CULTIVATING CRITICAL THINKING SKILL IN TEACHING AND LEARNING PROCESS

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ABSTRACT

The purpose of this article is to spearhead two objectives namely, to fulfill my assignment and to help our future leaders that are our beloved student to analyze multilogical problem of contemporary in teaching and learning process . Those problem that can be viewed holistically from the top or bird eyes perspective thus manages them using correct tool and try solve from many different angles. Joanne Kurfiss simply define critical as " An investigation whose reason is to explore problem to arrive at the hypothesis that integrate all available information convincingly justified. It is a self regulatory which result in interpretation, analysis, evaluation and inference as well as explanation of evidence, conceptual, methodological or conceptual consideration upon which the judgment is base.

Introduction

Education research activities showed that critical thinking is significantly anchored within the curricular and related teaching taxonomies, but that is not supported and taught systematically in daily instruction. The important of this subject matter for students is to enable them to digest the situation, problem, question in order to sort them out to arrive to a conclusion. With all topic of information have been gathered and analyzed, then the next step is to communicate the reasoning to others in order to justified belief, attitude and value mainly to influence them. This is what we call an argumentation process.

Human values are raise from their culture, each of which has its own tradition, ritual and the norms. When we construct arguments, argues should consider the values held by the culture the opinion belong to. Be very careful with this statement. Misleading or deceptive use of argument can cause great harm to individual as a whole , and it should be governed within a sound , ethical principle.

Critical thinking is a process by which a person tries to answer rationally those questions that cannot be easily or definitively answered and for which all the relevant information may not be available . It is a vital skill in today educational society's, which enable both teacher and students to investigate a situation, problem, question or phenomenon to arrive at a viable hypothesis or conclusion. It include such skills as clearly stating a question for discussion, clarifying the meaning of term, developing and applying evaluation criteria, and evaluating the credibility.

For the purpose of this article , I would like to share with Joanne Kurfiss where he defines critical thinking as " an investigation whose purpose is to explore a situation , phenomenon , question, or problem to arrive at a hypothesis or conclusion about it that integrate all available information and therefore can be convincingly justified. Our teacher and student who has thought critically about an issue will not settle for the apparent or obvious solution but will suspend judgment while seeking out all relevant argument, fact and reasons that will promote good decision making for the benefit of our education process as a whole.

Critical thinking is regarded as vital skill in today's educational society because it prevents both teachers and students from making bad decisions and helps them to solve problems. Good critical thinking also involve developing and applying criteria for evaluation.. In addition to these examples, critical thinking may involve as many others process such as,

- Refining generalization and avoiding oversimplification
- Generating and assessing solution to problem.
- Comparing perspectives , interpretation and theories.
- Reading critical, seeking out information that disagrees with other perspective.

Listening critically, seriously considering views with which one disagrees. The ability to apply these process to a question or issue is what distinguishes the novice thinker from the expert thinker. Novice thinker look for the easiest and most obvious solution, fail to consider possible objection and difficulties , read only sources that agree with their views, and unable to identify what is wrong with faulty arguments . Expert thinker
thoroughly analyze problem before proposing solution, read source that disagree with
their view, anticipate objection to their position, monitor their own effectiveness , and choose the most effective from wide range of possible solution and strategies.

Thinker who are truly "expert" will be prepare to deal with the multilogical

problem of contemporary educational society. Those problem that can be approached from many different and often competing perspectives. These include for example sex education in school, teaching of critical subject namely science and mathematic in english and so forth. Addressing such problem calls for society namely the Education Ministry, Parent and Teacher Organization, Non Government Organization and particular government department. . This are major player and should be comfortable enough thinking across domain, disciplines and subjects. They can easily compare and evaluate competing perspectives, interpretation and theories .

Once you gathered information on a topic and analyze it using these processes, you must communicate your reasoning to others. This process is called argumentation, which involve making argument intended to justified beliefs, attitude and values so as to influence others. It involves constructing cases for and against proposal. An argument is a set of statement in which a claim is made, support it offered and there is an attempt to influence someone in a context of disagreement. A person making a claim is expected to offer further support by using evidence and reasoning. Evidence consists of facts or condition that are objectively observable, beliefs or statements generally accepted as true by the recipients of conclusions previously establish.. Reasoning is frequently express in the form of inferences constructs a rational link between the evidence and claim and authorizes the step we make when we draw a conclusion

Argumentation can be viewed from three different but complementary perspectives each of emphasizes different aspect of argument. The logical perspective views an argument as a set of premises and a conclusion and is primarily concerned with whether the premises are true and the inference is correctly stated. The dialectical perspective describe argumentation as a process of discovering issues , generating alternatives, establishing standard of judgement and withholding a decision until all view point have been stated and mention as a method of influence and considers whether arguers seem aware of the interests and value of the audience and state their arguments appropriately and effectively.

There is nothing much to alarm about Critical thinking. Unconsciously we have been practicing it quite often in our everyday life. It mainly consists of evaluating arguments. It is a purposeful, self regulatory judgment which results in interpretation, analysis, evaluation and inference as well as explanations of evidence, conceptual, methodological, or contextual considerations upon which the judgment is base. Very sad to say that for several reasons, critical thinking is not actually integrated within traditional classroom instruction. It is a very

interesting question whether critical thinking can be trained during formal classes. In late ninety, Malaysia Government has introduce it citizen toward Multimedia super corridor arena. Messages could easily travel to a speed of light which are able to produce a knowledgeable education society, hence critical thinking represents a major qualification. In general, critical thinking is a mental activity of evaluating arguments or proposition and making judgments that can guide the development of beliefs. Reinmann – Rothmeter and Mandi (1998 p 33) found in Delhi study, that experts from economy and education nominated critical thinking as most important skill in knowledge management. Kraak (2000 p.51) saw critical thinking as "an important, perhaps the most important of all present time educational tasks" Within these superlatives, the appeal to school is hidden to educate " critical students " (Lang , McBeath & Hebert 1995) For achieving this complex goal, schools and teachers have to be assisted from educational theory and research.

Educational research activities showed that critical thinking is significantly anchored within curricula and related teaching goal taxonomies, but that is not supported and taught systematically in daily instruction (Patry 1996 p 63) The main reasons for this shortcoming are that teachers are not educated in critical thinking, that there are no textbooks on critical thinking available , and that teachers have no time and other instructional resources to integrate critical thinking into their daily instruction.

Recognizing statement of opinion isn't as easy as it may appear. Many student think that, if they voice an opinion, such as "He is brave, and can back it up with an incident in the story they are reading, then it is a fact, 'says Para Mohrmann, They don't realize that someone else interpret the character and his actions differently and have another opinion. For example, other students may think that instead of being brave , the character is foolish or cruel for killing the animal . To help children to recognize statement of opinion , Mohrmann has ask them to look for adjectives that express judgment , such as brave, funny, strong and kind.

However there has been little work on critical thinking disposition as an independent variable affecting the evaluation of teaching strategies. Perhaps the most

complete treatment or the factor which effect the evaluation of teaching strategy is offered by Husband (1996,1997). Husbands noted that four sets of factors may effect student evaluation of lecture versus small group oriented method of instruction.

- Characteristic of teachers

- Characteristic of courses
- Characteristic of students
- The interaction between these factor such as interaction effects resulting from gender of teacher and gender of student.

As the characteristic of teachers, husbands (1996:p196) suggest that differential academic status may effect evaluation in as much in " the highly didactic situation of the lecture (with it grater potential for exhibitionism and status demonstration) student may expect more lecture rather than small group interaction . Further husbands also suggest that gender of the instructor affect how students evaluate different teaching methods. Students may expect women to rely more on small group method because in lecture "women are more likely to have voice level problem impeding the attainment of audibility (p 195). In term of characteristic of course, Husbands point out potential difference in of subject matter, with some subject better suited to group interaction method and other to lecture. Husbands also point to several student characteristic which could affect evaluation of teaching strategies , three of which are of particular interest are namely Gender difference, Level of commitment to the class and Level of student seniority.

- First husbands content that women are more likely to prefer the more anonymous teaching environment of the lecture as opposed to group interactions, whereas man may prefer group discussion because it allows for the latter to engage in a form of posturing other students.
- Second, those less committed to a particular course might favor lecture method of instruction over group method because lecturing with its top down aspect and frequently large audience condone shyness and permits anonymity, which enable such student to conceal their disenchantment with the course
- Third, students seniority may affect student evaluations. Although Husband examined graduate student, he noted that upperclassman expect more personal service than underclassmen on account of their more elevated status. Hence upperclassmen might resent the personal lecturing mode and favor small group discussions because of the individualized attention they receive .

Most studies which investigate the relationship between critical thinking skills and instruction focus on how teaching strategies affect the development of critical thinking . In this

article , we would like to investigate how student characteristics affect their evaluation of teaching strategies, specifically critical thinking disposition , locus of control, gender, major and class rank using a sample of 66 undergraduates recruited from introductory political sciences class at Truman State University, we found that, contrary to the literature, student who exhibited a disposition toward critical thinking rated lecture methods of instruction higher than students with lesser disposition to think critically. Further political science major rated lecture methods higher than non majors. However locus of control, gender and year in school had no relationships with teaching strategy evaluation.

Recently there has emerged a growing consensus in literature on teaching strategies in favor of "group based" method of instruction for undergraduates over the more traditional lecture method. In particular there has been argued that breaking up the class into small discussion group better severs to cultivate critical thinking skill among students. On the other hand traditional lecture method of instruction cause students fail to learn how to gather, analyze, synthesize or asses information. They do not learn how to analyze the logic of questions and problems they face , and as a result, cannot adjust their thinking to learn (Garside, 1996 p.212).This study differ from previous studies on the relationship between teaching strategies and critical thinking skill in two ways .

First, although the focus in the literature on critical thinking has primarily been on how different teaching strategies affect the development of critical thinking skills, we investigate how characteristics of students affect their evaluation of different teaching strategies .

Second, rather than focus on a single independent variable , we investigate the effects of multiple variables on the evaluation of teaching strategies, critical thinking disposition, locus of control, gender, major and year in school. Based upon the literature which suggests that small group method of instruction are most effective in cultivating critical thinking skills we test the hypothesis that:

- Students with a disposition toward critical thinking will evaluate group based teaching method are more positively compare to the groups.
- Students who have an internal locus of control will more positively evaluate group method teaching than lecture base methods.
- Using a variation of the California Critical Thinking Inventory

The above literature thus suggests the following theoretical expectation, which seek to test in this articles :

1. Student with a disposition toward critical thinking will evaluate group base teaching methods more positively than who lack such a disposition.
2. Student who have an internal locus of control will more positively evaluate small group method of teaching than Lecture based methods.
3. Non political science majors are more likely to favor lecture methods of instruction as opposed to group methods of instruction.
4. There is a difference in the evaluations of first year non first year students of teaching strategies.
5. There is a gender difference in the evaluations of teaching.

For the purpose of this study 66, subjects were recruited from two introductory level political science classes, both taught by the same instructor, early in the spring term of 1998. Signed consent forms are obtained in which the students agreed to participate in the project subject to assurances of confidentiality. Since the sample was recruited from the introductory classes, predictably the majority of the students were first year students (42) with the remaining being non- freshmen (24) mostly second yeas students. Of the 66 students 18 were political science majors, 36 were female (54.5%), 27 were male (41.0%) , 3 (4.5%)did not identified their gender.(2)

By recruiting students from same level classes taught by the same instructor , we were able to control both class subject variation and variation in characteristic of the professor . In other words , we were able to control for some of the factor cited by Husbands (1996) as affecting evaluation of teaching strategies. Namely teachers characteristic , courses characteristic and interaction effects as sources of variation in student evaluation of teaching strategy. This allowed for the focus on characteristic of the students (particularly critical thinking disposition and locus of control) as effecting evaluation of teaching strategies.

Nonetheless, other factor beyond the feature of the students could still affect how students evaluated different teaching strategies. For instant, student evaluate teaching strategies because of attitude about the instructor rather than how they felt about group methods or lecture methods generally. To account for this possibility three precaution were taken.

First, in order to avoid students evaluating the teaching strategy of their instructor,

Students were asked a set of generic question regarding method of instruction. Secondly by conducting the study early in the term, prior to the first grade assignments, we sought to avoid the student evaluations being affected by how the student felt about his or her grade in that particular courses and finally by recruiting from introductory level classes, with mainly first and second year student, we sought to minimize the probable degree of familiarity the student had for the instructor. i.e The student knew what to expect from the instructor and this effect the evaluation of the teaching strategies identified on the questionnaires .

Subjects who consented to participate were administered a questionnaire which include a set of question derived from the California Critical Thinking Disposition Inventory (CCTDI). The inventory it self is comprised of seven sub scales which together measure the disposition to think critically .(Facione, and Sanchez, 1994)

These seven sub scales include:

- Inquisitiveness: This sub scales measure the student's intellectual curiosity and desire for learning even when the applications of the knowledge are not immediately apparent.
- Systematic : This sub scale measures the tendency toward organized orderly and focused injuries to approach problem of all levels of complexity.
- Analyticity: This sub scales measures the propensity to use reason and evidence to resolve problem, and the anticipation of potential consequences of one's action.
- Truth seeking: Measures the courageous desire for the best knowledge, even if the knowledge fails to support or undermines one's preconceptions, belief or self interest
- Open mindedness: Measures the degrees of tolerances respondent has to Divergent views, and the ability to self monitor for possible bias.
- Critical thinking self confidence: Measures the trust one places in one's own reasoning processes.
- Cognitive maturity: The sub scale measures the disposition to be judicious in one's decision making, especially an awareness that multiple solution can be acceptable and an appreciation of the need to. Much has been

discussed about the virtues of epistemological realism and anti realism and their role in defining and teaching about critical thinking.

In this paper, I would to like examine the relationship between the practice of teaching critical thinking and the philosophical debate on realism and anti realism. It appears from the brief look at the debate between realism and anti realism that both sides are putting forward their favorite conception of how to teach critical thinking and how standards of critical thought are to be found, supported by widely differing philosophical positions. Thus both sides already share a common assumption in that they seem to agree that there is a relationship between philosophy position tells how the practice should be. another set tells otherwise. However I doubt that such a relationship is as strong as both sides in the debate seem to presuppose.

On the other hand, Donald Hatcher argues that teachers have an obligation to teach critical thinking , but only in such a way that realism is presupposed. He argues us to embrace the realist epistemology and found teaching strategies on it. That is to say , the intellectual standard constitutive of critical thinking is predicated on the belief that truth is objectively out there and is largely accessible. We can conditions permitting, grasp the truth and as the Greeks say , become one with reality . Hatcher contends that our goals in conducting epistemic activities is first and foremost to find that truth . The teacher's duty in short is to help students learn how to seek and grasp truth, how to come ultimately to know the truth which transcends boundaries of language, culture or locality.

My contention is this:, instead of assuming as the debaters mentioned here to be done , that one must have clear philosophy and be ready to defend it before one knows how to teach critical thinking or grasp the standard of correctness inherent in the practice, what if the strength of the relationship be toned down so that the practice is more independent from philosophical systems ?

Culture is important to the understanding of argument practices, because a person values arise from his or her culture background. Values can be used as premises for argument and are also vital to argument ethics, or standard for good argument. Culture are not necessarily ties to race or citizenship but rather are enacted by people who share common values and life experience. Culture include sub culture, each of which has its own traditional, rituals and the norms. Argues should consider the values held by he cultures and subculture which the audience belong when they construct arguments because different culture assign different level of importance to different values.

Various culture also favor particular styles of argument. Western culture favors the quasi logical style,. Which is rooted ``in science and formal logic. The quasi logical style relates claims to each other deductively and make use of connectives such as “thus” and “therefore” when advancing claim.. Whereas we in Asian, Latino , Africa and native America cultures generally favors the presentational and analogical style of argument.

The presentational style takes a model from poetry and used a rhythmic flow of words and sounds, parallel clauses, and visual metaphors to move the audience through aesthetic appeal. The analogical style makes claims by calling to mind stories or fables known in the culture that imply principles and ideas favored by arguer.

Toward the very last but not least, my very frank advise for those teachers and students who is willing to adopt critical think as a mean, beware of the sensitivity of our opponent. Misleading or deceptive uses of argument can cause great harm toward students ,teachers relationship and overall educational society for that matter. Argument practices should be governed by sound ethical principal. Ethic is defined as the study of what is morally right or just, but sometime this is not easy to determine. This is because the question of what ethical standards should be applied to argument may depend on the culture or situation in which the argument. Regardless of the cultural or ethical perspective one choose for argument, teachers and students should keep in mind that, in any argument situation, there are many diverse value at work, many argument style and strategies available. The prime objective is just to further sound decision making and ethical practice in order to create a friendly situation at school, institution and university a better place to reap wonderful knowledge.

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