

## **Employing affective and cognitive strategies to improve students' critical thinking in learning process**

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This paper discusses the use of affective and cognitive strategies to improve students' critical thinking in learning process. The usually-conducted learning process has not been able to improve students' critical thinking capacities. The process as such tends to transfer of knowledge rather than provoking critical thought, and here, students merely learn for grades instead of knowledge. Some of the academic attempts to overcome such learning problems are employing affective and cognitive strategies. Through one of affective strategies, developing intellectual courage, students learn to think independently and fairly. However, this affective strategy must be supported by cognitive strategies consisting of two parts: macro abilities and micro skills. Reasoning dialogically as one of the macro abilities enables students to develop their horizon through exchanging different viewpoints, and exploring ideas within different points of view. Giving reasons and evaluating evidence and alleged facts are categorized into one of the micro skills, which are able to foster students in examining and evaluating reasoning components, making conclusions based on the evidence and factual claims though not everything offered as such should be accepted. Through employing the three strategies, students seem 1) to have courage not only to think actively and critically but also to admit different viewpoints or ideas fairly; 2) to be able to engage in fruitful and explanatory dialogue; and 3) to be able to insightfully discuss evidence relevant to the issue on which the conclusions are based, also to be comfortable being asked to give reasons.

*Key Words: affective and cognitive strategies, critical thinking, learning process*

### **Background**

Viewed from the lecturers' side, common learning process is seemingly conducted to transfer knowledge from their mind to their students, no matter whether or not the students understand let alone enhance their critical thinking. However, it is rather different if viewed from the students' viewpoints, the learning process is apparently followed to get grades. Learning process focusing on the transfer of knowledge and grades does not assist students much in improving their thinking capacities. The process as such tends to be far from provoking critical thought. Language education should be designed to enhance people critical thinking (Alwasilah, 2003: 65)

To overcome such a problem, some of the academic attempts should be made through incorporating dimensions of critical thought in learning process. These dimensions contain include affective and cognitive strategies that should be employed in every single learning process (The Critical Thinking Community, 2009). The two types of strategies are essential in creating conducive classroom atmosphere to improve students' critical thinking. This alternative learning paradigm has been applied in the subject of *Seminar on the English Language* in which the writer plays double capacities, as a lecturer and an observer.

The purpose of this subject is to foster students in writing research proposals for their *skripsi* (final papers) which later on should be presented in the seminar of *skripsi* proposals in front of the reviewers prior to taking the *skripsi* as their final assignments. This seventh semester subject is therefore designed to train students to write research proposals for *skripsi* included organization of *skripsi* proposals covering background, statement of problem, objective, literature review, and research method. On the first half of the semester, the students are expected to be able to write the first draft of the proposal, and on the second half of the semester, they must present what they have written (on the first draft). During this individual presentation, each student presenting his/her proposal is engaged in explanatory dialogue, and by the end of the semester the students should revise the draft based on the feedback, comments, or suggestions both from the lecturer and from the peers as he or she conducts the presentation in front of the classroom. After that, they must submit the revised proposal as the final drafts of the *skripsi* proposals as scheduled.

Conducting academic presentation in front of the classroom for many students is still considered to be something challenging. It needs not only practicing and preparing materials to deliver but also understanding operational strategies to improve the quality of discussion which at the same time can enhance students' thinking capacities. Three strategies relevant to the subject, i.e. *Seminar on the English Language* are employed. They are 1) strategy 6 (S-6), developing intellectual courage, 2) strategy 25 (S-25), reasoning dialogically, and 3) strategy 33 (S-33), giving reasons and evaluating evidence and alleged facts. The first one is included into affective strategy while the last two ones are categorized into cognitive strategies.

On the basis of what has been elaborated above, this paper will focus on implementing the aforementioned strategies in learning process. To begin with, the writer will first discuss an overview on critical thinking, elements of critical thinking, and instructional strategies of critical thinking in general. From this point on, the writer will suggest the three selected strategies to be implemented through related operational strategies.

## **An overview on critical thinking**

### **Definition**

To get an overview on critical thinking, the writer will first discuss the definition of critical thinking itself, and later on the benefits of its. There are many definitions regarding critical thinking depending on the contexts—whether in formal logic courses where it has a precise meaning when applied to arguments or in casual discussions in a faculty lounge about students' struggles to grasp the course content, where the term is used more loosely to simply mean good thinking (Pierce, 2004).

In this limited room, the writer would like to explore two definitions to give a global illustration of the topic under discussion. According to Scriven & Paul (1987), 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 communication, as a guide to belief and action. This notion indicates that critical thinking is an active process of thinking basing on, or based on systematic rational efforts as the foundation of our belief and action.

The aforementioned definition is in line with Elder's (2010), she defined critical thinking as the ability and disposition to improve one's thinking by systematically subjecting it to intellectual self-assessment. This brief definition implies that someone's critical thinking capacity has close relationship with someone's intellectual capacity. She continued that basically human beings are critical thinkers, and the distinction point among them lies on its level ranging from unreflective thinkers to accomplished thinkers. Even she confirmed that the quality of life and that of what we produce, make, or build depends precisely on the quality of our thought.

The two definitions above indicate that critical thinking take some conscious effort as the art of analyzing and evaluating information actively, deliberately, and carefully.

### **Benefits**

To recognize the intended benefits of critical thinking, we have to understand first the goal of critical thinking itself. Since critical thinking is a part of attention in education, its goal must be in line with the education itself. Campbell (2004: 198) stated that many educators, philosophers, psychologists agreed that an important goal of education is the teaching of thinking. Still from Campbell (2004), she added that today's society demands creative, critical thinkers, particularly for students to face a world of a rapid change. In a nutshell, the goal of critical thinking is to improve students' ability to think critically.

From that goal, the benefits of critical thinking for students are 1) improving their thinking about their course work, 2) using sound thinking on tests, assignments, and projects in their courses, and 3) having the strategic, analytical, problem solving, and decision-making skills. Those benefits, according to Paul & Elder (2009), will bring them to be well-cultivated critical thinkers who will eventually have academic capacities in terms of 1) raising vital questions and problems, formulating them clearly and precisely, 2) gathering and assessing relevant information, 3) using abstract ideas to interpret the relevant information effectively coming to well-reasoned conclusions and solutions, 4) thinking openmindedly within alternative systems of thought, 5) recognizing and assessing their assumptions, implications, and practical consequences, and 6) communicating effectively with others in figuring out solutions to complex problems.

### **Elements of critical thinking**

Paul (1995) explained that there are eight elements of critical thinking that should be figured out:

- 1) Purpose, goal, or objective: whenever we reason, we reason to some end, to achieve some objective, to satisfy some desire or fulfill some need
- 2) Question at issue: whenever we attempt to reason something out, there is at least one question at issue, at least one problem to be solved.
- 3) Point of view: whenever we reason, we must reason within some points of view or frame of reference.
- 4) The empirical dimension of reasoning: whenever we reason, there is some "stuff," some phenomena about which we are reasoning.

- 5) The conceptual dimension of reasoning: all reasoning uses some ideas or concepts and not others. These concepts include theories, principles, axioms, and rules implicit in our reasoning.
- 6) Assumptions: all reasoning must begin somewhere, must take some things for granted.
- 7) Implications and consequences: no matter where we stop our reasoning, it will always have further implications and consequences.
- 8) Inferences: reasoning proceeds by steps in which we reason as follows: "Because this is so, that also is so (or probably so)," or "Since this, therefore that."

Those elements of thought are the basic building blocks of thinking that can be articulated as the power of reason.

### **Instructional strategies of critical thinking**

The global concept of critical thinking has been broken down into 35 aspects or instructional strategies, which are divided into two domains of strategies, namely affective strategies and cognitive strategies. Affective strategies consist of 9 strategies while cognitive strategies are still divided into two parts: macro abilities and micro skills which respectively consist of 17 strategies and 9 strategies (The Critical Thinking Community, 2009). Here is the list of the 35 dimension of critical thought:

#### **A. Affective Strategies**

- S-1 thinking independently
- S-2 developing insight into egocentricity or sociocentricity
- S-3 exercising fairmindedness
- S-4 exploring thoughts underlying feelings and feeling underlying thoughts
- S-5 developing intellectual humility and suspending judgment
- S-6 developing intellectual courage
- S-7 developing intellectual good faith or integrity
- S-8 developing intellectual perseverance
- S-9 developing confidence in reason

#### **B. Cognitive Strategies – Macro-Abilities**

- S-10 refining generalizations and avoiding oversimplifications
- S-11 comparing analogous situation: transferring insights to new contexts
- S-12 developing one's perspective: creating or exploring beliefs, arguments, or theories
- S-13 clarifying issues, conclusions, or beliefs
- S-14 clarifying and analyzing the meanings of words or phrases
- S-15 developing criteria for evaluation: clarifying values and standards
- S-16 evaluating the credibility of source of information
- S-17 questioning deeply: raising and pursuing root or significant questions
- S-18 analyzing or evaluating arguments, interpretations, beliefs, or theories
- S-19 generating or assessing solutions
- S-20 analyzing or evaluating actions or policies
- S-21 reading critically: clarifying or critiquing texts

- S-22 listening critically: the art of silent dialogue
- S-23 making interdisciplinary connections
- S-24 practicing Socratic discussion: clarifying and questioning beliefs, theories, or perspectives
- S-25 reasoning dialogically: comparing perspectives, interpretations, or theories
- S-26 reasoning dialectically: evaluating perspectives, interpretations, or theories

### **C. Cognitive Strategies – Micro-Skills**

- S-27 comparing and contrasting ideals with actual practice
- S-28 thinking precisely about thinking: using critical vocabulary
- S-29 noting significant similarities and difference
- S-30 examining or evaluating assumptions
- S-31 distinguishing relevant from irrelevant facts
- S-32 making plausible inferences, predictions, or interpretations
- S-33 giving reasons and evaluating evidence and alleged facts
- S-34 recognizing contradictions
- S-35 exploring implications and consequences

From the 35 aspects above, the central attention from the two big strategies can be learned. Affective strategies are concerned with developing affective capacities including 'academic emotions' that can help improve better learning in general. Cognitive strategies focus on mind empowering through organizing, analyzing, and understanding information in powerful ways.

### **Employing s-6, s-25, and s-33 to improve learning process in the subject of *Seminar on the English Language***

Academically, it is too challenging to apply all of the 35 aforementioned strategies in a learning process. These strategies should be selected as needed based on the type of the subject itself. Three strategies are employed in the subject of *Seminar on the English Language*. The selected strategies include developing intellectual courage (S-6), reasoning dialogically (S-25), and giving reasons and evaluating evidence and alleged facts (S-33). The three selected strategies have different principles like the other 32 strategies that are unable to explore here in detail. The given principles of the strategies will be implemented through operational strategies engineered on the basis of the characteristics of the subject itself.

#### **S-6 Developing intellectual courage**

The principle for this strategy is to think independently and fairly. One must feel the need to face and fairly deal with unpopular ideas, beliefs, or viewpoints. The courage to do so arises when we see the ideas considered dangerous or absurd are sometimes rationally justified (in whole or in part) and that conclusions or beliefs inculcated in us are sometimes false or misleading (The Critical Thinking Community, 2009).

Related to such a principle, the possible operational strategies that may be applied are that students should:

- be encouraged not to be ashamed, nervous, or anxious before and while giving presentation because the would-be audience is their own friends;

- be taught not to be afraid to make mistakes in sharing ideas;
- be motivated to have confidence during the presentation, even the ideas are considered to be absurd and unpopular;
- feel free (relax) during the presentation and be rational so that they may get more horizon than they have already written (in the proposal) in the form of input, feedback, comments, and any related opinions from the audience.

The objective of this S-6 is to encourage students to share ideas and opinions with others freely without being nervous, or overanxious. In doing so they seem to have confidence in speaking in front of the class due to independence of thinking.

### **S-25 Reasoning dialogically**

The principle for this S-25 is that dialogical thinking refers to thinking that involves a dialogue or extended exchange between different points of view. Whenever we consider concepts or issues deeply, we naturally explore their connections to other ideas and issues within different points of view (The Critical Thinking Community, 2009).

The operational strategies that can possibly be applied before, while, and after conducting individual presentation are that students should:

- gather related theories, concepts and if necessary discuss them with their friends;
- be well-prepared on the materials to be presented prior to the presentation;
- make clear, concise, and correct power point as the medium for the presentation;
- prepare for exchanging conceptual opinions during the mutual dialogues;
- accommodate different viewpoints and try to explore them deeply.

The purpose of this S-25 is to train students to conduct dialogues productively. In this strategy, they learn how to accommodate different points of view related to the concepts or theories they use.

### **S-33 Giving reasons and evaluating evidence and alleged facts**

The principle provided for this strategy is that critical thinkers can take their reasoning apart in order to examine and evaluate its components. They know on what evidence they base their conclusions. They realize that unstated, unknown reasons can be neither communicated nor critiqued. They are comfortable being asked to give reasons. They don't find requests for reasons intimidating, confusing, or insulting (The Critical Thinking Community, 2009).

The operational strategies that may be applied before, while, and after conducting individual presentation are that students should:

- anticipate the possible problems (questions) to be asked;
- be comfortable with the questions posed by their friends because the questioning process will make them well-informed;
- be happy with reasoning-based feedback and comments because they will make the proposal better;
- provide the acceptable and logical reasons including evidence relevant to the issue for any questions posed;
- enjoy listening critiques like eating 'kripik' (= chips).

This S-33 is aimed to equip students to reason insightfully. In this strategy, students learn to listen and understand the questions posed or the comments expressed by the audience so that they are able to answer them, or reason with others about evidence-based conclusions.

By applying the three strategies, the writer expects learning process conducted will be able to provoke students' critical thinking. This will benefit the academic atmosphere for the subject that engage learners reasoning dialogically to one another to exchange conceptual or theoretical information communicatively and critically.

### **Conclusions**

After having implemented the three inter-related strategies in learning process for the subject of *Seminar on the English Language*, the writer makes conclusions that this implementation brings about positive changes in learning for students. They seem 1) to have courage not only to think actively and critically but also to admit different viewpoints or ideas fairly; 2) to be able to engage fruitful and explanatory dialogue; and 3) to be able to insightfully discuss evidence relevant to the issue on which the conclusions are based, also to be comfortable being asked to give reasons.

