation concerning the English teaching and learning system in Thailand.

The same finding was found by Zin, Wong and Rafik-Galea (2014) who conducted research on Critical Reading Ability and Its Relation to L2 Proficiency of Malaysian ESL Learners. Specifically, their study examined the ESL learners' analytical and inference skills when they read two expository texts. A self-developed critical reading comprehension test (CRCT) was used to measure their analytical skills in identifying the writer's purpose and the main ideas in the text. The findings indicated that the students lacked the required critical skills, in particular, when they were required to identify the writer's purpose and the main idea in the text, which support

the observation and experience of many Malaysian educators and researchers. This finding has direct implications on reading development in Malaysia (Zin, Wong & Rafik-Galea, 2014).

All the above research results confirmed that students did not do well in analytical and critical reading tests, thus indicating that their critical thinking was at a low level.

2. It was found that among the students of the 4 universities, the students of university 2 had achieved higher scores than the other three universities at < 0.001 level of significance. (Ref. Table 2 and 3) Such a remarkable difference was very interesting and a further study is needed to find out the causes of the result. According to the theory concerning critical thinking, the reason for the remarkable score may come from the better background of the students (Schema Theory). Other reasons are perhaps based on the university policy (using English as a medium of studying, providing English language environment, arranging English language activities, etc.) which supports English language learning.

Conclusion

The relatively low level of critical thinking of Thai undergraduate students exposed a relatively ineffective teaching and learning situation in Thailand. Although it is a reflection from analytical and critical reading class, it can

be inferred to the larger whole of our society. It shows that Thai students have difficulty in interpretation and inference making and so, they may lack critical judgment when confronting complex situations. It is important to rectify this situation, as the prime minister of Thailand is promoting the goals of Thailand 4.0. The 4 objectives of Thailand 4.0 are Economic Prosperity, Social Well-being, Raising Human Value and Environmental Protection. (Royal Thai Embassy, Washington D.C., 2015). We will never accomplish these objectives if our citizens still lack critical thinking skills which are a crucial element of the country's development. It's time for all to be alert to the benefits of enhancing critical thinking in Thai students. This research found that critical thinking is often adopted on a nominal basis only as it sounds modern and matches with the present ethos of modernization. However, the present programs to inculcate critical thinking skills in Thai students are still unrealistic and unsuccessful. Teachers need to study and to be trained in how to cultivate critical thinking skills in learners. Teachers must not only provide the exercises which force the students to apply their critical thinking skills in their answers, but also guide them to apply their critical thinking skills in their real lives. Therefore, teachers seem to be the key element in fostering critical thinking skills in their students. The final result of the research claims that teachers must realize that their reading class

is a very important basis in nurturing critical thinking in their students.

Recommendations

According to the findings of this study, the following recommendations are proposed for more effective analytical and critical reading classes to enhance the students' critical thinking as follows:

1. Since the study found that Thai students have a low critical thinking level, it's time for teachers of reading subjects to focus on enhancing their students' critical thinking by changing their traditional way of teaching to implement active teaching strategies and by asking questions as well as arranging activities that create analytical and critical thinking among the students. Teachers should train the students to be familiar with such kinds of activities and questions and be able to apply what they learn from reading class to their real life. It is teachers' responsibility to make the teaching of critical thinking skills more practical and concrete to the students.

2. Based on the findings from this study, the mean score of the analytical and critical reading test of university 2 was higher than those of the other 3 universities with a level of < 0.001 significance. It is interesting to study why and how the students of this university got higher scores than the others. The study of a more successful university can be used

as a model of the best practice to develop the effective English teaching, especially in analytical and critical reading classes to create more and more students with critical thinking.

3. Cultivating critical thinking in reading classes should be started at an earlier stage of education. Thus, the government through the Ministry of Education should pay attention to make it as a national policy. Teachers must be educated, trained, and supervised to implement those teaching strategies to create critical thinking among the students.

It's time for the Ministry of Education to improve work on fostering critical thinking in Thai students; first, by training teachers to train their students not only in English reading subjects but also in every field, and in every subject. Critical thinking skills are the key to developing our country and making our country competitive with other countries in this digital era; therefore, our society is in need of qualified teachers who are ready to be responsible for such an important task. The Ministry of Education must work on this problem.

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