Vol 3 Issue 2 Aug 2013

Impact Factor : 1.2018 (GISI)

ISSN No :2231-5063

Monthly Multidisciplinary Research Journal

GoldenResearch Thoughts

IMPACT FACTOR : 0.2105

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RNI MAHMUL/2011/38595 **ISSN No.2230-7850**

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Golden Research Thoughts

ISSN 2231-5063
Volume-3, Issue-2, August-2013

Developing Critical Thinking Skills Among Secondary School Students: Need Of The Hour

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Abstract: Education is the glory and crown of an individual and it is the most powerful instrument that can bring about desirable changes in the social, economic, cultural and political spheres of life of the people. The best dreams for a bright future can be blossomed only through critical thinking.

Growth in science and technology is overwhelming and they provide challenges and opportunities for people in the field of education. Education today must enable students to meet the challenges ahead and demands of the working environment and daily living. Thus students not only need knowledge but also critical thinking skills in the years ahead.

Keyword: Critical thinking, problem solving, decision making, analyzing arguments

1.INTRODUCTION:

Critical Thinking is the ability to think clearly and rationally. It includes the ability to engage in reflective and independent thinking .It is quite compatible with thinking "out – of – the- box", challenging consensus and pursuing less popular approaches.

Critical Thinking in any subject, content, or problem-enables the thinker to improve the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them. It is the process of purposeful, self-regulatory judgment. The process gives reasoned consideration to evidence, contexts, conceptualizations, methods and criteria. Critical Thinking is sometimes broadly defined as "Thinking about Thinking".

Glaser(1985) " The development of critical thinking skills produces intellectual and socially competent citizens who effectively cooperate with other people and challenge real world problems."

Halpern(1996) "Critical Thinking as the use of cognitive skills or strategies that increase the probability of a desirable outcome."

II. IMPORTANCE OF CRITICAL THINKING?

Developing children's abilities is the main goal of education. The higher aim is to develop the child's resources to think and reason to pursue assumptions to logical conclusions and to handle abstractions. Critical thinking is common in educational, psychological and philosophical area today.

Critical thinking can be interpreted in a variety of ways. Some consider it in an evaluative sense that is used to determine the quality of adecision or an argument. Others use the term in a generative sense that places emphasis on the creativity and skill in designing a product or creating a solution to a problem. Critical thinking is the ability and disposition to incorporate prior knowledge, reasoningand cognitive strategiesto generalize, prove or evaluate unfamiliar situations in a reflective manner.

Thinking can be defined in its simplest form as a series of activities the brain undergoes when presented with a stimulus. Thinking skills are essentially mental techniques or abilities that enable human beings to formulate thoughts, to reason about, or to judge.

The thinking classroom is all about the teaching of thinking. It is a place where Critical and Creative thinking counts. The thinking classroom holds that the quality of students learning depends on how well students who consistently tend to connect ideas to things they know about seek hidden explanations, or think about the strengths and weaknesses in their thinking will develop deeper understanding of subjects across the curriculum.

III. CHARACTERISTICS OF CRITICAL THINKING

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

IV. COMPONENTSOF CRITICAL THINKING

Critical thinkers make decisions based on taking the time to gather appropriate information, research and weighing the possible outcomes.
Critical thinking allows people to compare, analyze, critique and synthesize information.
Critical thinkers keep an open mind and change their views

based on new knowledge acquired.
Critical thinkers examine their actions to see why they make the decisions they do.
Good critical thinkers know how to separate opinions from facts.
Critical thinkers make better decisions which are less impulsive, leading them to be more successful in life.
They also know the difference between rational thoughts and emotional impulses.
Critical thinking greatly increases success in college students.
Good critical thinking skills require practice.
To develop good critical thinking skills, it is necessary to internalize principles and apply them to everyday situations.
Critical thinking requires putting aside biases when coming up with logical courses of action.

V. IMPORTANCE OF CRITICAL THINKING

Critical thinking plays an important role in cooperative reasoning and constructive tasks to evaluate and improve our creative ideas. It helps us acquire knowledge, improve our theories and strengthen arguments which enhances work processes and improve social institutions.

Critical thinking skills give students the ability to not only understand what they have read or been shown but also to build upon that knowledge without incremental guidance. Critical thinking teaches students that knowledge is fluid and builds upon itself. It is not simply rote memorization or the ability to absorb lessons unquestioningly. Hence there is an urgent need to develop critical thinking among secondary school students.

Critical Thinking interrelates subject matter and cognitive strategies and skills, because it cannot be done meaningfully unless the student knows certain concepts and facts related fundamentally to the question under consideration. A successful critical thinker is also aware of differences in criteria and evidence used to justify propositions in different subjects such as history, economics and geography.

Critical thinking products and courses encourage students to think for themselves, to question hypotheses, to develop alternative hypotheses, and to test those hypotheses against known facts. None of this is to say that memorizing facts is necessarily bad. It means only that when rote memorization takes precedence over problem solving, logic, and reason, students suffer.

Most learning situations are never able to develop critical thinking skills. There are a number of reasons. The first goal of education, "what to think," is so traditionally obvious that instructors and students may focus all their energies and efforts on the task of transmitting and acquiring basic knowledge. Indeed, many students find that this goal alone is so overwhelming that they have time for little else. On the other hand, the second goal of education, "how to think" or critical thinking, is often so subtle that instructors fail to recognize it and students fail to realize its absence.

VI. TRAINING STUDENTS IN CRITICAL THINKING

1.Students share in the responsibility for classroom environment
cooperative learning techniques
group or class discussion leaders
project-based learning

2.Teachers model thinking and support students as they share their thinking strategies
Demonstrate by …
Approaching ideas tentatively
Using questioning techniques
Promoting respect for different points of view
Question conclusions and encourage student to do likewise
Not only … What? Where? When?
But also … Why? What if? Why not?

3.The classroom has an atmosphere of inquiry and openness
Students make predictions, gather info, organize it, and question conclusions
Teachers provide corrective advice rather than criticism and evaluation

4.Students are supported, but also challenged to think independently
Pay attention to HOW students are thinking
Encourage students to investigate and communicate as they go

5.The classroom arrangement allows students to work together
Focus should be on the students, not the teacher
Arrange desks in horseshoe or grouped clusters

VII. STRATEGIES OF DEVELOPING CRITICAL THINKING SKILLS

Instructional Design of Critical Thinking…
Knowledge & Understanding is Not Gained from Memorization
Knowledge is Constructed from Critically Thinking
Link Critical Thinking Skills to Content

Intellectual Challenge is Focusing on Thinking Rather Than Facts
Anticipating – Lesson Introduction…
Call up the knowledge students already have
Informally assess what they already know, including misconceptions
Set purposes for learning
Focus attention on the topic
Provide a context for understanding new ideas
Building Knowledge – Lesson Activity / Discussion…
Students compare expectations with what is being learned
Revise expectations or raise new ones
Identify the main points
Monitor personal thinking
Make inferences about the material
Make personal connections to the lesson
Question the lesson

Consolidating – Lesson Reflection…
Students summarize and interpret the main ideas
Share opinions and make personal responses

ISSN 2231-5063
Volume-3, Issue-2, August-2013

Test out the ideas (apply to assignment, project, etc.)
Assess learning and ask additional questions

STEP 1: The teacher poses a yes/no question on which opinions can vary (e.g., Is the time required to teach critical thinking skills worth the effort when other methods offer quicker results?)
STEP 2: Each student considers the question alone and writes an answer with supportive reasoning.
STEP 3: Two students stand at opposite ends of the room. Each states an extreme position on the issue, and their statements are diametrically opposed to each other.
STEP 4: The students are asked to take their place along an imaginary line between the two extreme positions, according to which pole of the argument they agree with more.
STEP 5: Students are asked to discuss with other students in the line their responses to the question to make sure they are standing among people who share their position.
STEP 6: If students are clustered, have one representative from each group summarize their position on the issue. Students can change positions after hearing the statements.

Reflection:The value line is enjoyable for students because they like moving around in the class and sharing their opinions with others. It is interesting to demonstrate for the physically what is meant by "having a position" and changing one's position" on an issue.
This activity can be modified using true/false or multiple choice questions for pre-assessments (what do you know) or reviews for tests:
True/False – Assign one side of the room as the "True" side and the other as the "False" side. As the teacher reads a true/false statement, students move to the correct side of the room. Students who are unsure about the answer remain in the middle of the room. Representatives from each side are asked to explain their choice.
Multiple Choice – Same as above, but each corner of the room is assigned a letter (e.g,. A, B, C, D) where students move to answer the question. Representatives from each corner explain their groups' positions.

VIII. BARRIERS IN THE DEVELOPMENT OF CRITICAL THINKING

Four barriers often impede the integration of critical thinking
Lack of training
Lack of information
Preconception
Time constraints

Why Students (and Teachers) Don't Critically Think…
Too Many Facts, Too Little Conceptualizing
Too Much Memorizing, Too Little Thinking
Lecture & Rote Memorization Does Not Require Critical Thinking
Students Are Not "Trained" to Think
Critical Thinking is More Than Simple Engagement
"Life Comes at You Fast"

IX. CONCLUSION

Critical thinking is not a matter of accumulating information. A person with a good memory and who knows a lot of facts is not necessarily good at critical thinking. A critical thinker is able to deduce consequences from what he knows, and he knows how to make use of information to solve problems, and to seek relevant sources of information to inform him

Critical thinking is the ability to translate the thinking process into clear, persuasive, truthful language, which is carefully and logically crafted. At the same time it is able to convert perceptions and reactions into concepts, ideas, assumptions, suppositions, inferences, hypotheses, questions, beliefs, premises and logical arguments. Critical Thinking is not a matter of accumulating information which is found to be a routine activity in schools. A person with a good memory and who knows a lot of facts is not necessarily good at critical thinking. A critical thinker is able to deduce consequences from what he knows and he knows how to make use of information to solve the problems, and seeks the relevant sources of information to inform him. Hence, it is of utmost importance that the schools focus on the development of critical thinking skills among secondary class students.

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