CHAPTER-ONE

INTRODUCTION

1.1 General Background

The term "Critical" used in the expression "Critical Thinking" connotes the importance or centrality of the thinking to an issue, question and related problems of concern. Critical thinking clarifies goals, examines assumptions, discerns hidden values, evaluates evidence, accomplishes actions, and assesses conclusions. It is concerned with human's thoughts, feelings and emotions rather than to only conveying information. It is a process to evaluate one's thinking. It is the ability to think clearly and rationally. It includes the ability to engage in reflective and independent thinking. In other words, critical thinking and critical analysis are terms which are described as the intellectual disciplines which are processed actively and skillfully conceptualizing, applying, analyzing, synthesizing and evaluating the information gathered from observation, experience, reflection, reasoning or communication. Simplifying the term, Facione, et al. (2000) define the concept

> We understand critical thinking to be purposeful, self regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criterions, or contextual considerations upon which that judgment is based….(p. 47).

In other words, it refers to the conception which judges, verifies and purifies the sense and shows the eternal creations. So, it expresses the information which exposes the hidden values. It is an intellectual process which guides one's action, expression and so on. As Scriven, et al. (1997 as cited in Santos, 2006) state

> Critical Thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered from or generated by observation, experience, reflection, reasoning, or communication, as a guide to belief and action (p. 124).

The above definitions show that critical thinking is a process through which the thinkers improve the quality of their thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them. Furthermore, it is based on universal values that transcend subject matter in divisions which are clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, fairness etc. Favoring the concept, Paul, et al. (2005, p.1) state ,"Critical Thinking is a process by which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them". In other word, it assesses the quality and skills of learners to come on right tract. It is also a mental process through which ideas are created and final decision is taken. Critical thinking is also an art of taking direct action on our thinking in order to make it better. It means learning to think about our thinking in a self-correcting manner. Kennedy (1991, as cited in Atkinson, 1997) says that "Critical Thinking is essential if we are to get the root of our problems and develop reasonable solutions". This definition highlights the importance of critical thinking for solving our problems. It also refers to the mental action which helps to guide one's beliefs and immediate actions. Huitt (1998, as cited in Facione, et al., 2000) defines Critical Thinking as "the disciplined mental activity of evaluating arguments or propositions and making judgments that can guide the development of beliefs and taking action". It qualifies our thinking and cultivates substance and true intellectual discipline. Further, it is also a natural process which is the ability

of thinkers to take charge of their own thinking. It is also concerned with the problems that come in the society which are solved with spiritual and critical policies. Spencer, et al. (2005, as cited in Santos, 2006) state

> Critical Thinking is an important and necessary skill because it is required in the workplace, it can help you deal with mental and spiritual questions, and it can be used to evaluate people, policies, and institutions, thereby avoiding social problems (p. 73).

It shows that the domain of critical thinking is not only limited in some specific subjects. It can be used with every faculty to develop the quality through rationalization. It is the process to judge about the value by examining its quality. It is the art of analyzing one's thought with a view to improve it. So it is the ability to think rationally. It includes the ability to engage in reflective and independent thinking. Someone with critical thinking skill is able to understand the logical connections between ideas, construct and evaluate arguments, identify the relevance of ideas and reflect the justification of one's own beliefs and values.

One method that promotes critical reading involves the use of news media in the class. Newspapers, magazines, television, and radio can motivate students to develop critical listening and reading skills. Students can construct their own arguments for discussion or publication in student newspapers. Similarly, Children's literature is another powerful tool for teaching thinking as Worthington et al. (1979, as cited in Gray, 2002) state that "....literature offers children more opportunities than any other area of the curriculum to consider ideas, values, and ethical questions." Furthermore, the literature which inspires and challenges helps students to learn how to engage and interact with a book.

The concept of ‘Critical Thinking’ is a vague issue to analyze the perspective as we perceive it how Vampire (1985, p.57, as cited in Kassen, 2001) describes his perspective through this figure:

Figure No. 1

Perspectives of Active Thinker’s in their Analysis

We understand ‘Critical Thinking’ to be self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological concept upon which that judgment is based. It is essential as a tool of inquiry. As such, it is a liberating force in education and a powerful resource in one’s personal and civic life. While not synonymous with good thinking, it is a pervasive and self-rectifying human phenomenon.

1.1.1 Active Learning

Active Learning empowers the learners to develop potential decisions. It is a process whereby students engage in higher order thinking skills such as analysis,

synthesis, and evaluation. According to Jones et al. (1993, as cited in Gray, 2002) active learning derives from two basic assumptions:

i) Learning is by nature active endeavor, and
ii) Different people learn in different ways.

In other words, it increases attention of learners to learn which in turn develops communication skills in the students, promotes higher level thinking skills, develops positive attitude towards the subject and motivation to learn in the classroom having a positive impact on the students. Furthermore, Petty (2004, p.13, as cited in Paul, et al., 2005) states that "Through active learning students can generate more ideas". In other words, when they learn something they receive the information actively. Through active learning, information retention is said to be significantly increased because:

- Students can create their own ideas and views.
- They need to communicate.
- Even shy students need to speak to share their views, hence language is used.
- Students' perception can also be developed; they get opportunity to explore themselves.

Active learning refers to the levels of academic students' engagement in and out of the classroom. In other words, the techniques to be used as active learning strategies are intended to make the student active participants in learning.

Active teaching and active learning activities are designed to take students out of their books, sometimes out of the schools, and sometimes out of their familiar ways of thinking. Active teaching strategies and leaning activities are intended to make students active participants in their own learning. A model of Active

Learning given by Mujis and Raynold (2001, as cited in Paul, et al., 2005) is presented below:

Figure No. 2

In simple words, learners can learn better if they get the chance to have interaction which supports learning more effectively. There are some guidelines which can suggest and assist the teacher to introduce and apply the active learning activities in the classroom:

- Select the group in a specific rotation.
- Vary the required team and techniques and tasks.
- Identify the required team member.
- State the purpose and outcomes of team's tasks.
- State the time allotment of each task.
- Have all necessary instructional materials.
- Determine how students will be graded on this task.
- Determine a signal indicating when students should stop talking.

Active learning shifts the focus from the teacher and delivery of course content to the student and active engagement with the material. Through active learning techniques and modeling by the teacher, students shed the traditional role as passive receptors and learn and practice how to apprehend knowledge and skills and use them meaningfully. Meyers, et al. (1993, as cited in Halpen, 1996) state that "Active learning involves providing opportunities for students to meaningfully talk, listen, write, read, and reflect on the content, ideas, issues, and concerns of an academic subject". In other words, when students learn actively, they retain more content for a longer time and are able to apply that material in a broader range of contexts. Active learning can be applied to most commonly used course activities, depending on whether they involve the student or they position the student as a receptacle receiving content. The lecture method, which seems to be inherently passive, can be an active learning experience if the following techniques are applied:

- Students may be provided with a set of questions as well as instructions to look for answers within the lecture.
- During pauses in the lecture students may be asked to jot down questions. The following class may then begin with these questions, which can function as connectors from the previous class to the present class.
- Students may be periodically asked throughout the lecture to make connections between the current material and course materials covered previously.

The active learning and teaching activities can be analyzed in depth figuring out as follows:

Figure No. 3

Some learning strategies which come under Active Learning Methods are mentioned below in the table:

Table No. 1

Active Learning Strategies

S.N.	Active Learning Methods	Skills to be Developed	Purposes
1.	Art Spiral	Being Creative Thinking	Communicating Thoughts and Ideas
2.	Back-to-Back	Thinking, Problem-Solving	Expanding Thoughts
3.	Card Ranking	Thinking, Decision-	Improving Thoughts and

		Making	Idea
4.	Carousal	Thinking and Decision Making	Improving Communication
5.	Collage	Being Creative Thinking, Decision-Making	Improvement of Thought
6.	Conscience Alley	Thinking, Decision-Making Working with Others	Communication and Thought
7.	Consequence Wheel	Thinking, Decision-Making, Problem-Solving	Communication and Thought
8.	Constructing Walls	Working with Others Thinking	Improving Creativity
9.	Creative Matrix	Being Creative Thinking, Decision-Making, Problem-Solving Working with Others	Improving Creativity and Communication
10.	Diamond Ranking	Working with Others, Thinking	Improving Creativity
11.	Drama Techniques	Thinking Being Creative Working with Others	Improving Thoughts and Communications
12.	Fact or Opinion	Thinking, Decision-Making, Problem-Solving Working with Others	Improving Ideas and Thoughts
13.	Fishbone Strategy	Thinking, Decision-Making, Problem-Solving	Improving Ideas and Thoughts
14.	Five Questions	Thinking, Decision-Making	Improving Creativity and Thoughts

15.	Freeze Frame	Creative Thinking, Decision-Making	Improving Creativity, Ideas and Thoughts
16.	Hassle Lines	Thinking, Decision-Making, Working with Others	Improving Creativity, Ideas and Thoughts

1.1.2 A Brief History of Critical Thinking

The Journal of Foreign Language Teaching **(**2010, pp. 32-48) describes the history of critical thinking. The intellectual roots of critical thinking are as ancient as its etymology ultimate to the teaching practice and vision of Socrates 2,500 years ago who discovered the method of probing questions that people could not rationally justify.

Socrates established the importance of asking deep questions that probe profoundly into thinking before we accept ideas as worthy of belief. He established the importance of seeking evidence, closely examining reasons and assumptions, analyzing basic concepts, and tracing out implications not only of what is said but of what is done as well. His method of questioning is now known as "Socratic Questioning" and is the best known critical thinking teaching strategy. In his mode of questioning, Socrates highlighted the need in thinking for clarity and logical consistency. Socrates set the agenda for the tradition of critical thinking.

Socrates' practice was followed by the critical thinking of Plato, Aristotle, and the Greek skeptics. From this ancient Greek tradition emerged the need, for anyone who aspired to understand the deeper realities, to think systematically, to trace implications broadly and deeply. In the middle ages, the tradition of systematic critical thinking was embodied in the writings and teachings of such thinkers as Thomas Aquinas who ensured his thinking met the test of critical thought, always

systematically stated, considered, and answered all criticisms of his ideas as a necessary stage in developing them. Aquinas heightened our awareness not only of the potential power of reasoning but also of the need for reasoning to be systematically cultivated and cross examined.

During the15th and 16th Centuries, a flood of scholars in Europe began to think critically about religion, art, society, human nature, law, and freedom. They proceeded with the assumption that most of the domains of human life were in need of searching analysis and critique. Among these scholars were Colet, Erasmus, and Moore in England who followed on the insight of the ancients. Francis Bacon, in England, was explicitly concerned with the way we misuse our minds in seeking knowledge. He recognized explicitly that the mind cannot safely be left to its natural tendencies. His book can be taken as one of the earliest texts in critical thinking. After fifty years in France, Descartes wrote the second text in critical thinking, rules for the direction of mind. He wrote the argument for the need of special discipline in thinking. He articulated and defended the need in thinking for clarity and precision. The critical thinking of these Renaissance and post-Renaissance scholars opened the way for the emergence of science and for the development of democracy, human rights, and freedom for thought.

In 16th Century, Locke, et al. displayed the same confidence in the critical mind of the thinker that we find in Machiavelli. He laid the theoretical foundation for critical thinking about basic human rights and the responsibilities of all governments to submit to the reasoned criticism of thoughtful citizens. It was in this spirit of intellectual freedom and critical thought that scholars such as Robert Boyle in 17th Century and Sir Isaac Newton in 17th and 18th Century contributed for the concept. Another significant contribution to critical thinking was made by the thinkers of the French Enlightenment: Bayle, Montesquieu, Voltaire, and Diderot. They all began with the premise that the human mind when disciplined by reason, is better able to figure out the nature of the social and political world. They

valued the intellectual exchange in which all views had to be submitted to serious analysis and critique. They used to believe that all authority must submit to the scrutiny of reasonable critical questioning. Eighteenth Century thinkers extended our conception of critical thinking further developing our sense of the power of critical thought which were applied to solve the problem of economics.

In 19th Century, Critical thought was extended further into the domain of human social life by Comte and Spencer who especially focused on the problems of capitalism. It produced the searching social and economic critique of Karl Marx. Applied to the history of human culture and the basis of biological life, it led to Darwin's descent of man. It is reflected in the works of Sigmund Freud when it was applied to the unconscious mind. In 20th Century, our understanding of the power and nature of critical thinking was emerged in explicit formulations.

John Dewey through his work has increased our sense of the pragmatic basis of human thought. The work of Piaget has increased our awareness of the egocentric and socio centric tendencies of human thought and of the special need to develop critical thought which is able to reason within multiple points.

To sum up, the development of the critical thinking has been gradually increased. We recognize that critical thinking must be analyzed and assessed for its clarity, accuracy, relevance, depth, breadth, and logicalness. In other words, questioning that focuses on the fundamentals of thought and reasoning are now baseline in critical thinking as Socrates emphasized on questioning model in past. Independent of the subject studied, students need to be able to articulate thinking about thinking that reflects basic command of the intellectual dimensions of thought. As a result of the fact that students can learn these generalized critical thinking, they need not be taught history simply as a body of facts to memorize, they can be taught the reasoning. We are familiar with the fundamental concepts

and principles of critical thinking tests and approaches but we are very far from the actual application.

1.1.3 The Purposes of Thinking Critically

Everyone thinks that it is our nature to find the reason developing our thought. In fact, the quality of our life depends on the quality of our thinking capacity. A well cultivated critical thinker raises vital questions and problems clearly and assesses the relevant information. The skillful thinker comes with different types of ideas recognizing and assessing. Everyone thinks that it is our nature to do so. But much of our thinking is biased, distorted, partial, uninformed and downright prejudiced. Yet the quality of our life and that of what we produce or make depends precisely on the quality of our thought. The purposes of critical thinking can be also clarified through the definition given by Vacca (1995, as cited in Facione, et al., 2000) who states:

> Research evidence has shown that cognition and language development are closely related. It is through language that children come to know the world. Such close relationships between language and thinking skills have long been recognized by theorists and educators (p. 37).

In conclusion, critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking. We can say that the purpose of critical thinking is to develop thinking abilities of all the learners by enabling them to solve the problems of day to day life systematically and logically.

To make learners a good critical thinker, these learning objectives are important for the higher level students as Bloom, (1956, as cited in Brookfield, 1987) has explained in his taxonomy of objectives shown through the following table.

Table No. 2

Steps Model to Move Students toward Critical Thinking

Step 1: Determine learning objectives • Define behaviors students should exhibit • Target behaviors in higher order thinking	
Step 5: Provide feedback and assessment of learning • Provide feedback to students • Create opportunities for self-assessment • Utilize feedback to improve instruction.	**Step 2: Teach through questioning** • Develop appropriate questions • Employ questioning techniques • Encourage interactive discussion
Step 4: Review, refine, and improve • Monitor class activities • Collect feedback from students	**Step 3: Practice before you assess** • Choose activities that promote active learning • Utilize all components of active learning

There are five steps to move students toward critical thinking which are as follows:

Step 1: Determine learning objectives.

- Define behaviors students should exhibit.
- Target behaviors in higher order thinking.

Considering the importance of a course, its placement in a program of study, and its role in providing a base of knowledge to be built upon by other courses, a teacher should first identify the key learning objectives that define what behaviors students should exhibit in their life. Questions at this level may ask students to assess, criticize, recommend, predict, and evaluate. Thus, a well-written lesson plan should target a specific behavior, introduce and allow for practice of the desired behavior, and end with the learner exhibition of the behavioral response. The development of well written questions will accelerate a learner's movement into critical thinking.

Step 2: Teach through questions.

- Develop appropriate questions.
- Employ questioning techniques.
- Encourage interactive discussion.

Questioning is a vital part of the teaching and learning process. It allows the teacher to establish what is already known and to develop new ideas and understandings. Questions can be used to stimulate interaction between teacher and learner and to challenge the learner to defend their position.

Step 3: Practice before you assess.

- Choose activities that promote active learning.
- Utilize all components of active learning.

The point mainly states that a major shift has taken place in education that is shift toward active learning. Teachers who have used this approach generally find that the students can learn more and that the courses are more enjoyable. In other

words, it describes active learning as involving the students in activities that cause them to think about what they are doing. The concept of active learning supports the research which shows that students learn more and retain knowledge longer if they acquire it in an active rather than passive manner. To make learning more active, we need to learn how to enhance the overall learning experience by adding some kind of experiential learning and opportunities for reflective dialogue.

Step 4: Review, refine, and improve.

- Monitor class activities.
- Collect feedback from students.

It deals with review, refine, and improve. Teachers should strive to continually refine their courses to ensure that their instructional techniques are in fact helping students develop critical thinking skills. To accomplish this, teachers should monitor the classroom activities very closely. To track student participation, a teaching diary can be kept that identifies the students that participated, describes the main class activities, and provides an assessment of their success. Other reflective comments can also be tracked in this journal and can be very useful when revising or updating instructional activities.

Step 5: Provide feedback and assessment of learning.

- Provide feedback to students
- Create opportunities for self-assessment
- Utilize feedback to improve instruction.

It provides feedback and assessment of learning. Teacher feedback, like assessment, compares criteria and standards to student performance in an effort to evaluate the quality of work. However, the purpose of feedback is to enhance the quality of student learning and performance, rather than to grade the performance, and, importantly, it has the potential to help students learn how to assess their own

performance in the future. Feedback allows the teacher and students to engage in dialogue about what distinguishes successful performance from unsuccessful performance as they discuss criteria and standards.

In conclusion, teachers should provide good feedback to their students through frequent opportunities to practice whatever they are expected to do at assessment time. They should spend time helping students to understand about the criteria and the standards. Each of these techniques help the students learn to distinguish between satisfactory and unsatisfactory performance.

The table 4 depicts the fact that the learners should determine the objectives of learning critically. As the objectives enable the learners to reach the destiny, the learners should be very critical while determining the objectives of learning. Next, the student can grasp the message by developing a set of signpost questions in their mind. Then, they should be engaged in practice because it is only the practice that makes a man perfect to improve the teaching learning task. The teacher can collect feedback from the student. The teacher can also provide them some critical issues and stories to review. The teacher can provide some feedback to the learners. An ample opportunity should be created by the teacher for their self assessment. Finally, the teacher can utilize the feedback collected from the students to improve the instruction.

1.1.4 Some Key Principles of the Concept

There are a number of important features of critical thinking which students need to learn in this section, these following features are defined briefly:

a) Clarity

Clarity is the gateway to intellectual standard which makes communication possible. To communicate effectively, one should begin with a clear mind, clear ideas, clear purposes and goals, clear questions, clear information, clear-cut

implications, clear conclusions, and clear ways to think. On the contrary, thinking which is unclear is confused, muddy, obscure, ambiguous, vague, dim, murky, indistinct, unspecified, unintelligible mixed up, or entangled with other ideas. It is the gateway standard because without clarity of thought, no other evaluation can be made, we cannot judge other standards such as relevance, depth, significance, accuracy, logicalness, consistency, coherence, etc. The key to clarity of thought is practice in the clarification of thought.

b) Strategy

It provides interactive practice in the critical thinking skills to find clear levels. Furthermore, it gives the way to make the learner think and interactions in the classroom.

c) Accuracy

It means to be free from errors and mistakes. When we are concerned with accuracy, we seek to confirm the truth. Accuracy is an important goal in critical thinking to discern whether something is accurate in any given situation presupposes practice in doing so. It figures out whether a word is being used accurately, whether a word is spelled accurately, whether another person is interpreting a situation or issue accurately.

d) Logicalness

The word logic covers a range of related concerns all bearing upon the attempt on someone's part to give meaning. All human thought is based on logic rather than instinct. Human tries to figure things out using ideas, meanings, and thought. Such intellectual behavior inevitably involves logical considerations.

1.1.5 Characteristics of Critical Thinking

If we talk about the characteristics of critical thinking, we gossip, boast, exaggerate, and equivocate that it is only human being's wish to validate our prior knowledge, to vindicate our prior decisions and to sustain our earlier beliefs. In the process of satisfying our ego, we can often deny our intellectual growth and opportunity. Critical thinking includes a complex combination of skills. The characteristic of critical thinking based on Facione (2000, p.5) are as follows:

- **Rationality:** We are thinking critically when we rely on reason rather than emotion, require evidence, ignore no known evidence, and follow evidence where it leads and are concerned more with finding the best explanation than being right analyzing apparent confusion and asking questions.
- **Self-awareness:** We are thinking critically when we weigh the influences of motives and bias, and recognize our own assumptions, prejudices, biases, or point of view.
- **Honesty:** We are thinking critically when we recognize emotional impulses, selfish motives, nefarious purposes, or other modes of self deception.
- **Open-mindedness:** We are thinking critically when we evaluate all reasonable inferences, consider a variety of possible viewpoints or perspectives, remain open to alternative interpretations, accept a new explanation, model, or paradigm because it explains the evidence better, is simpler, or has fewer inconsistencies or covers more data, accept new priorities in response to a reevaluation of the evidence or reassessment of our real interests, and do not reject unpopular views out of hand.
- **Discipline:** We think critically when we precise and resist the manipulation and irrational appeals, and avoid snap judgments. In other words, our thought grows when we concentrate our mind in one discipline.

- **Judgment:** We think critically when we recognize the relevance and merit of alternative in sum; Critical Thinkers are by nature skeptical. They approach texts with the same skepticism and suspicion as they approach spoken remarks; Critical thinkers are active, not passive. They ask questions and analyze. They consciously apply tactics and strategies to uncover meaning or assure their understanding; critical thinkers do not take an egotistical view of the world. They are open to new ideas and perspectives. They are willing to challenge their beliefs and investigate competing evidence.

Critical thinking enables us to recognize a wide range of subjective analyses of objective data, and to evaluate how well each analysis meets our needs.

1.1.6 Skills and Procedures Used in Critical Thinking

The core critical thinking skills include observation, interpretation, analysis, inference, evaluation, explanation and cognition. There is a reasonable level of consensus among experts that an individual or group engaged in strong critical thinking gives consideration to evidence through observation, context of judgment, relevant criteria for making the judgment well, applicable methods and techniques for forming the applicable theoretical constructs for understanding the problem and the question. To possess critical thinking skills, one must be disposed to engage problems and decisions using those skills. Critical thinking employs broad intellectual criteria. Such as: clarity, credibility, accuracy, precision, relevance, depth, breadth, significance and fairness.

It calls for the ability to recognize problems, to find workable means for meeting those problems, understand the importance of prioritization and order of precedence in problem solving, gather information, recognize unstated assumptions and values, comprehend and use language with accuracy, clarity and interpret data to appraise evidence and evaluate arguments, recognize the

existence of logical relationships between propositions, draw warranted conclusions and generalizations, put to test the conclusions and generalizations at which one arrives, reconstruct one's patterns of beliefs on the basis of wider experience, render accurate judgments about specific things and qualities in everyday life. A well cultivated critical thinker

- Raises important questions and problems, formulating them clearly and precisely.
- Gathers and assesses relevant information, using abstract ideas to interpret it effectively comes to well reasoned conclusions and solutions, testing them against relevant criteria and standards.
- thinks open mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences and
- Communicates effectively with others in figuring out solutions to complex problems without being unduly influenced by others' thinking on the topic.

Foundation for Critical Thinking (2009, cited from critical thinking.com) presents six letters IDEALS (that is identification, definition, enumeration, analysis, lists and self-correction) create the effective thinking and solutions of the concerned problems. We need six questions to come to the solutions to given problems:

- Identify the problem. - What's the real question we are facing here?
- Define the context. - What are the facts and circumstances that frame this problem?
- Enumerate choices. - What are our most plausible three or four options?
- Analyze options. - What is our best course of action, all things considered?
- List reasons explicitly - Exactly why are we making this choice rather than another?
- Self-correct. - Let's look at it again. What did we miss?

We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, contextual considerations upon which that judgment is based. It is essential as a tool of inquiry. As such, critical thinking is a liberating force in education and a powerful resource in one's personal and civic life. It is a pervasive and self rectifying human phenomenon. Santos, et al. (2006, p.11) suggest the following stages to develop young learners' critical thinking.

Table No. 3

A Framework for Developing Young Learners' Critical Thinking

(Source: Santos, et al., 2006, p. 11)

Table No. 4

Stages for Developing Critical Thinking in Relation to Gendered Dualisms

Stage	Exercise	Pedagogical Procedure	What Students are asked to do
1	1 and 2	Stance	Take a stance concerning diacotomic essentialized constructions of boys and girls
2	3	De-familiarization	De-familiarize a commomsensical generalization cocerning teenagers
3	4	Concept construction	Reflect upon the contruction process of generalizations and stereotypes based on the classroom example
4	5	Group disscussion	Asssociate the ideas and broaden the reflection
5	Homework	Playing the ethnographer	Observe gender construction in the social world
6		Re-assessing the reflective experience	Systematize the knowledge collectively constructed

(Source: Santos, et al., 2006, p. 11)

A key issue enabling this framework is the spatial arrangement used for the discussion sessions. Table 5 shows how the teacher and the participants arrange critical thinking in the classroom. This configuration presents the maintenance of eye contact among interlocutors. The teacher, standing away from the circle, observes students' interactional work, occasionally chiming in comments to trigger reflective thinking.

1.1.7 A Theory of Critical Thinking

There are several scholars who have contributed to develop the theory of critical thinking. A process of questioning is the mental model which is adopted because of its reliability for achieving the purposes of the participants within the available time. The theory of critical thinking draws on and synthesizes research on some separate topics.

Theories of reasoning according to which people represent information about a problem by means of mental models of alternative possibilities, evaluate the models in the light of relevant background knowledge, update the models by adding new information as it becomes available, revise models to resolve internal inconsistencies, and draw conclusions by inspecting the surviving possibilities. (Laird, et al., 1983, cited in Facione, et al., 2000).

Theories of the cognitive mechanisms and processes involved in belief formation and decision making which vary in their reliability and their association with proficient performance in a domain (Johnson, et al., 1993, cited in Santos, 2006).

Concluding these points, critical thinking skill is exemplified by asking and answering critical questions about alternative possible ideas, with the intent of achieving the purpose of an ongoing activity. The model of critical thinking are embedded in three layers which are mental models, critical dialogue, and control based on reliability**.**

1.1.8 Language skills

Language is a means of communications. It is an abstractions based on the linguistic behavior of its users. Language is the way to communicate and exchange message between interlocutors. There are four basic skills of language which are listening, speaking, reading and writing. Among of those skills I have concentrated on reading skill which is a receptive skill. The writer communicates with the

reader and reader interacts with the writer's ideas and beliefs. Munby (1978, as cited in Sharma and Phayak, 2009. p. 232) note the following variety of skills in reading:

- Recognizing the script of a language
- Deducing the meaning and use of unfamiliar lexical items
- Understanding explicitly used information
- Understanding information which is not explicitly stated
- Understanding conceptual meaning
- Understanding the communicative value of sentences and utterances
- Understanding the relations within the sentences
- Understanding relations between the parts of a text through lexical cohesion devices
- Understanding cohesion between parts of a text through grammatical cohesion devices
- Extracting points to summarize and paraphrase the text
- Scanning to locate the required information.

Defining the reading skill, Grellet (1992, as cited in Chamot, 2006) states "Reading is an active skill. It constantly involves guessing, predicting, checking and asking oneself questions". In other words, it involves different information processing mechanisms. Further, both top-down and bottom-up approaches can be used in reading. In top-down process, the reader draws on their own intelligence and experience. We might compare this approach to an eagle's eye view of the landscape. In bottom-up process, the reader builds up a meaning from the black mark of the text, recognizing the words, working out through structures.

To sum up, all the language skills are interrelated to each other. For instance, reading and listening skills are used as receptive skills and speaking and writing

are used as productive skills and critical thinking skill is used to improve all the language skills. So, teaching the learners all language skills through critical thinking nowadays, recent researches have shown that reading and listening skills can also be called productive skills. For instance, one reads instructional manuals and sets a DTH antenna in proper place by using the right signal. Similarly, one reads an email and writes a reply to it. Similarly, listening and speaking are regarded as primary language skills whereas reading and writing are considered to be secondary language skills because we human beings are not compelled to acquire or learn the secondary language skills. With the integration of all the four language skills only, detailed language comprehension is possible.

1.2 Review of Related Literature

Research is a scientific study made on a topic under some specified conditions. It is carried out on the foundation of the previous study to find out some new results with new updated research procedures. The previous research studies prove to be guidelines for the next research. In the domain of the English language teaching, there are still many topics which are necessary to be studied. The 'Effectiveness of critical thinking in reading exercises' is one of them. The present study has tried to focus on the reading skill by providing the students an opportunity to enhance in critical thinking. Thus this research is a totally novel research in the department.

Several studies have been carried out to establish which elements should be included in the teaching of critical thinking, as well as which models promote the development of language skills. Hendrix (1995, p.32) designed a treatment to develop critical thinking skills in college students. The experimental group that received the treatment was compared to a group that received the standard reading program. The results of this study showed that the experimental group significantly improved their critical thinking skills and reading comprehension in comparison to the control one.

Critical thinking skills are essential for all learners in the classroom. Rogers (2006) carried out a research on “Teaching Critical Thinking Skills to fourth Grade Students Identified as Gifted and Talented”. The purpose of the study was to explicitly teach critical thinking skills to a group of four grade gifted and talented learners. The subject for this study was selected from 21 fourth grade students identified as gifted and talented Bowman Elementary School in Cedar Rapids, Iowa. There were four instruments used during the study to collect the data. The instruments included a teacher journal, student surveys, students’ journals, and a teacher observation inventory. The study showed the pre- and post-student assessments indicated that a basic understanding and application of the intellectual standards rose by 35%. The largest increase was in the area of naivety with the growth of 62%. The smallest gain was in the area of selfishness, showing only a 13% increase.

Similarly, Forfeiter, et al. (2007, as cited in Connerly, 2006) explored the effect of explicit instruction in an undergraduate course aimed at developing responsible environmental citizenship. The students were involved in discussion and written assignments dealing explicitly with specific critical thinking skills. This study reflected an approach to critical thinking skills instruction that calls for active work in preparing students, as well as the need to provide varied and meaningful opportunities to interact with these skills in the classroom. This study also pointed out that the best way to structure the learning experience to introduce critical thinking is to include these skills in the work with different subjects in the curriculum.

Saiz, et al. (2008, cited in Connerly, 2006) studied the efficiency of the structural component of Halpern’s model. They applied the model to a program for improving critical thinking among university students in which one experimental group followed the guidelines of Halpern’s structural component and the other experimental group received instruction in the same skills. The result showed that

in relation to the test that measure critical thinking skills, there were no major differences between the two groups. However, in the tests about critical thinking beliefs and analysis of arguments, both experimental groups had similar results and they were better than the control group. Hence, the results did not show significant improvement through the use of Halpern's model. This is one of the emerging areas since there is no research in our context I chose the area.

1.3 Objectives of the Study

The objectives of this study were:

a) To find out the effectiveness of critical thinking in reading exercises.
b) To suggest some pedagogical implications.

1.4 Significance of the Study

This study will be significant because it throws the light on the critical thinking aspect to teach language skills effectively in the classroom and provides insight in planning for further activities. Furthermore, language teachers who are teaching the new courses will be benefited from the study.

As the study provides the detailed information about the critical thinking skill to develop reading and writing skills, it will be important in the field of English Language teaching. Teachers, syllabus designers can modify their approach based on the finding of the study and will be helpful for further research in the area of critical thinking. This study will be valuable for the learners as well to develop their higher order thinking skills.

CHAPTER - TWO

METHOLOGY

2. Methodology

I adopted the following methodology to achieve the objectives.

2.1Sources of Data

This study used both primary and secondary sources of data equally.

2.1.1 Primary Sources

The primary sources of data of this study were thirty two students of B.Ed. first year studying major English, at Sanothimi Multiple Campus, Bhaktapur.

2.1.2 Secondary Sources

As secondary sources of data, I collected the materials available in print and electronic media which were related to critical thinking and reading skill. I went through different articles, books, journals, theses and reports published by different scholars. Some of them are Winter (1988), Swartz, et al. (1994), Facione et al. (2000) and Paul, et al. (2005).

2.2 Sampling Procedure

To carry out this research, I selected Sanothimi Multiple Campus, Bhaktapur. I used purposive sampling procedure. Thirty two Students were selected by using judgmental or purposive sampling procedures.

2.3 Tools for Data Collection

The main tools for collecting the data were test items. The test items were made including multiple choice, true-false, matching item, short types questions and long types questions. Lesson plans and teaching materials were the other supporting materials. Four tests were given to the students using the same test items as a pre-test, first progressive-test, second progressive test and post-test.

2.4 Process of Data Collection

Since the research was action research, I took a test of the students before starting to teach with new strategies as the pre-test. I taught the selected students for twenty days using the three active learning strategies which were TPS (think, pair and share) approach, SWOT (Strengths, Weaknesses, Opportunities and Threats) approach and five questions technique. A paper carousel was used to gather information, in which the students developed their thought on different topics using the template to consider the issues. The ideas were noted in the relevant heading (S-W-O-T) and those ideas were explored further using the five questions technique. The results, marking schemes, time allocations and all details of the selected populations were listed. The first progressive test and the second progressive test were given in the middle of the period and post-test was given at the end.

Test items required to test the 'Effectiveness of Critical Thinking' were prepared on the basis of the textbook for B.Ed. first year, 'New Generation English' and from the second year course that is 'Expanding horizon of English'. Altogether test items contained matching item, fill in the blank, true- false items, and essay type of questions. The test items which were collected from the chapters of these two books were set. While taking test, I took the help of subject teacher of the

campus for managing the class, instructing them for discipline and administering the test.

2.5 **Limitations of the Study**

This research work was carried out under the following limitations:

a) This study confined to thirty two students of B.Ed. first year from Sanothimi campus.
b) The exercises were taken from the course textbooks of B, Ed. first year and second year major English (The New Generation in English and Expanding Horizon in English).
c) This study was limited to the direct teaching in the classroom.
d) This study only focused on reading exercises.
e) The students selected for my research were the students of major English in B. Ed.
f) My research only focused on getting the effectiveness of active learning strategies to develop students' thinking skills in reading skill.
g) This study was especially focused on the cyclical process of action research which is based on Descombe, (1999, p.60).

CHAPER-THREE

ANALYSIS AND INTERPRETATIONS

This chapter deals with the analysis and interpretations of collected data. The data have been categorized mainly in four groups and analyzed separately. In this chapter, I have tabulated, analyzed, interpreted and compared the data in the following order.

a. Holistic Analysis
b. Analysis and interpretation of pre-test scores
c. Analysis and interpretation of first progressive-test scores
d. Analysis and interpretation of second progressive-test scores
e. Analysis and interpretation of post-test scores
f. Comparison of results of the pre-test and post-test
g. Analysis and interpretation of the data obtained through test results
h. Comparative analysis of the data obtained through test results

3.1 Holistic Analysis

3.1.1 Comparison of the Results of the Pre-Test and Post-Test Scores

The pre-test was taken before starting the intervention and the post-test was taken at the end of the intervention. The comparison between these two tests has been presented in the following table:

Table No. 5

Comparison of the Results of Pre-Test and Post-Test

Test	No. of Students	Obtained Marks	Percentage	Difference	Difference in %
Pre-Test	32	348	43.5	231	66.37
Post-Test	32	579	72.37		

There was a wide gap between the scores obtained by the students in their pre-test and post-test. Their total obtained score was 348 (that is 43.5 percent) in the pre-test out of 800 and the total obtained score in the post-test was 579 (that is 72.37 percent) out of 800. It showed that the score of post-test was increased 28.87 percent more than the pre-test score which proves that they improved their critical thinking while teaching them using active learning strategies. Therefore, it can be claimed that the active learning strategies are effective to develop students' 'Critical Thinking' in reading skills.

3.1.2 Analysis and Interpretation of the Pre-Test

Before I started teaching, I administered a set of test items as pre-test to determine the students' proficiency and capacity to think critically in reading skills. The full mark of the pre-test was fifty having six different test items viz. multiple choices, matching items, creative short questions, creative long questions and fill in the blanks. The score of the students in the pre-test is presented in the following table.

Table No. 6

Students' Score in the Pre-Test

S.N.	Full Marks	Obtained Marks	Number of Students	Percentage
1	50	27	2	54
2	50	22	2	44
3	50	29	4	58
4	50	16	4	32
5	50	17	4	34
6	50	23	2	46
7	50	18	4	36
8	50	21	4	42
9	50	19	4	38
10	50	24	2	48
Total	800	348	348	43.5
Average Score	21.27%			

The above table shows that the total mark obtained by the students was 348 (that is 43.5 percent) out of 800.The highest secured score was 29, that is 58 percent which was obtained by 4 students and lowest secured score was 16(that is 32 percent) which was obtained by 4 of students. Out of 32, 16 students secured the score lower than the average score. The average score of this test was 21.75. Sixteen students secured their score higher than the average score of the test. The result showed that half of the students were weak in their thinking skill so it can be claimed that the result was not satisfactory and the actual level of their thinking skill was noted to compare the improvement.

3.1.3 Analysis and Interpretation of First Progressive Test

After conducting the pre-test, I taught seven lessons using active learning methods to develop their creativity in reading skills. Those lessons especially consisted of reading comprehensions. After teaching these lessons to them, the first progressive test was administered. The following table shows the scores obtained by the students in first progressive test.

Table No. 7

Students' Score Secured in First Progressive Test

S.N.	Full Marks	Obtained Marks	Number of Students	Percentage
1	50	29	2	58
2	50	24	2	48
3	50	35	4	70
4	50	21	4	42
5	50	31	4	62
6	50	23	2	46
7	50	22	4	44
8	50	34	4	68
9	50	30	4	60
10	50	28	2	56
Total	800	438	32	54.75
Average Score	27.37 %			

The above table shows that the total mark obtained by the students was 448(that is 54.75 percent) out of 800.The average score of this test was 27.37. The highest mark secured by the 4 students was 35. The lowest score obtained by two students was 21. In the results of this test, more students crossed the boundary of average

mark and their secured marks showed the improvement in their performance. Thus, the record of the first progressive test showed the significance of active learning methods on reading skills because their scores were increased in comparison to the pre-test score.

3.1.4 Analysis and Interpretation of the Second Progressive Test

Table No. 8

Students' Score in the Second Progressive Test

S.N.	No. of Students	Full Marks	Obtained Marks in Frequency	Percentage
1	2	50	33	66
2	2	50	32	64
3	4	50	34	68
4	2	50	22	44
5	4	50	36	72
6	4	50	31	62
7	4	50	28	56
8	2	50	35	70
9	4	50	29	58
10	4	50	27	54
Total	32	800	492	61.50
Average Score	30.75 %			

The above table shows that that total obtained score was 492 that is 61.5 percent. The average score of this test was 30.75 percent. Four of the students secured 36, (i.e.72) percent which was the highest score in this test. The lowest score obtained by two students was 22 (i.e. 44 percent). Fourteen students got their score higher than the average score. The increased score proves that the result of active learning

is satisfactory to develop critical thinking in reading skills. The students obtained scores were higher than the scores of their first progressive test.

3.1.5 Analysis and Interpretation of the Post Test

After the completion of the first and second progressive tests, the record was noted and other seven lessons were taught using active learning methods to develop their creativity through reading skills. The test items of the post-test was similar to the pre-test which were made including the similar lessons taught them during experiment in the classroom. The scores of the students in the post-test have been analyzed in the following table.

Table No. 9

Students' Score Obtained in the Post-Test

S.N.	No. of Students	Full Marks	Obtained Marks	Percentage
1	2	50	37	74
2	2	50	38	76
3	4	50	40	80
4	2	50	33	66
5	4	50	44	88
6	4	50	39	78
7	4	50	27	54
8	2	50	41	82
9	4	50	42	84
10	4	50	30	60
total	32	800	579	72.37
Average Score	36.18 %			

The above table shows that the total obtained mark in the post-test was 579 (that is 72.37 percent) out of 800. The average score of this test was 36.18 percent.

Four students from the 32 secured the highest mark 44(that is 88 percent). The lowest score obtained by the 4 students got 27 (that is 54 percent). Out of 32, 18 students secured higher score than average score and 14 students' secured lower score than average percentage. As the average scores and the scores secured by the students in different tests are increased it can be claimed that the result of this test is satisfactory. They have obtained higher score in the post-test comparing to the earlier three tests. It shows that the active learning strategies supported them to think critically in reading skill.

3.2 Comparative Analysis of the Data Obtained Through Test Results

In this chapter, the result of all the tests viz. the pre-test, the first progressive test, the second progressive test and the post test are compared to each other to find the actual progress in students.

3.2.1 Comparative Analysis of the Pre-Test and First Progressive-Test Scores

The scores obtained by the students in the pre-test is compared and analyzed with the scores obtained by them in the first progress-test which is presented in the following table.

Table No. 10

Comparison of the Results of Pre-Test and First Progressive-Test Scores

Test	No. of Students	Obtained Marks	Percentage	Difference	Difference in %
Pre-Test	32	348	43.5	90	25.86
First Progress-Test	32	438	54.75		

The above mentioned table indicates that the total score of the pre-test was 348, i.e.43.5 percent and total score of the first progress-test test was 438 which is

54.75 percent. Similarly the increased mark of the first progressive test was 90 (that is 25.86 percent).

3.2.2 Comparative Analysis of First Progressive-Test and Second Progressive-Test

In this table, the score obtained by the students in their first progressive test and second progressive test are compared and analyzed with each other which is presented below.

Table No. 11

Comparison of the Scores of the First Progressive Test and Second Progressive Test

Test	No. of Students	Obtained Marks	Percentage	Difference	Difference in %
First Progress-test	32	348	54.75	141	32.19
Second Progress-test	32	492	61.5		

The above table shows that the mark of the first progressive test was 438, that is 54.75 percent and the total score of the second progressive test was 492 that is 61.5 percent. The increased mark of the second progressive test over first progressive test is 54, i.e. 12.32 percent. Thus, it is clearly noted that active learning methods enhanced to develop the creativity of the students of bachelor level through their reading skill.

CHAPTER - FOUR
FINDINGS AND RECOMMENDATIONS

The present study was conducted to find out the 'Effectiveness of Active Learning Strategies' to develop the thinking skills of students in reading comprehension. The active learning strategies (TPS approach, SWOT technique with five questions) were applied in the classroom while teaching them reading comprehension.

4.1 Findings

From the analysis and interpretation of all the data, the following findings are drawn:

a) The result shows that there is a wide difference in the scores obtained by the students in the pre-test and post-test. It means that the active learning strategies have helped them to develop their thinking skills.

b) Students were found more confident to display their ideas in the post-test and there were difference in the style of answers comparing to the answer sheets of the four tests.

c) It was found that they were not so much interested to get the answer from the reading passage but they were busy to collect the thoughts of their peers as well as their own thought to give the answer.

d) It was found that they themselves went into the depth of the topic or issue to accumulate the more knowledge.

e) The result also shows that there were changes in students when they were given to read some passage because they read not only to get the answer given in the text but in order to get the depth ideas of that text.

So, Active Learning seems to be effective in promoting reading skills and inevitable to promote the Critical Thinking of students through Reading Skills.

4.2 Recommendations

On the basis of the findings from analysis, the researcher has made the following recommendations for pedagogical implications and for further research.

a) Observing the positive performance of students, active learning techniques can be recommended to be applied while teaching reading skill to the higher level students to promote their 'Critical Thinking'.

b) By using active learning methodologies, it can be assured that learners will not only come to an in depth understanding of the issues involved, but also their motivation and enthusiasm will be heightened. So this method should be emphasized.

c) The research was limited to a government added campus in the Kathmandu valley. However, it cannot be claimed that the findings of this study are applicable for all levels and in all situations in the Nepalese context so to test the validity of research finding further researches on this topic is highly recommended.

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