Teaching Creative Thinking Skills and Its Challenges, Strategies and Future Implications: A Narrative of IIUM Experience

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Abstract

This paper aims at exploring, discussing and analyzing some major issues in teaching creative thinking skills (CTS) based on IIUM experience.[1] These issues are challenges encountering trainers and lectures in teaching (CTS), strategies to overcome these challenges, and future implications proposed to enhance the process. It is well recognized worldwide that Edward de Bono is a pioneer in designing tools for teaching creative thinking skills since late sixties last century. Therefore, his tools were adopted and incorporated in the syllabus. Tools include six thinking hats, CoRT lessons, and lateral thinking. As such the discussion will be mainly related to those tools. Descriptive, analytical and critical approaches will be used, based on the author's experience in classroom teaching and training CTS settings that were conducted at IIUM for the last ten years. To put this experience in an academic setting, the views of those who wrote on the subject will be sought. Hopefully this study will lead to enhance the performance of the lectures who teach the subject at IIUM; it will also help both internal and external auditors to improve teaching the subject, and other experts in Muslim world will be able to give feedback on the experience.

1. Introduction: The Importance of Teaching CTS

The growing concern about creativity and the rise of the creative class in the West has led to the emergence of new concepts such as "The Creative Ethos." This notable phenomenon is described in the following statement:

> Powering the great ongoing changes of our times is the rise of human creativity as the defining feature of economic life. Creativity has come to be valued – and systems have evolved to encourage and harness it – because new technologies, new industries, new wealth and all other good economic things flow from it. And as a result, our lives and society have begun to resonate with a creative ethos. An ethos is defined as "the fundamental spirit or character of a culture." It is our commitment to creativity in its varied dimensions that forms the underlying spirit of our age.[2]

Other related concepts, expressions and combinations, which include "mega creativity,"[3] "enormous hunger for ideas,"[4] "super competition,"[5]

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[1] *Teaching CTS started at IIUM in semester II, 1996/1997.*

[2] Florida, *The Rise of Creative Class* (NY, USA: Basic Books, 2002), p. 21.

[3] Andrei Aleinikov, *Megacreativity* (Singapore: John Wiley & Sons, 2003).

[4] Hesselbein and Johnston, ed., *A Leader to Leader Guide on Creativity, Innovation and Renewal* (USA: The Drucker Foundation, 2002), Preface.

"idea flavour,"[6] "paradigm shift," "paradigm paralyses," and "paradigm pioneers,''[7] are becoming part of our everyday vocabulary.

However, the issue of teaching CTS is still debatable in the Muslim academia, just as De Bono has indicated in the following statement:

> It is one thing to suggest that new ideas are useful, profitable and exciting, but quite another thing to suggest that something deliberate can be done about having new ideas. No one would disagree with the first suggestion, but most would doubt the second.[8]

2. Challenges and Suggested Strategies

It is important for the trainer and the trainee in teaching and learning CTS to become aware of the challenges no matter how we may differ in classifying them. While discussing a challenge, some strategies will be suggested. Most of these strategies, as indicated, were successfully applied in teaching CTS at IIUM.

a) Challenges Related to Students

2.1.1. *Thinking Language*

Some Islamic Revealed Knowledge and Human Science (IRKHS) students at IIUM prefer verbal thinking, while others (students of Architecture, for example) prefer to use visual thinking (thinking in images). According to the Four-Quadrant Brain Model of Thinking Preferences (FQBMTP), students of a specific discipline do have a specific thinking preference.[9] It leads to another theory, which is the importance of using the Whole-Brain Thinking. We observed that students who are good in visual thinking are more creative and participative. This goes along with the findings of Adams, who noted that using the wrong language in problem solving is an expressive block that hinders creativity. In his opinion, visual thinking is more needed in creative problem solving.[10]

On the one hand it was necessary to teach students of Islamic Revealed Knowledge (IRK) how to use visual thinking but, on the other, students of the Kulliyah of Architecture (KAED) were encouraged to use

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[5]Edward De Bono, *Sur/petition* (Glasgow: Harper Collins, 1995).
[6]De Bono, *Letters to Thinkers* (London: Penguin Books, 1991) pp. 178-181.
[7]H. Scott Floger and Steven LeBlanc, *Strategies for Creative Problem Solving* (New Jersey: Prentice Hall, 1995), p. 15.
[8]De Bono, *The Use of Lateral Thinking* (London: Penguin Books, 1990), p. 21.
[9]E. Lumsdaine, *Creative Problem Solving* (Singapore: McGraw-Hill, 1995), pp. 83-93.
[10]James Adams, *Conceptual Blockbusting* (London: Penguin Books, 1987), pp. 71-74.

their imaginative power. They apply it in their assignments, answering exams and quizzes using the language of images and symbols.

2.1.2. *Making Effort*

Making effort is of great importance in creativity. Asking for creative effort becomes important as well. De Bono stresses:

> Instead of rewarding creative results, it makes more sense to reward creative effort. You cannot demand that someone has a brilliant idea. But you can demand (request) that a person makes a creative effort. Once the effort is there, results will eventually follow.[11]

Sometimes you need to apply the CTS tools to encourage your students in making effort to be creative. De Bono used this method with his Singaporean participants in one session. The idea that came out in applying the tool was by numbering the tables and lettering every position on the tables. The response was wonderful. De Bono interprets:

> It seems that the participants had not been shy but they saw no virtue in pushing themselves forward. The numbering of each position at once gave them an official status and they were then happy to share their thoughts.[12]

At IIUM, I categorise students into groups and give each group a number. Then a competition is carried out while asking for their effort. It works very well. In each round, only one student from each group is allowed to participate. A table is drawn on the white board and both ideas and results of achievements are marked. This motivated the students and pushed them to participate.

Some students gave up easily after using a tool for even after a short attempt when the tool didn't work for them. De Bono stresses the importance of making an effort in learning creative thinking tools by using the following analogy:

> It is important, however, that students of creative thinking should make an effort to get the tools work for them. It would be a pity if they give up after the first try and decide that they are never going to be able to be creative. As with riding a bicycle, the first stages are awkward until you get the hang of it.[13]

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[11]De Bono, *Serious Creativity* (London: HarperCollins, 1996), p. 86.
[12]*Ibid*., pp.18-19.
[13]*Ibid*., p. 190.

2.1.3. Developing Interest

Some students think that teaching and learning CTS is Western in nature. Some others think that we are already creative. Therefore, there is no need for teaching and learning it.

By asking students who enrolled in RKGS 2010 Creative Thinking at IIUM at the beginning of each semester, why they are taking the subject, we received varying feedback. The following are some of the students' answers: "I needed to satisfy the credit hours of my study load for this semester." This has been the stock answer of a number of students of IRKHS over the past three years of my teaching the subject at IIUM. Another comment from students was, "Other students have recommended it to me." Yet other students said, "I am taking it as an elective course to fulfil my graduation requirements." Some of the other replies from students were: "We are following our graduation requirement booklet"; "It will help us understand other subjects in our major area of study"; "It is a Kulliyyah requirement"; "I think it will help me in my future career"; "I like it." There were a few comments that reflected the uncertainty of students such as: "I do not know."

By looking at and analysing these comments, it is quite clear that students' interest, especially in the early years of its offering, varied. This is not entirely unexpected. However, by 2001 some improvement could be seen whereby some students started recommending the subject to their friends, indicating an increase in awareness and interest.

In some cases, not being interested in learning and teaching CTS can be related to what De Bono calls "The sufficiency effect." From my experience at IIUM when we wanted to offer the subject to all IIUM students, a few Deans of Kulliyyahs claimed that it is already subsumed under other subjects. De Bono stresses,

> It is always claimed that 'thinking' has always been taught in every subject and that therefore no new attempt need be made to teach thinking directly as a skill. Manifestly it is true that thinking is taught in every subject. But is this sufficient?[14]

2.1.4. The Assimilation Bias

People view the world through schema-coloured glasses. Hence, it influences our perceptions of reality to make them consistent with what we already believe. "A *schema* is a cognitive structure that organizes our knowledge, beliefs, and past experiences, thereby providing a

[14]Costa Arthur & Lawrence F. Lowery, *Techniques for Teaching Thinking* (USA: Midwest Publications, 1989), p. 110.

framework for understanding new events and future experiences."[15] What happens when we come across information that clashes with our preconceptions? In such situations people utilise one of two processes: accommodation or assimilation. David Levy Says:

> Accommodation refers to the process wherein we modify our schema to fit the data. In other words, we change our pre-existing beliefs so that they make room for new information. Assimilation, by contrast, means to modify the data to fit our schema. Here, we incorporate new information into our pre-existing beliefs, even if it means changing or distorting the information itself.[16]

Non-trained individuals will prefer assimilation. This challenge is overcome by making students aware of this bias and by teaching them the role of perception in thinking.[17]

2.1.5. Failure to Enhance Metacognition

Metacognition is thinking about thinking or subjecting our thinking process to critical analysis.[18] However, De Bono puts more into the concept by considering it as the software for thinking. To him, it involves organising thinking, establishing instructions for thinking, asking the right questions, defining the problem and setting the thinking tasks.[19]

Most students are not aware of what is going on in their minds or in the mind of others in the process of thinking. This challenge can be resolved by enhancing students' metacognition.[20] Mechanism of the mind, how it works and introducing how patterns of thinking are formed, recognised, used, depatterned and repatterned can help students a great deal in this regard.

b) Challenges Related to Environment

Professor Adams James states that "all ideas require an environment that will produce the support necessary to bring them to fruition."[21] According to Gary Davis,

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[15]David Levy, *Tools of Critical Thinking* (MA, USA: Allyn and Bacon, 1997), p. 137, 139.
[16]*Ibid*.
[17]De Bono has discussed perception in almost all his books.
[18]Levy, *Tools of Critical Thinking,* p. vii.
[19]De Bono, *Six Thinking Hats* (London: Penguin Books, 2000), pp. 149-171.
[20]See suggested strategies for enhancing metacognition in A. Costa, *Techniques for Teaching Thinking*, pp. 67-73.
[21]James, *Conceptual Blockbusting* (3rd ed.), p. 69.

> Cultural barriers amount to social influence, expectations, and conformity pressures which are based on social and institutional norms. Cultural blocks include habit and learning, rules and traditions, and more. They include conforming to the ways we think others expect us to behave and a fear of being different. The result is a loss of individuality and creativity.[22]

2.2.1. Non-encouraging Peers and Classmates

Lessons are conducted in classrooms. One pressure that prevents thinking creatively is conformity with the group. Creativity demands individuality which involves taking a risk. In every lesson the student faces a challenge whether to be different or to conform to the group. When you ask specific students for participation, some of them start looking around as if seeking their peers' approval. One way to deal with this challenge is by telling students that lateral thinking is an open ended process and there is no right and wrong. We accept ideas even if they are judged wrong because they may lead to a good idea. If the idea is weak we still can improve it. Lecturers/trainers have to apply and play by this rule in the classroom and it is their responsibility to ensure that all their students feel relaxed and that ideas are welcomed.

2.2.2. The Need for an Enjoyable Atmosphere

Creativity means fun. Students can learn only in an encouraging environment. They react positively only if they feel that the lesson is not a burden and uninhibited. Besides, CTS requires certain changes in mental attitudes. Lecturers should bear in mind that lateral thinking is totally different from vertical (critical, judgmental) thinking. It is very important that they be sensitive to these facts and observe their way of conducting CTS lectures. "Any lesson should be an environment so structured that the pupils can genuinely earn praise. A sense of achievement is vital to any education process or indeed to behaviour in general."[23]

Why is that so? De Bono explains: "With CoRT lessons there are no 'right' answers. Nor is there any fixed knowledge against which to check one's memory or understanding."[24] One strategy to overcome this challenge is to use jokes as examples in illustrating a concept. This helps the students to better understand the concept in a light and joyful manner. Scott Flager and Steven Leblanc used the story of the grizzly

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[22]Gary Davism, "Barriers to Creativity and Creative Attitudes," *Encyclopedia of Creativity* (n. c.: Academic Press, 1999), vol. 1, p. 168.
[23]*Costa, Techniques for Teaching Thinking,* p. 200.
[24]*Ibid*.

bear and the two friends in the jungle as a way to find out what a real problem was. In this story, the two men started to run when they saw the killer bear. One of them started taking off his shoes while running. The other man said, "Whether or not you take off your shoes, you will not be able to outrun the grizzly bear." "I am not outrunning the grizzly bear I am outrunning you," the first man replied.[25]

2.2.3. Our Culture in Dealing with Mistakes

In many Muslim cultures mistakes, regardless of the degree, are impermissible and therefore unacceptable, especially if they are committed in front of a group of people. This phenomenon later became an engendered culture in families, schools and even institutions, which led to fear of risking failure in places where there is a group of people. And fear of taking risk inhibits creativity.[26]

As an effective strategy in overcoming this challenge, teaching CTS at IIUM was linked to the Islamic concept of *ijtihād*. In Islam *ijtihād* is to solve a problem and it is rewarded even if it is wrong.[27]

2.2.4. Even Colours Make a Difference

I had a very remarkable experience in teaching CTS at IIUM. I always observe my students' behaviour in class and try to read their facial language and body gestures. Since I was using colourful white board markers, I noticed that some students were not happy while I was writing. I turned to these students and asked them what the matter was. Since I allow students to voice their comments and views, they felt free to tell me that they didn't like red and blue and preferred the black markers. A lecturer should be sensitive to this point.

2.2.5. The Dominating Student(s)

In some classes there might be a dominating student who is always willing to participate. If that student is always given the chance, most of the other students in the class will become passive and reluctant or hesitant to participate. The most important strategy to overcome such a challenge is that a lecturer needs to allow as many students to participate as possible.

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[25]Floger, et al, *Strategies for Creative Problem Solving,* p. 1.
[26]For more insights see Adams, *Conceptual Blockbusting,* pp. 43-44.
[27]J. Badi and M. Tajdin, *Creative Thinking: An Islamic Perspective* (2nd ed.) (K. Lumpur: Research Centre, IIUM, 2004), pp. 69-109.

Another important strategy is to reduce the number of students who enrol in Creative Thinking classes. Preferably a class should not exceed 30 students. In this way the class will be easier to control and easier for students to participate.

At the beginning of offering CT subject at IIUM the number of students was 25-30, and they were better in their performance and final results compared to classes of 50 that began from 1998. We are in the process of reviewing this number for future enrolments.

c) Challenges Related to Skills

2.3.1. Skills Differ in Their Nature

Some CTS are easy to learn and teach such as CoRT lessons, Six Thinking Hats and some Lateral Thinking Skills which includes Creative Pause, Creative Focus and Concept Fan. Some other CTS are not like most of the systematic Lateral Thinking Skills, especially Creative challenge and Movement. The latter CTS type requires more time to teach and practice. One strategy applied at IIUM was to extend the time allocated for teaching these skills. In some skills such as Creative Challenge, there are two major aspects to consider: the difficulty of the skill and that it contains many sub skills which include, among others, challenging the dominating idea, the dominating concept, value or preference, polarisation, assumptions and satisfying a condition. One strategy that was applied at IIUM was to limit these creative challenges to only challenging dominating concepts, dominating ideas and assumptions starting in semester I, 2004/2005. Another strategy was to do more in class exercises and to apply the strategy to selected articles taken from current issues of the *New Straits Times* (NST**), a local** newspaper.

2.3.2. Time for Practice

Since the aim is to change dominating mental attitudes, CTS requires ample time devoted to it for such change to take place. "If thinking is to be highly valued goal in our schools, substantial time must be allocated for student and teacher participation"[28]

How much time is needed? De Bono talks about the time needed for one skill such as Creative Pause by saying: "You certainly cannot

[28]Costa, *Techniques for Teaching Thinking***,** p.12.

guarantee that every creative pause is going to be productive. But as you continue to invest in creative effort the rewards will start to flow."[29]

If a person tries to use a skill and it does not work for him/her, there is a possibility that s/he needs further practice to develop the confidence in using the tool.[30] However, teaching thinking skills may require more time than it is generally believed. A. Costa says:

> A survey of the most popular curricula and programmes for teaching thinking suggests that, using carefully designed materials and well-planned and executed lessons, at least two to three hours per week is needed to permanently affect students' cognitive abilities. Furthermore, it seems this intensity needs to be maintained for a period of at least two years for mastery and durable installation of these mental functions.[31]

Besides time allocation, quality of teaching is also important. "Structuring time alone is inadequate. Consecration must also be given to the quality of the task during that time: how engaged are students' energies during that time."[32]

2.3.3. Understanding a Skill is Different from Using it

This is related to the nature of teaching and learning skills. While learning, students may think and claim that they already understood the skill. Likewise, a lecturer/trainer may feel the same but later on they find out that it was not the case. Only through applying and using CTS, one may build up confidence in using them. A student/trainee needs to practice CTS on a continuous basis to ensure the mastery of the skills.

One strategy to overcome this challenge is that a lecturer should do a good job in demonstration while introducing a skill. Then there is a need for doing at least two or three exercises together with the participants. Here, the lecturer should resist temptations and abstain from carrying out the exercises himself. S/he should let the students do the exercise on their own. S/he can only suggest, give clues, instruction, facilitate but not to be the trainer and the trainee at the same time.

Another important strategy is to give students more exercises outside the class. From there came the idea of preparing a full instructional exercise paper for students to follow throughout the whole semester at IIUM starting semester I, 2004/2005. This instruction is given to

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[29] *Bono, Serious Creativity*, p. 88.
[30] *Ibid*.
[31] Costa, *Techniques for Teaching Thinking*, p. 12.
[32] *Ibid*., p. 13.

students in the first week of each semester. This gave students a better chance to improve their understanding and use of CTS.

2.3.4. Teaching CTS is Not Teaching Logic

Both a trainer and trainee may feel at some point while teaching CTS that what he is doing is actually "logic." De Bono considers this as one of the errors of "perception" and labels it as "capture." He says:

> When one sets out to teach thinking as a skill one finds that the "logic" concept is so established that it is at once assumed that one is trying to teach logic. It is then claimed that this is nothing new and that it has often been done. It is also claimed that teaching logic has little relevance to the practical use of thinking in everyday life. It is very difficult to indicate that one is not setting out to teach logic but wishes to establish another channel called "perception.[33]

In my opinion the "capture effect" is also somehow related to "peripheral effect." De Bono says:

> The mind likes to have something it can tackle and about which it can make definite judgments. Our scholastic tradition quite rightly emphasizes depth and accuracy in our work. The result is that our minds tend to move along the tracks that exist and to pursue a track as far as it will go rather than break off to follow something vague.[34]

This led De Bono – as a strategy to overcome the above challenge- to invent new terminologies such as lateral thinking, PO, CoRT lessons, six thinking Hats, and he insists on using these terminologies in classroom.

2.3.5. Skills Overlapping

Those who designed CTS draw attention to the fact that CTS as practical devices do overlap. Both lecturers and students should not worry if they noticed such a phenomenon. The main objective of CTS is to help us generate ideas and get moving. "It is perfectly true that many of the CoRT operations do overlap in a philosophical sense. But they are designed as practical tools, not as philosophical classifications."[35]

The challenge emerges as a result of our education practices. Becoming aware of this phenomenon helps a lot in dealing with it properly. De Bono says:

> A problem does arise because our teaching habits are traditionally based on "distinctions," on teaching from the boundary inwards, so that the distinctions become crystallised into definitions of differences, whereas in CoRT the teaching

[33] *Bono, Serious Creativity*, p. 104.
[34] *Ibid*., p. 111.
[35] *Ibid*., p. 134.

> moves from the centre outwards, with the result that a sharply established central point may have a region of overlap and uncertainty at its boundary.[36]

2.3.6. Difficulty in Evaluating Creative Thinking

The issue of evaluating creativity remains one of the major concerns to researchers in this field of study.[37] How do we evaluate creativity? How do we test creativity? Can we teach the test? "If you were teaching a girl to play the violin you would hardly test her skill by asking her to play the piano. Yet if you asked her to play the violin you would be accused of 'teaching her the test."[38] De Bono is of the view that:

> If we teach thinking with abstract games and puzzles and simulations, it is no use testing the general improvement in thinking skill with games and puzzles, because that tells us nothing about transferable skills. But if we teach thinking with problems and situations that are very similar those which the pupil is going to have to think about in the outside world (careers, social behavior, relationship with parents, shopping), the difficulty does not arise. We can use these same areas to test any improvement in thinking skill.[39]

What De Bono suggested above was adopted by IIUM lecturers in teaching Creative Thinking classes. The criterion used to evaluate a student's work was to test the student's ability in using the skills in similar situations that were taught to him/her. Another guideline in evaluation was to pay a special attention to appreciating any effort that a student makes in using the skills in similar situations; whether this takes place inside a class or outside class assignments. Moreover, in continuous assessment, a lecturer would observe and note any improvement that students show in carrying on their assignments throughout the semester.

d. Challenges Related to Lecturer

2.4.1. How Much the Lecturer Understands the Skill Himself

With some exceptions, "so far teachers had to rely entirely on the material contained in the program itself, without any further aid or training. This lack of training has not been a matter of choice but of

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[36]*Ibid*., pp. 135; 154.
[37]See Bono, *Teaching Thinking* (London: Penguin Books, 1991), pp. 225-233; Isaksen Scott, ed., *Frontiers of Creativity Research* (USA: Bearly Limited), p. 120; *Teaching Creativity*: *Encyclopedia of Creativity* (USA: 1999), vol. 2, p. 630.
[38]Bono, *Teaching Thinking*, p. 226.
[39]*Ibid*., p. 227.

necessity."[40] This happenes at IIUM whenever a new lecturer is appointed to teach the subject. De Bono says:

> Thinking is not a complex subject unless one creates philosophical complexity for oneself. Certainly the CoRT lessons are very easy to understand. There is no complexity of structure, as there might be in any hierarchical subjects. For these reasons, training is not required to explain or teach the subject matter itself. Any teacher ought to be able to understand the material whatever his background. What is more difficult is the teaching method and style required in any open ended subject and in thinking in particular. In the absence of specific training it was suggested that teachers should acquire direct experience by using the material. They should feel their way through the course (or some section of it), developing their own method of teaching. [41]

Then he illustrates:

> There are difficulties in this experience-through-use method. The biggest danger is that the first run through is treated as an experiment and not as the training process it should be. The awkwardness of the teacher as he acquires experience with the subject communicates itself to the pupils and the result is that the subject does not seem to work. It is impossible both to train the teacher and to try out the subject at the same time. The initial run through the course or part of it should be regarded solely as teacher training and teacher exploration. *Once a teacher is familiar with the material and confident, then a proper trial of the subject can take place.*[42]

2.4.2. Being Prepared for Every Single Session

Teaching CTS is a serious and sensitive task and should be regarded by lecturers in that way. Being ready and prepared for the lesson is crucial. This preparation includes a positive mood of the lecturer, reading, reviewing and simplifying the material to be discussed, being prepared in how to introduce a skill regardless of how long the lecturer taught it, to carefully select and prepare the examples and exercises to be used in the session, to photocopy enough related material. In this way, being prepared for CTS classes become a real challenge.

One strategy to deal with this challenge is to select lecturers who are qualified and interested in teaching it. Secondly, those selected lecturers should undergo necessary training programmes. Thirdly, a lecturer needs to do continuous reading about the subject, and to keep abreast with the new developments in the subject. This reading should include well known specialised refereed journals, internet articles, related textbooks and references. Fourthly, a lecturer should maintain a close and good

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[40] *Ibid*., p. 180.
[41] *Ibid*., pp. 181-182.
[42] *Ibid*.

relationship with students and to attend to their queries. Fifthly, a lecturer should observe students' behaviour in class and try to understand their level of understanding and ability. Some students from specific disciplines may lack the necessary background of certain skills.

2.4.3. The Way a Lecturer Responds to Students' Participation

Most lecturers are familiar with closed system but not open ended system like creativity. Lecturers who teach Thinking skills should accept students' responses by refraining from being judgmental and evaluative. Costa Arthur, et al. say:

> In response to a student's idea or action, acceptance of it provides a psychologically safe climate where the student can take risks, is entrusted with the responsibility of making decisions for himself, and can explore the consequences of his own actions.[43]

De Bono suggests that a teacher has to develop an extensive repertoire that gives a sense of value in the absence of definite right or wrong answers. The following responses are suggested:

> That's very interesting.
> That's the most unusual idea I have heard.
> That's a very original idea.
> That idea links up with Joe's but takes it a bit further.
> A very important point.
> An obvious point but one that could be easily overlooked.
> I hadn't thought of that
> That's a nice idea.[44]

2.4.4. If the Student is More Creative or Thinks Differently from Lecturer

This situation can be manifested in many ways:

1. The student is very critical and he interferes from time to time using judgment or evaluating ideas. The lecturer has to be careful not to get into the trap of counter arguments. Instead, it would be better to use these cases of interference to emphasise the nature of lateral thinking; how it is different from critical thinking and that they complement one another.

2. The student is talented in insight but has no idea about CTS. The lecturer can benefit from such a student and encourage him/her for making effort in using CTS. Such a student can easily follow up with the skills and become good at lateral thinking by improving his talent.

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[43]Costa Arthur, et al., *Techniques for Teaching Thinking*, p. 42.
[44]Bono, *Teaching Thinking,* p. 201.

However, this creates another challenge to the lecturer where the student becomes a dominating student in the class. This challenge was discussed earlier.

3. The student has an idea about CTS but it is not clear to him/her. The lecturer has to be aware of such case so that he can help the student in mastering the skills.

4. The student is trained in CTS and he is better in using them than his/her lecturer. It is an indicator that the lecturer is not updated and not qualified enough to carry CTS classes. This is a real challenge where the lecturer needs more preparation for his classes or he/she might find out that he/she needs more training.

e). Challenges Related to Teaching Methodology

2.5.1. Skills vs. Topics Discussed

De Bono regards this as one of two most important and difficult teaching points. The other is "achievement." Introducing a skill may not take a long time because each process is easy to explain. He says:

> Yet the purpose of the lessons is not to provide open-ended, free-flowing discussion sessions but to practice deliberately some specific thinking process. Discussion, therefore, has to be curtailed and disciplined." He explains further: "the purpose of the 'disciplined' discussion and the 'tight' time limits is not to improve discussions as such but to shift the pupils from one problem to another, so that their attention stays on the thinking process that is being practiced. It must be said that this is not an easy teaching matter.[45]

De Bono calls this phenomenon "Glide-past."[46]

2.5.2. Kind of Examples to Be Used in Teaching CTS

Should the CTS examples be related to students' life? A CTS lecturer faces the challenge of selecting proper examples to be discussed in his/her class. Even though some students do a great job on exercises not directly related to their life, most of IIUM students prefer and like to work on examples taken from their everyday life. Moreover, when students are given the choice to work on material based examples or concepts, they would choose the former one. This may be due to the nature of concepts. De Bono states:

> In most of our thinking we are encouraged to be precise and to be definite. Concepts are the exception. With concepts we need to be general, nonspecific,

[45] *Ibid*., pp. 193-194.
[46] *Ibid*., p.106.

> vague, and 'blurry.' The more specific we are, the more we limit the usefulness of the concept.[47]

One strategy here is to make students familiar with concepts and conceptualisation. It is more powerful and effective to work on concepts.[48]

2.5.3. The Need for Demonstration and Animating Lectures

Teaching CTS is different from teaching any other subject. It is not enough to introduce and explain a skill. It is not a matter of presenting an idea rather it is communicating a practical knowledge. It is a step by step procedure that has to be carefully communicated through demonstration. Steps should be clear and details should be shown to students. Creating confusion, making students lost or unclear about the steps make them frustrated and hopeless to learn CTS. A lecturer may loose students' trust and even respect and, therefore, they become unwilling to learn more and less interested in the subject.

The best way to overcome this challenge is to make sure that the lecturer assigned to teach CTS is well trained. Lively lectures on the other hand require a lecturer to always move in the class and build a friendly atmosphere. Amabile says:

> Research shows that teacher's orientation toward control can have a significant impact on children's intrinsic motivation. In one study, children showed low levels of motivation if their teachers were controlling, and high levels of motivation if their teachers allowed them more autonomy. It makes sense, then, to expect that there will be lower levels of creativity in classrooms with control-oriented teachers.[49]

2.5.4. Individual or Group Participation

CTS can be practiced by both individuals and groups. The question is which one is more effective? Should a lecturer use more individual based exercises? Or should s/he use group based exercises? De Bono stresses the follwoing:

> Every one of the techniques can be used by an individual on his or her own without any group in sight. This is important to know because the brainstorming tradition has given the impression that creativity is always a group process. This is definitely not so.[50]

De Bono then brings in his own experience:

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[47]Bono, *Serious Creativity,* p. 140.
[48]*Ibid*., pp. 137-144.
[49]*Ibid*., p.87.
[50]*Ibid.*, p. 229.

> In my experience individuals are much better at initiating ideas and opening up entirely new directions. Groups, however, may have an advantage once the idea has been initiated. The members of the group may be able to flesh out the new idea and also to develop it in directions that might not have been considered by the originator of the idea. The multiple experience of the group can become an asset at this point.[51]

It is clear from the above discussion that lecturers should use both individual and group exercises. At IIUM, although both kinds of exercises are practiced in teaching CTS, individual based exercises are given preference. In group exercises inside the classroom, many students will be passive and leave the task to others students. Outside the classroom, the Kulliyyah of Islamic Revealed Knowledge (IRK) does not encourage group assignments in all subjects for similar reasons whenever appropriate.

f. Challenges Related to References and Reading Materials

2.6.1. Not Everything Has Been Said

References used for teaching CTS cannot depend on full detailed instruction for the subject. A lecturer will not be able to master CTS by reading a textbook and teaching as De Bono suggested earlier. It is only through continuous reading and practicing, participating in related national and international conferences, training programmes and teaching, that a lecturer can build up confidence in mastering CTS. Exchanging ideas with others who have better experience and exposure is another strategy.

One more challenge at IIUM in this regard is that many of those who taught the subject at IIUM – being international staff – have left the University. It is very important to train a group of local staff to carry on the mission.

2.6.2. Details About the Skills are Scattered

There is another challenge that comes out as a result of using De Bono's books on lateral thinking. A lecturer needs to refer to as many textbooks of De Bono as possible before s/he can get a clear and full picture of a skill. Helpful manuals are only available at accredited centres. Some valuable information is now available on CDs and video tapes. A lecturer needs to follow up and be updated about CTS through De Bono websites. Some of these websites offer free limited training sessions. Other sites are available for those who are able and willing to pay.

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[51] *Ibid.*, p. 30.

2.6.3. Most of the Examples are Related to Limited Areas

Examples which are provided by De Bono are related to business, management and marketing and the like due to the fact that his writings reflect the findings of specifically conducted sessions. It becomes a challenge for a lecturer who teaches CTS at IIUM and other educational institutions to come up with their own examples which are related to education, social issues, and other students' daily life situations. With what has been said above about other challenges related to references, the task becomes even harder, more complicated and more difficult.

One strategy that was applied at IIUM was to start with what is suggested in the available references during the first rounds of teaching CTS. After their mastery, a lecturer should be able to come up with his own examples which are more related to his/her students.

2.6.4. Value-free Thinking versus Value-based One

Some Western references do mention new ideas that look at social ills as being acceptable behaviours. This is done as part of promoting critical and creative thinking.[52] Treated as a challenge, in such cases a lecturer needs to request students to offer other ways of looking at it differently based on certain value preferences that guide our thinking and behaviour. "Islam encourages creativity as long as it does not lead to harm or evil. Creativity must be integrated with values that will lead to the betterment of the *Ummah*."[53]

It should be noted here that Islam does not impose limits on thinking, but encourages the mind to preoccupy itself with what is beneficial as the English proverb say, "Idle minds are the devil's workshop." During the process of generating ideas in the perceptual phase a Muslim is totally free to move mentally and look for new ideas even if they are wrong. In the second thinking stage, values can be used as evaluative criteria to judge ideas after their emergence.

3. Future Implications

Based on discussion on the challenges in teaching CTS and the proposed strategies to overcome them, the following future implications may emerge:

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[52]Browne Neil and Keeley Stuart, *Asking the Right Questions* (N.J.: Englewood Cliffs, Prentice Hall, 1994), p. 61.
[53]Badi & Tajdin, *Creative Thinking: An Islamic Perspective*, p.23.

3.1. Dominance of critical thinking in Islamic Thought: Though it is helpful and beneficial, this mode of thinking dominates most of Islamic disciplines such as Usuludin, Usul Fiqh, Fiqh and Ethics, which inhibits creative thinking as a result. Indeed Muslim Jurists used creative thinking skills such as creative challenge, creative pause etc. in deriving rulings and solving problems. An example is in interpreting a prophetic saying directing a companion who rushed into a congregational prayer. The scholars gave three different views of how to read the text. Based on the way the text is read, the scholars came up with different rulings. It could be argued that most of the differences in opinions among Jurists are with similar nature. However, they did not export these skills outside their jurisprudential practices and develop them into tools.

There is a need then to explore and develop CTS within the Islamic Heritage. We can start by relating *Fiqh* discussions to CTS. We can start by relating *Fiqh* discussions to CTS such as above example. This will make the study of *Figh* more interesting and beneficial. And later on it will be easier to spell out the creative thinking skills that were used by different Muslim scholars.

3.2. There is a need to foster creativity at all levels of a community and to make it a national concern. It should be infused in all curricula and the media, and the family (parenting); all have an important role to play in that regard. According to Costa,

> Emphasis on thinking cannot be viewed by the student as an isolated event occurring only when an itinerant teacher arrives, or as a period on Thursday from 2:00 to 2:53 labelled "thinking time." Rather, students must repeatedly receive instruction in cognitive skills and encounter situations throughout the school day that require thinking. This needs to take place across academic content areas and over extended periods of time. When this happens, there is greater possibility for transference, generalization, and application of a cognitive skill (Sternberg and Wagner, 1982). For some schools, this may require a revision of curriculum goals, school organization, allocation of time, and assessment procedures.[54]

3.3. De Bono emphasises that there is a need for establishing a Creativity Centre with trained facilitators to make a formal effort in promoting creativity to all personnel and also to set up structures for encouraging creativity as such. This centre should serve to develop a corporate culture of creativity.[55] He argues that as much as there is a need for a Creativity Centre, there is also a need for a distribution of

[54]Costa, *Techniques for Teaching Thinking,* pp. 12-13.
[55]Bono, *Serious Creativity,* p. 259.

people who are locally responsible and motivated to put energy into the creative process. This will lead to two types of network:[56]

a) Process champions who are able to run creative meetings, and even provide some creativity training.
b) To bring together individuals who have always been interested in creativity to be examples to those around them and also provide a specific resource of creative talent. "The most important thing about introducing creativity into an organization is to make creativity behavior an "expectation."[57]

3.4. I suggest that IIUM form a committee with both IIUM staff and other experienced and specialised staff from the Islamic World to meet for two to three days to infuse creative and critical thinking in IRK curricula. At the same time or later on, a similar thing can be done about curricula of other faculties.

4. Conclusion

This paper discusses ten years experience of teaching CTS at IIUM. The findings of the paper can be summarised as following:

a) Students should be able to use different thinking languages. However, for CTS there should be more emphasis on visual thinking. They need to make an effort and develop interest in learning CTS.
b) Environment plays an important role in learning CTS. As such, lecturers should encourage individuality, create an enjoyable atmosphere, help students to overcome their fear of making mistakes and give a fare chance to all students to participate in class.
c) Students need to understand that CTS differ in their nature. Some need more time and effort to acquire. They should be able to use the skills and not just understand them. They also need to be aware of differences between logic and creativity and should not worry about skills overlapping.
d) Lecturers need to have appropriate training before teaching CTS. They need to be prepared and updated for each class session. Furthermore, they should be appreciative and receptive of students' participation and allow them to think differently from them. Discussion should be disciplined so that students' attention should be focused on the process. Examples should be related to students' life.

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[56] *Ibid*. p. 260.
[57] *Ibid*. p. 263.

CTS classes must be carried out in a lively manner and both individual and group participation should be applied.

e) Future implications include: relating CTS to Islamic thought; fostering creativity at all levels in the Muslim communities, and establishing creativity centres to make a formal effort in promoting creativity in all Muslim countries.