The Development of Critical Thinking for Undergraduate Students: A Case Study in Vietnam

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

In several decades recently, critical thinking is a high-ranked cognitive ability which plays a very important role in improving the effectiveness of teaching and learning activities. With the peculiarity of tertiary education which provides training and preparation for students before entering the career world of their choice, the development of critical thinking becomes more necessary and inevitable in order to perfect the students' learning and working ability. The development of critical thinking for students has been paid attention in Vietnamese education system to support students to better their thinking capability.

1. INTRODUCTION

There is a variety of concepts about critical thinking which have been discussed in numerous studies. With regards to this, the concept of self-actualization and reasoning to make judgments is common in most of the definitions of critical thinking. In particular, Michael Scriven and Richard Paul stated at the 8th Annual International Conference on Critical Thinking and Education Reform (1987) that critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning or

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communication, as a guide to belief and action. Besides, Moon (2008) made a statement that critical thinking is a growth progression with a longitudinal dimension, which acknowledges a person's opinion and boost its involvement to formation of new knowledge [1]. Additionally, Paul and Elder [2], from the Foundation for Critical Thinking, defined critical thinking as "the art of analyzing and evaluating thinking with a view to improving it". As Fisher [3]; Mason [4]; Rainbolt & Dwyer [5], critical thinking is a high – level thinking capacity based on scientific arguments and reasoning that explains and evaluates what people receive through interacting with other. In the process of receiving information, students will always ask why, how, whether is it reasonable or not. Such questions are always asked by the students themselves beforehand, then they would seek the cooperation or support from those around to help verify their understanding or opinions. At the university level, learning requires students to go beyond the limit of passively receiving and remembering information, therefore, students need to cooperate with classmates, teachers and their surroundings. Carter [6] suggested that, in order to develop critical thinking for undergraduate students, we should rely on Bloom's six-tier cognitive tower; in which, three higher levels of cognitive level are the target of developing critical thinking for undergraduate students.

On the other hand, Leicester [7] indicated that the main goal of higher education is to help students work and research by analyzing and critical thinking in the context of variable situations. Therefore, in addition to providing knowledge and information for students, teachers need to clearly recognize their role of guiding students to ask questions, find answers and reflect their own learning progress. Thus, in the process of teaching and learning at university level, teachers should guide students to acquire knowledge and build their own foundation through critical thinking and active engagement in class. At the same time, students must define their learning goals and discover new knowledge by themselves. It is also an effective solution to help students practice their lifelong learning ability. Critical thinking is a core academic skill that assists undergraduate and postgraduate students to question or reflect on their own knowledge and information presented to them. Concerning this, Norris [8] asserted that students need not only the ability, but also a critical spirit. In addition, critical thinking has a strong

relationship with argument, meta-cognition and problem-solving of which purpose is successively to convince with reasons, to acknowledge the aims of class tasks or instructions and to develop the ability to determine crucial elements in certain given input [9].

The development of critical thinking in educational environment requires both teachers and students to have a basic and thorough understanding of this cognitive ability. At the same time, it is necessary to foster the necessary roles of critical thinking development in higher education. In particular, to develop critical thinking for undergraduate students, educational environment should basically ensure both necessary and sufficient conditions. In this situation, both teachers and students need to be concerned and adhere to certain principles to create a teaching environment that could well stimulate critical thinking development. However, pragmatic practices showed Vietnam's educational environment has many difficulties in this field. This paper aims to clarify the nature and importance of critical thinking development; followed by proposing a number of strategies to help teachers and students apply critical thinking in teaching and learning activities, from which the teachers would help students to gradually form and develop this ability.

2. METHODOLOGY

With the target of investigating the importance of critical thinking and its effects to students' study styles (active or passive learners), a questionnaire was drawn up. The first 2 questions aim to measure how much undergraduate students recognize the importance of critical thinking (giving opinion and clarifying ideas by evidence). The third question identifies each undergraduate student's learning style by choosing the option that is most likely his/her study habit. Question 4 is used to explore students' own evaluation about their working method in learning English. In the fifth question, eight descriptions which are divided into 3 categories arranged in a table aim to find out the frequency of using critical thinking skills among students, students' ability of making connections and the frequency of proactive revisions and evaluations among them. The last question reflects the student's agreement or disagreement with 4 descriptive statements to affirm undergraduate students' involvement in approaching a problem and solving difficult tasks. Before officially administered, the

questionnaire was trialed by the supervisor and 30 sophomores majoring in English. Our questionnaire was distributed to undergraduate students at universities in Vietnam. After 15 days of collecting answer, we received 805 responses from the participants. The data was analyzed using SPSS program.

3. RESULTS

3.1 The Importance of Critical Thinking

Fig. 1 demonstrates students' tendency to answer lecturers' questions. As can from the chart, 62% of respondents choose to raise their own opinion when they are asked by lecturers. It is important to giving their own way of thinking that can indicate they are a critical thinker or not because critical thinking is "making reasoned judgment". Meanwhile, 28% students say that they would rather follow others' ideas than offer another opinion. In addition, the last group which takes up 10% refuses to neither giving opinion nor following other students. Although the quantity of those who are quite considerable, students are becoming more and more confident to rise their thoughts as well as questions, and lecturers also encourage them to feel free to express their viewpoints. Indeed, critical thinking skills help undergraduate students to think about the issues and talk about their perspectives.
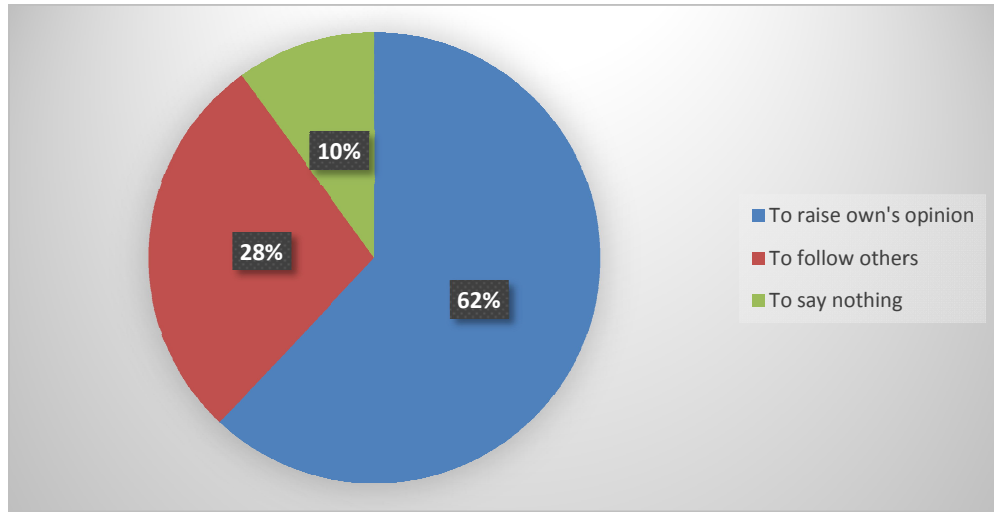

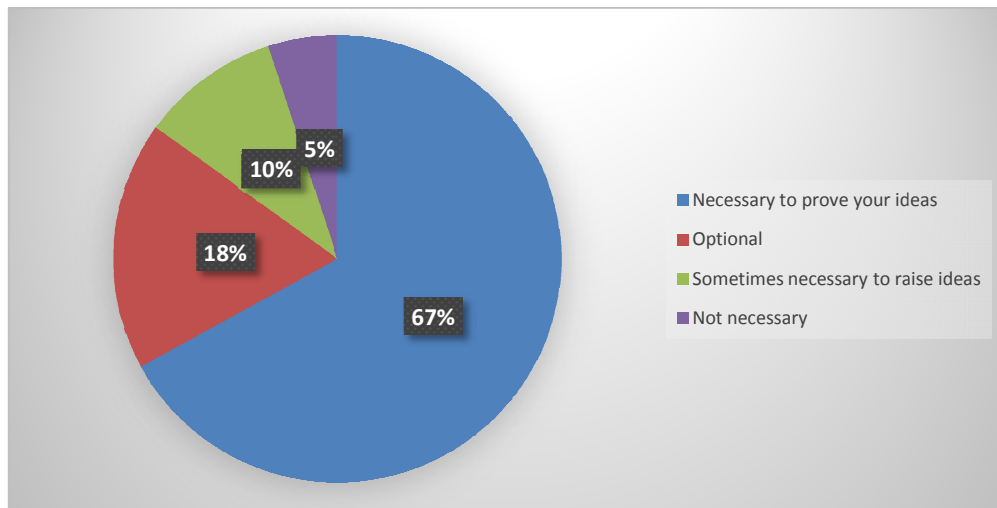**Fig. 1. Students' tendency to answer lecturers' questions**

Fig. 2. The importance of giving evidence

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Fig. 2 shows the importance of giving evidence. As a consequence, more than half of the respondents (67%) claimed that it is necessary to prove their ideas by giving evidence. In particularly, students are taught to give examples to support almost every idea, opinion as substantiation illustrate students' viewpoint clearly. However, there are still a considerable number of undergraduate students which take up 18% assume that evidence is sometimes necessary to clarify their ideas. After that, 10% of students choose optional which means they can choose to give evidence or not. Last but not least, 5% of students say that proves are not necessary when they present their ideas to others or in their work. Similar to the findings, many experts on critical thinking skills have pointed out that evidences are one of the most important elements in critical thinking skills. By using evidences, students can enhance their idea and make their writings and presentations more persuasive and more interesting. Additionally, critical thinkers know how to take advantages of the evidences they used to make their work logical and to secure their aim and the using of supporting evidences will intensify the argument. Evidences can be statistics, experiences, stories or anything that help the writer presents the content in a logical way.

Based on students' way of thinking, we have conducted this question to assess whether they are critical or not through their study habit. As a result, the two first options which are "read and reread the text, take note and complete the homework" and "assume that the lecturers always give accurate information and follow the instructions" are 45% in total. These two answers are representative for the 'not critical thinkers' as

they do not require further understanding or researching. In addition, students' thoughts are narrowed and they have tendency to follow the instructions. At a matter of fact, this situation has begun since they were high school students because when they learn, lecturers direct students' thinking process to the way they want, the way which is more 'correct', more 'precise'. However, there is a change in students' study habit when they enter new learning environment. At two last options which are 55% in total, student's study habit has become more critical since it acquires students to look for more information about the lesson, which can help them consolidate their knowledge.

3.2 Frequency of Using Critical Thinking Skills among Undergraduate Students

The frequency of using critical thinking skills among undergraduate students is depicted in Fig. 3. It can be seen that 40% of participated students always think about what they learned from writing a paper or completing an assignment and 20% of them care about how the information they read can be used or applied in each lesson while. On the contrary, more than 1 in 4 responders choose 'never try to figure out why an assignment was given', while 13% of them hardly ever focus on the applicability. It points out that students are much more curious about the lesson's practical result than the initial reasons why teacher give them the assignment in every lesson. Thus, critical thinking skills lead students to the more active way of fulfilling the given tasks and that is also the reason why students pay much attention on what they gain from doing activities and working on assignments.
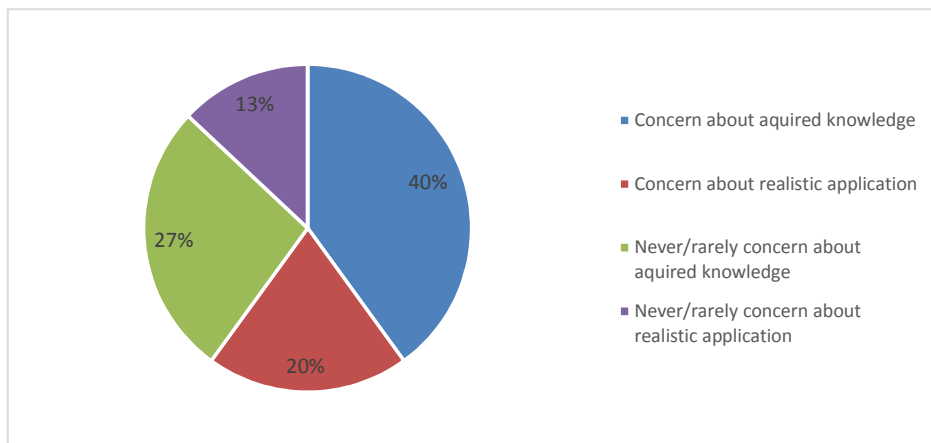

Fig. 3. Frequency of using critical thinking skills among undergraduate students

3.3 Students' Ability of Making Connections

Fig. 4 displays the frequency of making connections and simultaneously shows the ability of liking ideas between lessons among students. A majority of students (40%) affirm that they make connections between lessons for more than 3 lessons per week. Moreover, 35% of these admit that they have the attempt of finding the relationship between a newly assigned chapter and the previous assigned one. The statistic decreased in the last option 'I try to see how my instructor's class lectures fit together' (15%). On the other hand, the number of students who never make any links is quite small (10%). As a result, it may indicate that students

at universities in Vietnam have the awareness about the great importance of making connections between lectures. Once again, making connection is one of the most particular skills of critical thinking after students receive an amount of information. Once students have that ability, it emphasizes that they are really zealous and active in class lectures.

3.4 Students' Approach to a Problem and Solving Difficult Tasks

Fig. 5 displays students' attitude towards approaching problems and finding solutions for difficult obstacles. As can be seen from the chart, 28% of participated students affirm to have various ways to approach problems while 20%
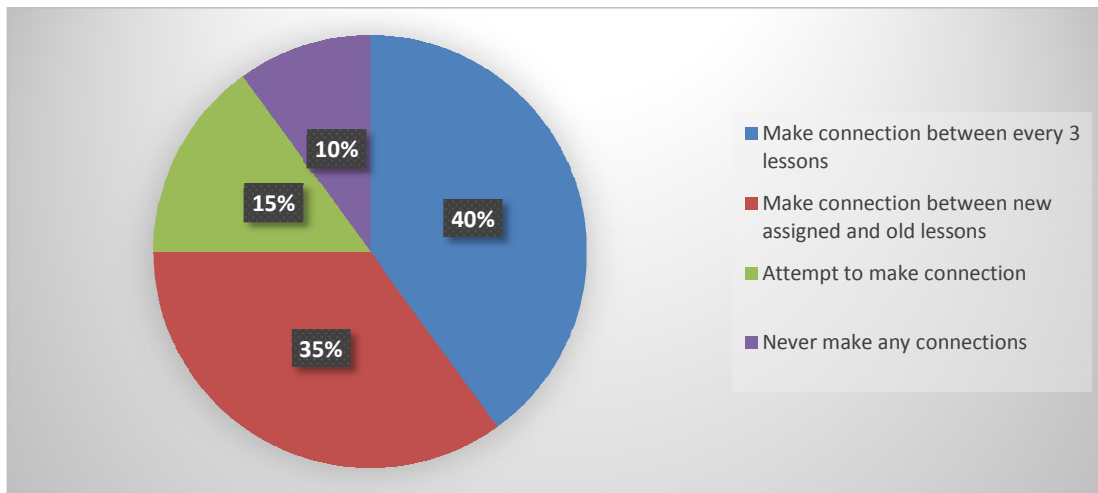

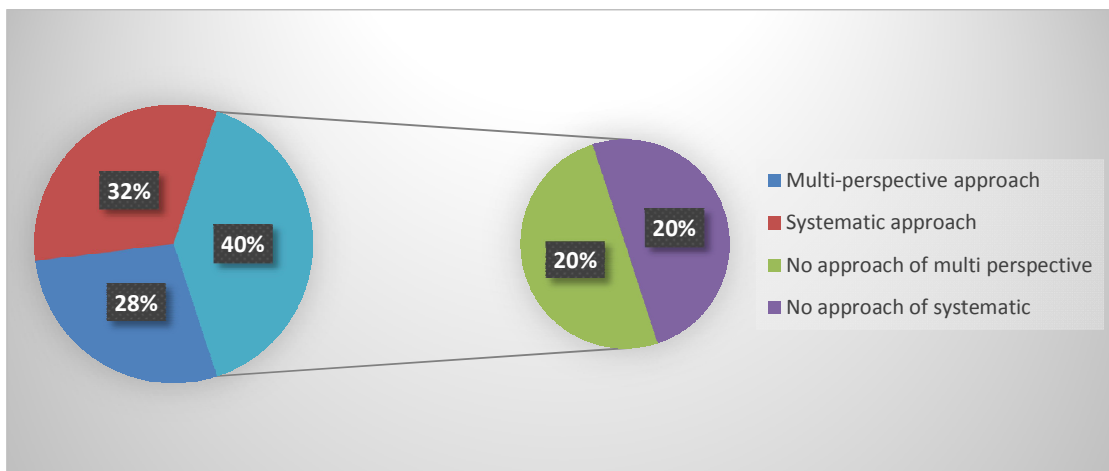
Fig. 4. Students' ability of making connections

Fig. 5. Students' approach to a problem and solving difficult tasks

think that they do not know how to look at problems in many aspects. On the other hand, 32% of students consider that they have logical thinking and 20% suppose that they are not equipped with systematic thinking. The spitting number shows the struggle of many students in face of school problems.

The other two descriptions inquire how students involve in class with some difficult tasks. The data shows that the majority of students (97%) are not sure how often they engage in thinking about onerous tasks and only 3% believe that they enthusiastically joy to think about difficult tasks. Apparently, most of them struggle with proving their opinion and lack of persuasive skills. This reveals that most students are still quite passive, they do not intend to deal with the problem but perhaps waiting for the lecturers' answers.

4. DISCUSSION OF STRATEGIES TO DEVELOP CRITICAL THINKING FOR STUDENTS

4.1 Creating Debates with Specific Teaching Context and Content

Transforming classroom into a "miniature society" was suggested by Ten Dam and Volman [10] as the researchers discussed strategies for developing critical thinking. It can be seen that the result of practicing and developing among society through concrete actions is based on applying what is learned. Therefore, classroom needs to be a society under different contexts or situations to help students verify or practice the knowledge learned from the school.

Yet how to create effective debates in the process of organizing teaching and learning? Ten Dam and Volman [10] proposed the following recommendations: (1) The content of the discussion must discuss open topics so that both teachers and students can understand in various way. Depending on individual's knowledge and development environment, students can deduce and analyze based on what they understand; (2) The content of teaching should be controversial. This would create obstacles for both teachers and students, but also an opportunity to think and reason in different ways. Different opinions and understandings would be nurturing conditions for students to gain new knowledge, possibly the

understanding would not be perfect yet be different than what they already knew [11]. Finally, the teaching content would provide variety of knowledge range, which greatly support the development of critical thinking. In this day and age, knowledge is modified and discovered over time and space. This would be an important condition to help the teacher develop a debating topic to help students develop critical thinking.

4.2 Always Respond to Self-reflection and Standardization of Thinking

Students need to engage themselves in the process of learning and creating products for themselves through strategies and learning methods. They themselves need to develop a circling process from planning, action and then self-reflection on their own results to adjust and then apply again. As Nelson [12] stated, self-reflection of personal knowledge is an essential skill to help students develop their critical thinking. Learning through self-study and knowledge acquirement, then reflecting and contemplating for better methods and more knowledge, would be effective in modern education. In order to reflect on their own learning, Nelson also asked students to be flexible in how they exchange and criticize their classmates about what they learn. This would require students to understand what they have learned and discuss or acquire from their peers new perspectives in order to improve themselves. It is undeniable that learning through self-reflection by comparing to others is extremely helpful and valuable.

The standardization of critical thinking is expressed by any argument and reasoning on learning issues which require accuracy, reliability, thoroughness and clarity [4]. In specific, the argument should be evidence-based on scientific grounds so that personal views should be both subjective and objective. Thus, students are able to present their perspectives in a convincing way to others. However, in order to ensure this standard, learning material is extremely important. Indeed, learning materials system and the results of professional scientific research would provide solid foundation for students to learn and confidently protect their understandings. This source of materials should be equipped by teachers and students themselves for the teaching process at university level.

4.3 Develop a Spirit of Voluntary Cooperation

In the process of developing critical thinking, the recognition and acceptance of scientific-based ideas is prerequisite condition [11]. Cooperation is an engine, a condition that helps teachers and university students accept conflicting ideas that may not appropriate to their knowledge. When we achieve the spirit of cooperation, we would not hesitate to exchange and solve problems in the most general, best suited way to the learning context, thus critical thinking will be better developed. According to McDowel [13] and Johnston [14], when we give students almost absolute freedom to receive and express opinions, they would gradually become familiar with receiving different ideas. Since then, students also gradually form the habit and spirit of cooperation. Conversely, if cooperation is not achieved, personal opinions would not be shared.

However, the spirit of cooperation needs to be formed voluntarily as a natural reflex in the learning process [14]. It was proven that education in Vietnam has many shortcomings, where the attitude and spirit of self-study of students in general and university students in particular are an outstanding issue. Teaching practice which requires students to cooperate to solve learning problems are outside common framework and also restraint. Therefore, it is difficult to develop critical thinking because cooperative motivation is now the evaluation of teachers, not the needs of the students themselves. In the proposals of strategies for effective development of students' learning, many scholars agree that cooperation is necessary but must be voluntary and stem from the students' needs. That is, students need to be motivated to cooperate and be cultivated in a collective environment. In order for students to cooperate voluntarily based on the need to improve their knowledge, educational managers and teachers play an extremely important role. In other words, the training program needs practical content and teachers need to convey knowledge in a lively, practical and effective way.

4.4 Need to Select and Skillfully Combine Active Teaching Methods

Teaching methods such as group discussion, thematic reports, teaching issues, role-playing, project teaching, etc. need to be applied skillfully in the process of developing infrastructure for students. These methods play an important role in improving critical thinking since they create many opportunities for both teachers and students to debate, exchange and learn from each other through positive and proactive practice in an academic environment. Many studies have concluded that the process of knowledge acquirement would be more effective if students exchange knowledge and self-systematic information collectively. Specifically, Paul [15] indicated it is necessary for students to find problems arising from knowledge acquisition; then brainstorm and debate in order to find solution. He said that critical thinking development should not only be one of education objectives but also a specific goal, which means to specify in each context and learning situations. Moreover, the development of critical thinking should pay attention to teaching and learning quality. In other words, we need to pay attention to develop independent thinking ability for students so that they can grow in this constantly changing world. It is completely different from teaching the systems of knowledge and methods to memorize or solve problems in some hypothetical situations. When students miss out of those hypothetical contexts, they would feel confused and not able to solve the problem.

Thus, in applying various organizational infrastructures and teaching methods, teachers need to pay attention not only to assume the contexts but also to let students think freely and visualize specific context by their own understanding. This would help students have more opportunities to get different ideas whether they are sympathetic or contrary to the raised problem, so they have more opportunities to experience reasoning logic and criticism from classmates [12]. This also implies that modern education would not emphasize the 'right' or 'wrong' answers but pay attention to formulate scientific conclusions. However, most forms of classroom organization and teaching methods, whether traditional or modern, have both advantages and disadvantages, so the selection and application should be done by the teachers in a skillful and flexible way to match the content, context, and educational objects. Thus, education as well as critical thinking develop-ment can achieve the expected results.

4.5 Classroom Interaction is Inevitable and Necessary

In a modern learning environment, teachers are no longer merely communicators through

teaching means, they need to be 'facilitators' to create learning situations through debate. In the debates, the teachers should provide students almost absolute freedom to express their opinions with what they hear, read in respect of others [13,14]. Apart from participation in general teaching activities, interaction includes listening, discussing or arguing and acquiring specific issues/ topics upon each individual's processing time and understand. At that time, teachers are both members of the teaching process and the referee of the learning situation since they would be able to recognize and conclude what students need to receive. Through such interactive teaching process, both teachers and students have the opportunity to project others and reflect themselves. Behind the process, students should take a reflection upon what they have done, from which the teaching and learning process will develop more progressively.

As Grant [11] had acknowledged, learning through interaction and cooperation with others is practiced more often because it is consistent with the goals of active, positive and effective learning environment. Studies have also demonstrated that interaction enhances concentration and improves learning outcomes [16]. Therefore, teachers should create interaction and put students in situations so that they can think and see the problem themselves. After that, the learner would in turn solve problems taken upon their responsibilities and understanding. Students would not only recognize themselves and their learning process, but also analyze and evaluate those things with their classmates. As knowledge is shared through interaction, communication skills and new knowledge are thus acquired more sufficiently.

5. CONCLUSION

In order to develop critical thinking, educational policy makers, educational managers, teachers and students need to understand and effectively apply basic and necessary strategies to stimulate critical thinking. In particular, teachers and students are two important subjects to help learning process be done through the process of reasoning and evaluating what they receive. In order to achieve this, students need to communicate and interact with others in an educational environment to solve learning problems.

The development of critical thinking is one of the important objectives in many advanced and modern education systems worldwide. In particular, this thinking ability is extremely important and necessary for university students before entering a profound international career. In such environment, students themselves need critical thinking to affirm and evaluate their own knowledge of other people. In addition, critical thinking also helps students to view problems under different perspectives based on scientific and convincing arguments.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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