A PHILOSOPHICAL ANALYSIS OF CRITICAL THINKING AS A SILENT PARTNER IN NIGERIA'S SECONDARY SCHOOL

Louis Osezua USIFO

UNIVERSITY OF BENIN

BENIN CITY

JANUARY, 2025

A PHILOSOPHICAL ANALYSIS OF CRITICAL THINKING AS A SILENT PARTNER IN NIGERIA'S SECONDARY SCHOOL

Louis Osezua USIFO
PG/EDU2110598

A PROJECT WRITTEN IN THE DEPARTMENT OF EDUCATIONAL FOUNDATIONS, FACULTY OF EDUCATION AND SUBMITTED TO THE COLLEGE OF POSTGRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF THE MASTERS OF EDUCATION IN PHILOSOPHY OF EDUCATION OF THE UNIVERSITY OF BENIN, BENIN CITY, NIGERIA

JANUARY, 2025

CERTIFICATION

We, the undersigned, certify that this study was carried out by Louis Osezua USIFO with Matriculation Number: PG/EDU2110598 in the Department of Educational Foundations, Faculty of Education, University of Benin, Edo State, Nigeria.

_____ _____

Dr. A.E. Osawaru **Date**
(Project Supervisor)

_____ _____

Prof. R. B. Danner **Date**
(Head of Department)

DEDICATION

This work is dedicated to Almighty God and to my uncle, Late Barr. Ejehi Usifo

ACKNOWLEDGEMENTS

As the researcher dedicated this Project to the blessed Trinity, he especially thanked God for the journey mercies and favour bestow on him in the cause of this program of study.

The researcher acknowledged and thanked his very hardworking and understanding supervisor and preceding head of Department, Dr. A. E. Osawaru; for his qualitative and rigorous philosophical contributions for the successful completion of this work.

The researcher's sincere thanks go to the Head of Department, Prof. R.B. Danner for his encouragement and advice during the program. He specially appreciates and thanked Late Prof. C.N. Musa, Dr. (Mrs.) R.J. Musa, Prof. (Mrs.) F.N. Ofuani, Dr. (Mrs.) J.E. Awanbor, Dr. (Mrs.) P.I.O. Aika, Dr. (Mrs.) D.O. Osa-Omoregie, Dr. F.O. Alli, Dr. Vincent Ebohon, and Pst. Philip Imokuede, and all the staff of the Department of Educational Foundations.

The researcher will forever be grateful to them all. Finally, the researcher' thanked his family for their prayers, love and support to him throughout the period of this program of study. The researcher wholeheartedly extend the assurance of his regard to them all. Thanks and God bless. Amen.

TABLE OF CONTENTS

ABSTRACT

This study critically examined the Socratic Method as a template to appraise the nature of critical and reflective thinking in the pedagogical process of Nigeria's basic education in developing the educated person. The study explicated how Socratic Tradition can assist pedagogically, the development of critical minded student in Nigeria's Basic level of education. Five research questions guided the study and the scope of the study is to analyse how critical thinking is embedded within educational frameworks, curricula, and pedagogical practices, with a focus on its implicit presence and the extent to which it is explicitly taught, assessed and on students learning outcome.

The study as one in the field of educational philosophy applied the relevant qualitative tools and techniques that ensured academic rigor. In this study, the attempt was on analysis of the epistemic imports of Socratic Tradition for education and the educated person and implication to Nigeria's basic education. Specifically, the study relied on documentary analysis, which is interpretive phenomenological research method pivoted on hermeneutics, and also utilized the traditional methods of enquiry: namely the speculative; analytic; and prescriptive methods.

Findings revealed that the current ineffective pedagogical strategies in Nigerian schools like conformist model and authoritarian model are methods that kill creative ability of learners through teachers' activities. If application of critical thinking pedagogy can be reawakened or energised in Nigerian educational philosophy and practice, there is every tendency that the quality of education received in Nigeria will improve through the deducible principles of Socrates. These principles includes mutual dialogue, appropriate questioning that engender enquiry, relaxed and conducive environment, linking curriculum contents and classroom activities to life outside classroom through solving true life problems in the classroom. On the basis of this deduction, it is therefore recommended for teachers at all levels of education, especially at the basic education level, as a paradigm shift in pedagogical skills, the acquisition and employment of critical thinking in developing more active learners by acquiring the skills of problem-solving, moral formation, independent thinking and autonomous learning through the process of teaching and learning in a formal school setting.

CHAPTER ONE

INTRODUCTION

Background to the Study

In the landscape of modern education, the emphasis on critical thinking has emerged as a cornerstone in the development of well-rounded learners equipped to navigate the complexities of the contemporary world. While explicit in its importance, critical thinking often operates as a silent partner within the curriculum, subtly shaping educational outcomes and molding individuals' intellectual capacities. Recent interest in dialogic approaches in education is reflected in a trending literature on the needs for critical thinking in the educational process for proper human development. This interest has been largely directed towards enhancing student's reasoning. However, dialogue approaches have also been suggested as a means to develop critical thinking (Moon, 2008). This is to facilitate student's participation in their learning, and in the wider society (Slavien, 2006). Specifically, the dialogic approach and Bailin's normative concept of critical thinking explores greater participative involvement of students. It also considers what dialogue approach might offer in appraising the roles of critical thinking abilities for students' academic performance. Critical thinking skills are recognized by education scholars as key requirements for the teaching and learning process. The concept of critical thinking has its etymology from ancient Greek. The word "critical" was derived from two Greek roots: "Kriticos"(meaning, discerning judgement), and "kriterion"(meaning, standards). Etymologically, then, the word implies the development of discerning judgement based on "standards". In Webster's New World Dictionary, the relevant entry reads "characterised by careful analysis and judgement" and is followed by the gloss

"critical — in its strictest sense — implies an attempt at objective judgement so as to determine both merits and faults". Applied to thinking, then we might provisionally define critical thinking as thinking that explicitly aims at well-founded judgement and hence utilises appropriate evaluative standards in the attempt to determine the true worth, merit or value of something.

Critical thinking is one of the most important concepts in the 21st century and its origin dates back to Plato. Philosophers such as Socrates, Plato and Aristotle regarded thinking as the ability to ask questions, test and think about ideas and values (McConnell, 2008).It was further developed from the Anglo-American Philosophical tradition (also known as analytic philosophy).Then, critical thinking became an ideal in Post-War North America, and has gained much attention in philosophy and psychology.

The writing of Socrates, Plato, Aristotle, and more recently, Facione, Lipman and Paul, Bailin and Siegel, exemplify this philosophical approach for proper development. This approach focuses on the hypothetical critical thinker, enumerating the qualities and characteristics (Abilities) of this person rather than the behaviours or actions (skills) the critical thinker can perform (Lewis and Smith, 1993). Hence, Sternberg (1986) has noted that the Philosophical school of thought-rationalism, approaches critical thinking as an ideal type, focusing on what people are capable of doing under the best circumstances. Also, this preoccupation with the ideal critical thinker is evident in the American Philosophical Association's consensus portrait of the ideal critical thinker as someone who is inquisitive in nature, open-minded, flexible and fair-minded, and has a desire to be well-informed, understand diverse viewpoints, and is willing to both suspend judgement and to consider other perspectives (Facione, 1990). Hence, the primary subject matter of critical

thinking is the proper use and goals of a range of reasoning methods, how they are applied to a variety of social contents, and errors in reasoning. Analytic philosophy is centred on the linguistic clarification of thought. And the analytic philosophers believed that to think is to think about something, and that "something" is the "thoughts or ideas" that come to reality through experience, intuition and reasoning.

The purpose of critical thinking is to seek ways of understanding the mind, and then training the intellect so that such "errors" "blunders" and "distortions" of thought are reduced. This study assumes that the capacity of students for a good reasoning can be nurtured and developed and appraised by educational process. Critical thinking is focused on practical goals and values. It is about an ancient Greek ideal of "living an examined life". It is based on the skills, the insights and the values essential to that end. It is a way of going about living and learning that empowers us and our students in quite practical ways. When taken seriously, it can transform every dimension of school life; how we formulate and promulgate rules; how we relates to our students; how we encourage them to relate to each other; how we cultivate their reading, writing, speaking and listening, what we model for them in and outside the classroom and how we do each of these things. Of course, we are likely to make critical thinking a basic value in school only insofar as we make it a basic value in our own lives.

Thinking can be classified into four types of "thinking skills" namely: convergent or analytical thinking, divergent thinking, critical thinking and creative thinking (Drew, 2019). These skills help us to: (a) understand the world around us, (b) think critically, (c) solve problems, (d) make logical choices and (e) develop our own values and beliefs. The importance of critical thinking in everyday life could not be over-emphasised. The most

important of all is that it helps us to deal with everyday problems as they come our way, and very often this thought process is even done subconsciously (Sieck, 2017). It helps us to think independently. Critical thinking and education plays a complimentary role in the learning process. For Meyer (1976), the aim of education is to nurture the individual, to help, to realise the full potential that already exists inside him or her. There has always been a strand of educational thought that held that the strengthening of the learner's thinking should be the chief business of the school and not just an incidental outcome—if it happens at all (Lipman, 2003). Qualified education should show the way to students about what and how to learn. While students evaluate what they learn and their learning methods, they manifest their critical thinking abilities (Emir, 2009). As Cotton (1991), indicates: "If students are to function successfully in a highly technical society, then they must be equipped with lifelong learning and thinking skills necessary to acquire and process information in an ever changing world (p.15)".

One of the aims of education should be for the development of students' thinking skills as well as motor skills, which is a basic goal of contemporary approaches in education. According to Elder and Paul (2008), students are not passive but active, while they are realising critical thinking. There are vast ways to spark critical thinking in the classroom. According to Ferlazzo (2015), these include: Critical expressionism, Trans-mediation, Socratic seminars, Classroom debate among others. Ferlazzo was of the opinion that critical thinking has the power to lunch students on unforgettable learning experiences while helping them develop new habits of thought, reflection, and inquiry. The act of developing these skills was to prepare students to examine issues of power and to promote transformative change in the world around them.

The strategies employed for developing and teaching critical thinking in order to deepen the quality of students' capacities for sound reasoning across the curriculum was termed “critical pedagogy” (Gunn, Grigg, and Pomahac, 2006). Hence, critical pedagogy is a term that shows the relationship between critical thinking and pedagogy. Critical pedagogy in a mainstream school setting would teach young people how to think critically about the world around them, the social dilemmas and injustices they experience, and how best to think, say and act in order to make a change for the better (Gunn, Grigg, and Pomahac, 2006). The use of dialogue as a teaching method can be traced to Socrates. In the Socratic tradition, the teacher acts as facilitator (midwife) in the students’ search to construct their knowledge. The teacher uses dialogue to support the students, to increase their participation in education, so as to shift power from her or himself to the students. Dialogue are the dominant form of communication (Ruggiero, 1990), and effective dialogue interaction involves multiple skills, including the ability to converse with others, the skill of qualifying one’s view, and the ability to elaborate and persuade (Moffett, 1983). These skills are central to the learning experience and the development of critical thinking skills of all students, regardless of their level.

To foster critical thinking in students, according to Facione (2015), it demands that “teachers need to devise tasks and activities and improve their teaching methods to encourage such thinking”. With proper support and instruction to the learners on how to construct, analyse, interpret and evaluate sources of information as well as other knowledge claims, epistemic cognition and pedagogy can help to foster critical thinking in the learners (Abrami, et al., 2015). In a classroom where the teacher explicitly focus on the argument and justifications for particular ideas in their discipline (i.e. emphasising not just

the “what” but also the “why and how”) students are more likely to engage in effective epistemic cognition (Murphy, et al., 2014).

On the state, and problems of critical thinking in Nigeria's learning environment, it is noted that the quality of training given to the learners, is a determinant factor for the quality of the educational systems. Accordingly, Ijaiya (2008) stated some of the factors to includes: over emphasis on knowledge and recall, at the expense of reasoning; excessive use of objective questions at the lower levels, while emphasis is even shifting to computer based testing at the tertiary level which encourages factual questions; overcrowded lecture rooms which gives little or no time for useful interaction and questioning; lecturers’ work-overload and role conflict due to shortage of personnel; lack of critical thinking in the various course contents; poor knowledge of critical thinking by lecturers; poor training of students from the lower levels of education in critical thinking skills; and over emphasis on certificate rather than on skills acquired. In addition, schools in Nigeria now pay little attention to co-curricular activities that promote critical activities among the student population, such as quiz and essay competitions, debates, public lectures and seminars by students etc.

In today’s knowledge driven world, the advantages lie with those who can think critically and keep improving their knowledge. Critical thinking helps one to develop analytical skills useful to evaluate the data for interpreting in the most optimal way. Everyone needs critical thinking skills to be successful in solving the problems in difficult situations, because thinking as earlier stated, is one of the most necessary aspects of human lives Also, in the school system, the inability to inculcate the right critical thinking skills and learning language on the students in the classroom by some teachers, often lead to the

failure of quite a number of students. For example, the phobia of many students in mathematics may not only be due to the fact that they cannot do some mental sums and solve problems of simple calculations but because of the language and terms used in teaching the subject. With some objectives measured that revealed weakness in reasoning, mindset and expression of ideas, there are effective training teaching techniques that can strengthen them. It was in consideration of the preceding observations about the essence of critical thinking and its paucity in Nigeria's secondary educational practice that this study attempts to analyse Critical thinking as a silent partner in the curriculum. In this light, this study will critically examine the significance of the silent presence of critical thinking within the curriculum in cultivating informed citizens, innovative thinkers, and lifelong learners capable of navigating the complexities of the modern world with wisdom and discernment.

Statement of the Problem

Despite the widespread recognition of the importance of critical thinking in education, there exists a significant gap in our understanding of its implicit role within the curriculum. While critical thinking is often touted as a fundamental skill essential for success in academic and real-world contexts, its integration into educational frameworks is frequently subtle and tacit, lacking explicit instruction and assessment. Educational scholars as well as philosophers have examined the relevance of critical thinking skill and have come up with likely suggestions to be followed in the integration of the skill into the educational processes. Past efforts by educational scholars have articulated the likely causes of inefficient deployment of critical thinking skill as conformity model and authoritarian model, but no specific measure was put forward as a perfect solution to the

educational problem especially in form of teaching. Considering the rates, levels and manners in which learners at all levels of education in Nigeria are becoming conformist and passively (uncritically) docile, it therefore appears that the integration of the critical model into teaching and learning would foster learner-centred pedagogy as proffered by the National Policy on Education (NPE) as self-fulfilling and self-actualization educational activities. Again, a critical look at Nigerian educational theory and practice shows that there is a great lacuna (wide gap) between the two because the form of teaching done, does not allow for attainment of critical thinking skill especially going by the activities of some teachers at all levels of education.

Therefore, there is a need to improve upon the already established curriculum and pedagogy so as to actualize the production of logical and critical conscious individuals who could participate and meaningfully contribute to the development of the nation through our educational system.

Research Questions

The study seeks to address the following questions:

1. What is Critical thinking?
2. What impact has Critical thinking played in curriculum?
3. How is Critical thinking incorporated into subject specific curricula?
4. How is Critical thinking implemented for the development of the Nigerian Child?
5. At what ends is the implementation of the subject specific curricula contemporarily relevant towards the development of the Nigerian Child?

Purpose of the Study

The main purpose of the study was to deepen our understanding of the implicit role of critical thinking within the curriculum and its implications for the student learning, equity, pedagogy and educational policy.

Specifically, the study will investigate:

- Critical thinking as a concept and a means of philosophizing.
- The essence of critical thinking in educational curriculum.
- To explicate how the Socratic dialogue can foster critical thinking in the students.
- To speculate and purview rational and practical effort critical thinking is incorporated into subject specific curricula in the educational system of Nigeria.
- The implications and relevance of critical thinking subject specific curricula to the development of the Nigerian Child.

Significance of the Study

This study would be significant in many ways to humanity:

- That it would contribute to reduce the dearth of study on a pedagogical skill that focuses on the development of critical thinking through praxis by teachers at all levels of education in Nigeria.
- It would also actively cater for the acquisition of critical thinking skills in learners through the teaching and learning processes in Nigeria basic education practice. In other words, it would contribute to the existing teaching pedagogies for teachers to use.
- It would also be unique in the sense that it is a contribution to knowledge, especially in the area of curriculum development from philosophy of education.

Scope and Delimitation of the Study

This scope was basically to analyse how critical thinking is embedded within educational frameworks, curricula, and pedagogical practices, with a focus on its implicit presence and the extent to which it is explicitly taught, assessed and on students learning outcome.

Definition of Terms

For the purpose of clarity, the key concepts (words) which are crucial to the understanding of this work are operationally defined.

Critical Thinking: is a cognitive process that involves analyzing, synthesizing, and evaluating information to make reasoned judgments or decisions.

Silent Partner: refers to any individual or entity that provides support, assistance, or backing without actively participating or being publicly acknowledged.

Curriculum: is a structured plan or framework that outlines the goals, content, learning experiences, and assessment methods for a particular educational program or course of study. **Pedagogy:** Pedagogy is the scientific study of the techniques or method and practice of teaching, especially as an academic subject or theoretical concept. The term pedagogy can be used to define the various ways that teaching and learning are carried out, in an educational sense.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter presents a review of related literature discussed under the following sub headings.

- ❖ Conceptual Framework
- ❖ Concept of Critical Thinking
- ❖ Socratic Tradition and Active Learning
    - Reflective Thinking through collaborator efforts
    - Independent Learning in the Socratic Pedagogy
- ❖ Developing and Fostering Critical Thinking in Students
    - Critical Thinking and Education
    - Critical thinking and Classroom setting
    - The Role of Teachers
    - Strategies for Developing Critical Thinking in Students and Pedagogical Approach to Developing Critical Thinking
- ❖ Critical Thinking in Nigeria Education and Learning Environment- the state and common issues.
- ❖ Summary of Reviewed Literature

Conceptual Framework

The conceptual framework that guided this study is the Socratic Method or Dialectics, the Socratic Method is a dialogue between teacher and students, instigated by the continual probing questions of the teacher, in a concerted effort to explore the underlying beliefs that shape the students' views and opinions.

The Socratic dialectics method is a kind of logical process. “Dialectics” literally means a method of conversation or debate. It is a method of argumentation employing what modern logicians call “the method of contrary case” it states that a statement and its denial cannot both be true at the same time. It is used for the purpose of eliciting from someone to whom it is applied information which he possesses, but of which he may not be aware. Socrates also employed inductive reasoning, i.e. beginning with particular cases and ending up in the universal knowledge as a conclusion. He would, for example, ask somebody to define justice, to define law, or to define man etc. From particular instances of justice or law or man etc, he would lead people to the universal idea of man, law, justice and so on. Contrary to the relativism and skepticism of the Sophists, Socrates was convinced that there was an objective and universal knowledge attainable by man, and his aim was to lead men to this knowledge.

Hence, he strongly opposed the relativism and skepticism of the Sophists. Therefore, to characterise thinking as “critical” is to judge that it meets relevant standards or criteria of acceptability, thus it is appropriately thought of as “good.” Hence, Ennis, define critical thinking as “reasonable reflective thinking that is focused on deciding what to believe and do” (Ennis, 1987:10), and offers a detailed list of abilities, skills, and dispositions that thinking (or thinkers) must manifest if it is (they are) to be critical. Accordingly Siegel, characterises the critical thinker as one who is “appropriately moved by reasons” (Siegel, 1988:23), and emphasises the critical thinker’s mastery of epistemic criteria that reason must meet in order to be rightly judged to be good reasons, that is, reasons that warrant beliefs, claims, and actions. Similarly, Paul (1990) conceived of critical thinking in terms of the ability and disposition to critically evaluate beliefs, their

underlying assumptions, and the world views in which they are embedded. Lipman (1991) defines critical thinking as thinking that facilitates judgement because it relies on criteria, is self-correcting and is sensitive to context.

Concept of Critical Thinking

The concept of critical thinking features prominently in all the skills or abilities and dispositions that learners are expected to acquire through the type of education being provided for them. One who cannot think may not be able to solve even the minute problem. We live in a world of problems, and it will only take a sound mind imbued with reflective thinking, which can engage in a deep analysis, to come up with the cause of the problem at hand and generate possible solutions to arrive at a decision in order to solve or get out of the problem. Learning how to think is the goal of education. Thinking is the ultimate goal of training and a crucial component of the educational process. There are different ideas about critical thinking because critical thinking is a complex concept and includes complex activities and mental processes that are not easy to describe and measure (Vacek, 2009). This invariably means that critical thinking is a disposition of the mind and the human mind is by nature heavily influenced by illusion and prejudice, which cannot be predicted.

What is Critical Thinking?

Critical thinking is a variety of good thinking. Philosophical theorists of critical thinking have agreed that the concept is essentially a normative one because it refers to how such thinking is carried out. Critical thinking does not describe one type of thinking among others, but is an umbrella term that refers to the quality of thinking irrespective of the context or activity. Critical thinking is the rational, skeptical, unbiased and objective

analysis, interpretation, evaluation of ideas (facts, evidence, observations or arguments), in order to form a sound judgement, or to decide if an action, or something is right or wrong, good or bad, in accordance with normative criteria or standard of acceptability. It is a form of emotional intelligence. Someone with critical thinking skills can think clearly and rationally when the situation demands it. It allows them to perform problem-solving and decision-making more effectively. As a result, you can look further than what you see at face value. You're able to analyse what you see from a situation and gain some insight that goes further than what's obvious to anyone from the outside. Critical thinking also requires being able to understand the logical connection between two or more ideas or concepts. For example, a student trying to solve mathematics quadratic equations needs to think critically about other methods that can be used to arrive at the same answer.

The term skills and abilities are used interchangeably. The difference is whether the quality in question was learned or innate. Skills are the capacities or proficiencies a person acquires through deliberate, systematic and sustained effort in order to effectively carry out activities or job function. Skills are possible to teach, test and measure. Abilities are the qualities of being able to perform or do something. Abilities are innate traits that a person possesses or acquires without any formal instructions. They are thinking skills that help us to express our thoughts or ideas on any phenomenon. These include areas such as emotional intelligence, thinking fast, being flexible, determination, self-motivation and talent or skills to interpret, analyse, evaluate, explanation, problem solving, research, asking of questions, communication and observation, among others. Hence, the theory of critical thinking varies from one philosopher, scholar, or schools of thought to another, in line with their respective concerns. And the lack of relationship between philosophy and

psychology is the reason for having different definitions of critical thinking (Reed, 1998). Hence, this literature review discusses critical thinking from the philosophical, psychological, and educational perspectives or point of view.

Philosophical Perspective

The philosophical approach draws heavily on writings from Socrates, Plato, Aristotle, Dewey and more recently, Bailin, Siegel, Lipman, Facione, Paul, and many others placing a lot of emphasis on disposition and the character of the critical thinker as opposed to the behaviours and processes associated with critical thought. A very commonly cited analogy of this school of thought is drawn from Socrates in Plato's Republic, where he used a 'Cave Analogy' to illustrate how our world-view shapes the assumptions we make, and the consequences of this interrelationship on how we react or respond to other world-views. The reliance on disposition implies that these are attitudes that cannot be easily taught. But rather being immersed in a culture where this happens often, gives way to the tendency for anyone to cultivate the habit associated with criticality through modelling the behaviours of others. This view is shared by modem-day philosophers such as Paul (1993), for example, who posits that 'critical thinking is based on two assumptions: first, that the quality of our thinking affects the quality of our lives, and second, that everyone can learn how to continually improve the quality of his or her own thinking' (p.23). This definition pushes the debate of critical thinking and analysis to something that can be learned and taught. But most importantly, Paul's theory focuses on the search for truth and distinguishes between Sophistic thinkers, who use their critical thinking capacities to defend their own interest by unearthing fallacies in other people's arguments and reasoning but fail to apply these same principles to their own, and then

'true' critical thinkers, who are unbiased in their critique and search for truth, hence question their own disposition. Paul's critique of earlier philosophical perspectives on critical thinking focused on identifying minimal conditions for an adequate theory of critical thinking. Paul's arguments were premised on the following:

* the act of thinking pervades every aspect of life and every dimension of the human mind;
* though, it is human nature to think, it is not natural for humans to think well (human nature is heavily influenced by prejudice, illusion, mythology, ignorance and self deception);
* Therefore, we need to be able to intervene in thinking, to analyse, assess it, and where necessary, improve on it.

Paul posited that there are intellectual abilities that cannot be completely separated from intellectual traits in the mind of the critical thinker. This is evident from a number of scholarly works where critical thinkers are able to present two contrasting views accurately and provide thorough insights into both sides of the debate. For Paul, people who are better critical thinkers have the capacity to present alternative and opposing viewpoints in a coherent manner to provide understanding and new insights(intellectual empathy), distinguish what they know from what they do not know and are prepared to examine new evidence and arguments even if such examination leads to the discovery of flaws in their own beliefs (intellectual humility), think for themselves while adhering to rigorous standards for thought (intellectual autonomy), and are open to critique and they can be moved by reasoning that is better than their own (confidence in reason).

Accordingly, Paul (1992) discusses critical thinking in the context of "perfections of thought". This preoccupation with the ideal critical thinker is evident in the American

Philosophical Association's Consensus which portraits the ideal critical thinker as someone who is inquisitive in nature, open minded, flexible, fair-minded, has a desire to be well informed, willingness to understand diverse viewpoints and is willing to both suspend judgement and to consider other perspective (Facione, 1990). These are the qualities of a critical thinker. Such personalities must not be rigid but free-minded in order to gain the admiration and attention of others. Those working within the philosophical tradition also emphasise qualities or standards of thought of a person who has the ability to understand procedures, events or affairs critically before assuming any judgement about it. For example, Bailin (2002) defines critical thinking as thinking of a particular quality — essentially good thinking that meets specified criteria or standards of adequacy and accuracy. These normative standards or criterial plays the role of an 'adjective' to our thinking skills. These normative criterial includes: fairness, clarity, precision, logicalness, accuracy, relevance, breadth, depth and significance. When our thinking skills are interdem with these normative criterials, then we can confidently say that such is a good or critical thinking, or good performance. It is these normative standards that determine whether our thinking are critical or uncritical. Furthermore, the philosophical approach has focused on the application of formal rules of logic (Lewis & Smith, 1993). One Limitation of this approach to defining critical thinking is that it does not always correspond to reality (Sternberg, 1986). By emphasising the ideal critical thinker and what people have the capacity to do. This approach may have less to contribute to discussions about how people actually think. While the scholars from the philosophical school of thought differ in their conception of critical thinking, the need to focus on the importance of argument analysis that stems from the thrust of informal logic is common to all of them. All the scholars from

the philosophical school of thought also agree on the need to concentrate on the analysis of arguments on grounds of their validity and soundness, and the key role of thinking dispositions (Paul, 1995; Ennis, 1987).

Psychological Perspective

The psychological approach contrasted with the philosophical approach in two ways. First, cognitive psychologists tend to focus on how people actually think versus how they could or should think under ideal conditions (Stenberg, 1986). Second, rather than defining critical thinking by pointing to characteristics of the ideal critical thinker or enumerating criteria or standards of "good" thought, those working in cognitive psychology tend to define Critical thinking by the types of actions or behaviours critical thinkers can do. Typically, this approach to defining critical thinking includes a list of skills or procedures performed by Critical thinkers (Lewis & Smith, 1993).

Philosophers have often criticised this latter aspect of the cognitive psychological approach as being reductionist — reducing a complex orchestration of knowledge and skills into a collection of disconnected steps or procedures (Sternberg, 1986). For example, Bailin (2002) argues that it is a fundamental misconception to view critical thinking as a series of discrete steps or skills, and that this misconception stems from the behaviourist's need to define constructs in ways that are directly observable. According to this argument, because the actual process of thought is unobservable, cognitive psychologists have tended to focus on the products of such thought — behaviours or overt skills (e.g. analysis, interpretation, formulating good questions). Other philosophers have also cautioned against confusing the activity of critical thinking with its components skills (Facione, 1990), arguing that critical thinking is more than simply the sum of its parts (Van Gelder, 2005).

Indeed, a few proponents of the philosophical tradition have pointed out that it is possible to simply "go through the motions" or proceed through the "steps" of critical thinking without actually engaging in critical thought (Bailin, 2002).

Educational Perspective

Those in the field of education also participated in the discussions about critical thinking. Benjamin Bloom and his associates constitute this category. Their taxonomy for information processing skills is one of the most widely cited sources for educational practitioners when it comes to teaching and assessing higher-order thinking skills. For Bloom, taxonomy is hierarchical, with "comprehension" at the bottom and "evaluation" at the top. The three highest levels (analysis and synthesis, and evaluation) are frequently said to represent critical thinking (Kennedy, et al., 1991). The benefit of the educational approach is that it is based on years of classroom experience and observations of students' learning, unlike both the philosophical and the psychological approach (Sternberg, 1986). However, some have noted that the educational approach is limited in its vagueness. Concepts within the taxonomy lack the clarity necessary to guide instruction and assessment in a useful way (Ennis, 1985; Sternberg, 1986). Furthermore, the frameworks developed in education have not been tested as vigorously as those developed within either philosophy or psychology (Sternberg, 1986).

Areas for Agreement: Most philosophical accounts of critical thinking involves two related, but conceptually distinct aspects or dimensions: the ability or skills to reason well and the disposition to do so. These are discussed below.

Skills/Abilities: The term skills and abilities are used interchangeably, but they are different. The difference is based on: (a) the quality of the thinking or action in question (b) whether

it was innate or learned. Abilities could simply be referred to as the potential of a person to perform or do something. These are natural or innate traits that a person possesses or acquired without formal instructions. They include areas such as talent and emotional intelligence. They are much harder to teach, test and measure. Examples include running, planning and organising, self-motivation, thinking fast, talent to interpret, analyse, evaluate, etc. On the other hand, skills could be seen as the capacities or potentials possessed by a person through deliberate, systematic and sustained effort in order to effectively carry out activities or job function exceptionally well. Skills are the mental activities you use to process information, make connections, make-decisions and create new ideas. Everybody has thinking skills, but not everyone uses them effectively. Effective thinking skills are developed over a period of time through training and hands-on experience. Examples of critical thinking skills are: analysis, interpretation, inference, explanation, self-regulation, open-mindedness, problem-solving, typing, leadership, communication and operating a vehicle or machine. Good thinkers see possibilities where others see only roadblock or obstacles. A skill can be thought of as a competency gained by knowledge, practice, or experience that can be measured and observed.

Despite the differences among the three schools of thoughts stated above and their approaches to defining critical thinking, there are some areas for agreement. First researchers of critical thinking typically agree on the specific abilities encompassed by the definition, which include:

- analysing arguments, claims, or evidence (Ennis 1985; Facione, 1990: Halpern, 1998; Paul, 1992)
- making Inferences using inductive or deductive reasoning (Willingham, 2007)

- judging or evaluating (Lipman, 1988) and
- Making decisions or solving problems (Halpern, 1998).

Other abilities or behaviour identified as relevant to critical thinking include asking and answering questions for clarification; defining terms; identifying assumptions; interpreting and explaining; reasoning verbally, especially in relation to concepts of likelihood and uncertainty; predicting and seeing both sides of an issue (Ennis, 1985; Paul, 1992; Facione, 1990). Critical thinking skills, however, are not stand-alone abilities. An individual requires the appropriate critical thinking disposition to use those skills (Friedel, et al, 2008; Tishman, et al., 1993).

Approaches that develop critical thinking skills canalso improve critical thinking disposition (Tishman and Andrade, 1996). Research has suggested that, being inherently linked, both critical thinking skills and disposition should be developed together (Kitchener and King, 1994). This was supported by Facione, et al. (1995), who argued that, as skills and dispositions are mutually reinforced; they should be modelled and taught together because critical thinking dispositions are forerunner and gateways to critical thinking activity.

Disposition: Disposition is the second component of critical thinking. A critical thinking disposition can be defined as the consistent internal motivation to engage problems and make decisions through the use of critical thinking (Facione, et al., 1996) and is a measure of the tendency towards critical thinking (Stedman and Andenoro, 2007). Critical-thinking dispositions are attitudinal and can be developed, although their development may take longer than the development of critical thinking skills.

Disposition consists primarily in valuing good reasoning and being disposed to seek reasons, to assess them, and to govern belief and actions on the basis of such assessment. Researchers working in the area of critical thinking recognized that the ability to think critically is distinct from the disposition to do so. Having the skills or abilities to determine the goodness of candidate reasons for belief, judgement, or actions may be necessary, but cannot be sufficient for critical thinking, because a given thinker may have the ability but not (or not systematically or routinely) use it. Hence, most theorists of critical thinking have argued that along with the skills or ability to access the probative force of reasons, critical thinkers must also have the relevant disposition to do so. These dispositions have variously been cast as attitudes or habits of mind. (Facione, 2000; Bailin, et al., 1999). Critical thinkers have specific traits that allow them to think the way they do. Some people are predisposed to these traits, while others need to develop them actively. Some of these dispositions include: Open-mindedness; Respecting evidence and reasoning; Scepticism; Being able to consider different perspectives and points of view: in other words, having cognitive flexibility; Clarity and precision and Not being stuck in one position.

Furthermore, most theorists have outlined a subset of dispositions that are also necessary for critical thinking — including: open-mindedness; fair-mindedness; inquisitiveness; the propensity to seek reason; the desire to be well-informed, flexibility; and others viewpoints (Bailin, et al., 1999; Facione, 1990; Ennis, 1985; Halpern, 1998). This “two components” (skill/ability and disposition) conception of critical thinking encompasses both a reason assessment component and a disposition component, and is endorsed by most theorists. Importantly, critical thinking dispositions are precursors and

gateways to critical thinking activity. A lower disposition is less likely to result in meaningful critical thinking that leads to problem solving, solutions, and decision making, whilst a higher disposition would be more likely to lead to these outcomes (Irani, et al., 2007).

Types of Thinking

According to Drew (2019), there are four types of "thinking skills", they are;

Creative Thinking

Divergent Thinking

Convergent or Analytical Thinking

Critical Thinking

We use these skills to help us think critically, solve problems, make logical choices and develop our own values and beliefs.

Creative Thinking: This involves thinking about a topic in unusual, unconventional and alternative ways to generate brand new, innovative ideas about an established topic. A creative thinker will try to address an issue from a perspective that hasn't been used before. While creative thinkers may appear illogical, it is indeed a great driver of human development. Creative thinkers identify gaps in market places or new, easier, faster and better ways of doing things. When a creative thinker comes up with a great new way of approaching an issue, their new method can become the new orthodoxy. Critical thinking is different from creative thinking in the sense that critical thinking requires you to carefully and logically analyse what information is given to you. Both are important to maximise results in any given situation.

Divergent Thinking: This is the exact opposite of convergent thinking. It involved coming up with solutions, paths forward or new ideas when there is no single correct answer. Questions like "should I study to become a doctor or a lawyer?" may not have a simple answer. You might be good at both, and both options might bring you happiness and a good life. So which option should you choose? To come up with solutions to questions

without clear answers, you need to break down the possibilities and analyse each part. You might create a pros and cons list, a venn diagram or a table to lay out your options and consider each one in turn. We often encourage divergent thinking from a very young age. For example, we encourage children to play or simply 'be playful' in order to solve problems and discover how their world is complex and full of possibilities.

Convergent/Analytical Thinking: This is the process of coming up with the best answer to a question using our memory, resources around us, or logic. This thinking skill does not require significant creativity or lateral thinking strategies. It is not the best for solving problems that are complex or require thinking out of the box. Instead, it uses a very straightforward thought process. A convergent thinker simply needs to apply already established procedures and memory recall to reach the 'correct' answer. Convergent thinking is very commonly used for standardised and multiple choice tests. These sorts of tests simply assess our knowledge and ability to apply knowledge to simple and logical situations. The key elements required to be a skilled convergent thinker are: speed, accuracy and logic.

Critical Thinking Skills: This involves analysing or evaluating something in order to form a judgement about it. A critical thinker does not take the assumptions of a topic for granted. Instead, critical thinking involves 'critiquing' what you are viewing, using your available intellectual knowledge. People who think critically can use three processes to develop critical insights on a topic: deduction, induction and abduction.

Deductions: This includes the critical thinking skills that involve drawing conclusions based On the facts (particular fact) at hand. You have all the facts available to you to come to a clear and unambiguous conclusion about a topic. For example, a doctor does blood

tests to determine if someone has a virus. The blood tests come back positive, so we can deduce that you definitely have that virus. Deduction is a great skill to use if you want to solve a problem.

Induction: This includes the critical thinking skills that involve drawing conclusions based on a generalisation. You don't have all the exact information at hand. However, 'you think critically and realise that you are aware of patterns, clues and a methodology that can help you induce the answer. For example, you come to the doctor exhibiting a fever, sneezing and coughing. The doctor doesn't do a test, but induces or concludes that you probably have influenza because your symptoms are characteristic of someone with the flu.

Abduction: This includes the critical thinking skills that involve coming to a conclusion that is the most likely or logically based on the small amount of knowledge that you have. You can't be sure of the answer, but you can think critically and make an educated guess. For example, you may see that a cat is on the roof. The most logical answer is that the cat got up there by climbing a nearby tree and jumping from it to the roof, but you can't be sure.

Critical Thinking in Everyday Life

When students learn critical thinking skills in school, they can put those skills to use in aspects of everyday life. When it comes to critical thinking the application of the skills extends far beyond use in the classroom. If we can help our students perfect their critical thinking skills in school, we can empower them to make qualified decisions in their everyday life, and develop their future endeavours. What then does critical thinking in everyday life mean? According to Sieck (2017), critical thinking is simply a deliberate thought process. Basically, it means that you are using reason and logic to come to a

conclusion about an issue or decision you are tangling with. And clear and sound reasoning is something that will help us in everyday life. Critical thinking helps us to deal with everyday problems as they come our way, and very often this thought process is even done subconsciously. It helps us think independently and trust our gut feeling. Everyone needs critical thinking because we all encounter opportunities in our daily lives to engage problems and decisions using strong critical thinking. Everyone needs to think ahead, to plan and to solve problems. Critical thinking is a valuable skill for all aspects of daily life. It benefits problem solving, creativity and teamwork. And it translates particularly well to the workplace, where it can distinguish you as a valuable employee and leader. For example, m the present day Nigeria society, where fake news has continue to present a serious challenge to the government and people of Nigeria, we either blame politicians, bloggers, websites or social media platforms and content producers that promote false contents to advance a political or ideological agenda to make money or allow false content to go viral. This trade of blames is very common in everyday life because most people do not have what it takes to sort out a real news source from a piece of clever advertising or fake news. Part of the problem may come from schools, cutting back on formal instruction of critical thinking skills and an assumption that today's "digital native" teens can automatically tell the difference without practice or instruction. So how can you practise telling fact from fiction? One way is to apply the dialogic questioning approach to chat with your family and friends about media sources. Find out how they stay informed, and why they choose those outlets. Ask each other routine questions for evaluating sources. In this way, you will be able to distinguish between information that is real from false or fake ones'.

Second, most people place too much confidence on some persons they hold in high esteem, and thereby allow the decisions of such persons to influence our lives, circle, through the way to act, dress, think or be made to believe or forbid certain things, regardless of our individual beliefs. The problem is that they forget that every situation can be defined in multiple ways, such that what is "right or good" to one person may be "wrong or bad" to another. Therefore, the onus lies on us to develop our own ability to redefine the way we see the world around us. Hence, find a time when your friends or group see the negative in a situation, and see if there is a positive way to view it instead or at least a way that makes it seem not quite so bad. Even though you may not be ready to speak up with your independent view, practicing thinking differently from such a friend or group may help to strengthen your mind.

Third, one of the core critical thinking skills you need everyday is the ability to examine the implications and consequences of a belief or action. In its deepest form, this ability can help form your own set of beliefs in everything or circumstances you may encounter daily in life. For example, imagine you are cruising down the highway when your phone alerts you to an incoming call or text message that places you in a dilemma on whether to look at the text or pick the call and risk getting an accident? The ability to examine your potential actions and their accompanying consequences will help you make the best choice for how to handle the situation. But yet, the more you are at looking at the implications of your actions, the faster you can make split second decisions. From the views of Sieck (2017), it implies that critical thinkers' should not take things at face value, so as not to make the Mistake of taking wrong decisions or giving out false information in the course of our daily life.

Literally everyone can benefit from critical thinking because the need for it is all around us. In his work, Facione cited in Sieck (2017), make a strong case that critical thinking skills are needed by everyone in all societies who value safety, justice, and a host of other positive values; considered as a form of thoughtful judgement or reflective decision making, in a very real sense, critical thinking is pervasive, there is hardly a time or a place where it would not seem to be of potential value. As long as people have purposes in mind and wish to judge how to accomplish them, as long as people wonder what is true and what is not, what to believe and what to reject, strong critical thinking is going to be necessary.

The Socratic Tradition and Active Learning

According to Furedy and Furedy (1986), a major contribution of the Socratic tradition to education is a disposition for disciplined inquiry, based on a readiness to question all assumptions and an ability to recognize when it is necessary to question. In this regard, the Socratic Method is quite meaningful in promoting critical thinking skills in students of all ages. The idea is to create an inclusive classroom environment where students feel comfortable debating while participating in dialogue with their teachers. When this is the case, all students are opportune to deliberate in materials presented in the class. By this very nature, the instructor takes a subordinate role than in a super-ordinate role (Maxwell, 2009). When the instructor employs this method of teaching, he begins by asking questions, in an effort to elicit responses from them; He then follows up on their responses with additional questions. In this kind of verbal interaction, the teacher is intentionally steering students' responses or thinking in a direction that ordinarily only the teacher may know about. However, the student is not, typically, encouraged to ask

divergent questions, as this may redirect the "line" along which the teacher is moving. Practically, the student is led to draw specific, predetermined conclusions in this strategy. Although questions asked can focus on a general aspect of the course material, the idea is to encourage creativity, brainstorming, and even focus on a specific problem. Thus, the questions can seek clarification, probe assumptions, probe reasons and evidence, or probe implications and consequences. What can be deduced from method of this nature is typically student-centered. An approach that challenges the learner to illuminate ideas, develop critical thinking skills and engage in analytic discussion. It is quite a dialectical method as it often time involves a discussion in which the defense of one point of view is questioned. One participant may lead another to contradict himself in some way, thus strengthening the inquirer's own point. The Socratic Method is characteristic hypothesis elimination, where more appropriate hypotheses are found by steadily identifying and eliminating those that lead to contradictions.

According to Cam (2006) Students who delight in contradiction or who constantly play the sceptic may bring a sense of fun to the proceedings, even though their input needs to be tempered by the recognition that inquiry is an attempt to make headway with the matters under discussion. It is in this sense that the Socratic method searches for general, commonly held truth that shapes opinion, and scrutinizes them to determine their consistency with other beliefs.

Reflective Thinking through Collaborative Effort

The questioning of students in a dialogue style is an open-minded inquiry and a collaborative activity that can be traced back to what has become known as the Socratic Method. In the allegory of the cave of Plato, just like the librated prisoners and others, the

participants both teacher and students are engaged in quality (appealing or otherwise) discussion. In such encounter the Participants study the text closely in advance, listen actively, share their ideas and questions in response to the ideas and questions of others. They also search for evidence in the text to support their ideas. Significantly, the discussion is not all about right answers, neither is it a debate. It is more of engaging in logical reasoning, while exchanging and examining ideas in a rigorous and thoughtful manner. In this context, questioning serves to illuminate ideas and positions. Thus, it is not a one-sided instrument but a medium for initiating interactive dialogue. It is also expected that On the part of the teacher, there is a reflective teaching which makes his efforts a collaborative one where reflective teaching promotes thoughtful consideration and dialogue about classroom events. Chester (2012) also subscribes that Socratic teaching method is a reflective education, in which thinking is understood as a process of inquiry. For Cam (2006), the backward and forward motions of agreement and disagreement is what actually gives an inquiry its rigor, as it moves from convergent to divergent thinking through the course of the dialogue.

Independent Learning in the Socratic Pedagogy

As previously mentioned, the Socratic pedagogy generally is s process of reflective education through dialogue and a way to construct knowledge. This process is not an individual one, but a collaborative effort in which the ability to think for oneself can be said to be one of its educational aims and practices. Socrates used a series of questions to guide his students to answers so that they would arrive at using their own powers of reason. He does not claim to have the knowledge, instead simply helping those seeking to learn to find it by asking questions. Essentially, this educational strategy encourages students'

discovery of truth by questions. This distinctive pedagogy encourages people to develop independent thinking by questioning claims about knowledge, to argue about ideas, and to engage in dialogue about important issues of life. As Pang (2008) states the original purpose of the Socratic dialogue was to develop the skills to identify and challenge underlying assumptions. This is imperative so that people could examine their belief structure in the context of their analysis of knowledge. As a result, the concept of critical thinking grounded in logic emerged from this type of inquiry.

However, for a deeper understanding about ideas and values, the student must be not only an active learner but an independent learner. As such, in a classroom setting students should independently and systematically question and examine issues and principles related to a particular content. This allows them to articulate their different points-of-view. Whereas, the group conversation could assist participants in constructing meaning through disciplined analysis, interpretation, listening, and participation, the independent participation of the individual learners is quite crucial. It is against this background that Megan (2012) argues that the process of getting students to question their own ideas and think about their knowledge in a more disciplined and rigorous way is quite important. A well-managed and structured Socratic pedagogy, where students are given the freedom to think for themselves and act as such, could bring about a lively, active classroom.

In this context, education is much more than force feeding information to students and measuring how well they regurgitate that information back to us on command. Importantly, education is more than teaching the art of complying with minimum requirements. However the underlying philosophy in Socratic Method as a strategy

inspires students to take a deep interest on their own enthusiastically willful education and thriving in life. This helps students become more attentive and thoughtful as a matter of their natural character. Human attentiveness is absolutely essential for human survival, creativity and happiness. The absence of human attentiveness is the absence of human living. The persistence of high quality attentiveness through fair weather and foul is the road we must travel to lead an examined life worth living. The Socrates dialogue in consonance to his allegory, within its influence on the structure of communication and participation, inspires people to attentively embrace and express their own original thinking and creative doing as they enthusiastically participate in the art of living an examined life.

Critical thinking and Education

Critical thinking is often regarded as a fundamental aim, and an overriding ideal of education. To this extent, it means that educational activities ought to be designed and conducted in such a way that the construction and evaluation of reasons, in line with relevant criteria, is paramount, throughout the curriculum. According to Scheffler, "Critical thinking is of the first importance in the conception and organisation of educational activities", (1989:1). That is to say that, the fostering of the abilities and dispositions of critical thinking in students, is the prime educational directive, of central importance to the design and implementation of curriculum and educational policy.

Education perhaps is the most basic need for human development. According to Meyer (1976), the aim of education is to nurture the individual, to help, to realise the potential that already exists inside him or her. There has always been a strand of educational thought that held that the strengthening of child's thinking should be the chief

business of the schools and not just an incidental outcome - if it happened at all (Lipman, 2003). Qualified education should show the way to students about what and how to learn. While students evaluate what they learn and their learning methods, they manifest their critical thinking abilities (Emir, 2009). As cotton (1991) indicates “If students are to function successfully in a highly technical Society’, then they must be equipped with lifelong learning and thinking skills necessary to acquire and process information in an ever changing world (p.15)”.

Hence, one of the aims of education should be for the development of students’ thinking skills as well as motor skills, which is a basic goal of contemporary approaches in education. According to Elder and Paul (2008), students are not passive but active while they are realizing critical thinking. One of the significant aims of education is to produce learners who are well informed, that is to say, learners should understand ideas that are important, useful, beautiful and powerful. Another is to create learners who have the appetite to think analytically and critically to use what they know to enhance their own lives and also to contribute to their society, culture and civilization. Hence, these two aims for education as a vehicle to promote critical thinking are based on certain assumptions.

a. Education should seek to prepare learners for self-direction and not pre-conceived roles. It is, therefore, essential that learners be prepared for thinking their way through the maze of challenges that life will present independently.

b. Brains are biological. Minds are created. Curriculum is thus a mind altering device. This raises the moral requirement to treat learners as an independent centre of consciousness with the fundamental ability to determine the contours of their own minds and lives.

c. Careful analysis, clear thinking and reasoned deliberation are fundamental to democracy and democratic life. On the basis of these considerations, the capacity for critical assessment and analysis emerges as fundamental for enjoying a good quality of life.

The true mission of education is commonly described as being the promotion of thinking skills to be more precise (Barnes, 2005; Noddings, 2008). This issue is particularly significant in higher education, considering that it is by means of a university education that students' get equipped to enter the labour market, acquiring and perfecting resources with which they can face future challenges (Barnes, 2005). This process occurs by using what they have learned along their university education years and from the knowledge they have acquired and that is demanded in their line of work (Halpern, 1998).

Despite the importance conveyed by the education system about developing critical thinking skills, effective efforts to put such skills into practice and to promote their training hasn't been noticeable so far, (Noddings, 2008). More complex thinking skills are not covered by conventional teaching and assessment formats, which are still too focused on data transmission, memorization of factual information and consequent evocation of knowledge in evaluation situations (Brady, 2008; Paul, 2005). Toa certain extent, this may be produced by some unawareness usually revealed by teachers about what critical thinking is m fact and how it can be integrated in their teaching and evaluating methods (Paul, 2005). Such a conventional approach, in which teaching and fearing process is omitted, should be corrected (Barnes, 2005), for it does not provide true opportunities for the students cognitive development. According to some educational thinkers, there should be an intentional effort to go beyond the curriculum and to implement changes in each

teacher's pedagogy method and in the education system itself, in order to fully grasp critical thinking skills (Pani, 2005). In dependency of the criticism made to traditional educational methods and their excessive emphasis in data transmission, another one rises upon which students are perceived as a Passive receptacle of the knowledge offered by teachers (Barnes, 2005; Brady, 2008).

By tradition, Teachers are conceived as experts who must transmit their knowledge to Students whereas students are rewarded for memorizing information merely for testing situations, and not for elaborating their own ideas and developing a reasoning that is their Own ideas and developing a reasoning that is both open minded and critical. As a consequence, Students are not very active learners: they resort to a more memory based approach, rather than a comprehensive one, to acquire curriculum contents. They employ little effort to elaborate ideas on their own and they don't develop the skills needed to autonomously solve their daily problems (Facione, 2010; Brady, 2008). Ideally, the education system should permit each student expansion in a number of curricular and cognitive areas, which is feasible by means of teaching the various thinking skills. These are susceptible to improvement, with the possibility of being learned. Internalised and independently applied by students in multiple circumstances, assisting them to think more effectively when dealing with distinct real life situations (Halpern, 1998). This is possible because this type of reasoning supports the development of analytical, critical and decision making skills, which are useful on a daily and transversal basis, and increase learning and problem solving quality (Brume de Bruin, et al., 2007). In this context, the teacher's role is to guide students, allowing them an active and regulated part in their way to developing critical thinking (Paul, 2005). Such a process encloses the theoretical, practical and

motivational components of critical thinking; the introduction to the implied concepts and understanding, which provide for the enrichment of one's knowledge base; the familiarity, perfecting expansion of a set of skills needed for reflexive thinking; the strengthening of the disposition to put knowledge and skills into use (Bailin, et al; 1999). This way, critical thinking must be valued by education systems, in order to make a propitious environment in the classroom that allows and Stimulates the adoption of a reflexive attitude towards the quality of one's thinking (Colucciello, 1999).

In summary, we can accept that critical thinking is not an innate and intuitive ability, Spontaneously sprouted (Saiz and Rivas, 2010). On the contrary, it emerges from the learning-teaching process, being gradually and deliberately acquired and assuming a previous and symbiotic mastery of a set of basic skills, such as reading comprehension, argument analysis and production, or still, search for evidence to stand for a particular point of view (Facione, 2010). Critical thinking relies on explicit, continued and persistent teaching (Ennis, 1993).

Siegel gives four reasons or importance for fostering critical thinking in students thus: first, striving to foster critical thinking in students is necessary if they are to be treated with respect as a person (1988:3). The moral requirement to treat students with respect as a person requires that we strive to enable them to think for themselves, competently and well, rather than to deny them the fundamental ability to determine for themselves, to the greatest extent possible, the contours of their own minds and lives. Acknowledging them as persons of equal moral worth requires that we treat students as independent centres of consciousness, with needs and interests not less important than our own, who are at least in principle capable of determining for themselves how best to live

and who to be. Consequently, treating students with respect requires fostering in them the abilities and dispositions of critical thinking. A second reason for regarding critical thinking as a fundamental educational ideal involves education's generally recognized task of preparing students for adulthood. Such preparation must be understood to involve student self-sufficiency and self-direction. In this, the place of critical thinking is manifest. A third reason for the fostering of critical thinking as a central aim of education is the role it plays in the rational traditions that have always been at the center of educational activities and efforts. A fourth reason involves the place of careful analysis, good thinking, and reasoned deliberation in democratic life. To the extent that we Value democracy, we must be committed to the fostering of the abilities and dispositions of critical thinking. Democracy can flourish in a nation if only the citizenry are able to reason well regarding political issues and matters of public policy among others, and this requires the abilities and dispositions constitutive of critical thinking.

Critical Thinking and Classroom Setting

Developing critical thinking in a classroom setting has to do with the techniques the teacher employed in providing students with the opportunity to understand and take charge of their learning situation. Using these skills, students tend to expand the perspectives from which they view the world and increase their ability to navigate the important decisions in learning and in life. According to Ferlazzo (2021), the primary focus of students is on what they are expected to do and how it will be measured. It seems that we are becoming successful at producing students who are able to jump through hoops and pass tests. Instead of producing children that are positive about teaching and learning and can think

critically and creatively! He proposed the following strategies for the development of student critical thinking skills.

Development of Self Esteem: One of the most significant factors that impacts student engagement and achievement in learning in the classroom is their self-esteem. In this context, self-esteem can be viewed to be the difference between how they perceive themselves as a learner (self-perception), and what they consider to be the ideal learner (ideal self). This ideal self may reflect the child that is associated or seen to be the smartest in the class. Your aim must be to raise students' self-esteem. To do this you have to demonstrate that effort, not ability, leads to success. Your language and interactions in the classroom, therefore, have to be aspirational - that if students persist with something, they will achieve.

Use of Evaluative Praise: Ensure that when you are praising a student, you are making explicit links to a student's critical thinking and/ or development. This will enable them to build their understanding of what factors are supporting them in their learning. For example, often when we give feedback to students, we may simply say, "well done" or "Good answer". However, are the students actually aware of what they did well or what was good about their answer? Make sure you make explicit what the student has done well and where that links to prior learning. How do you value students' critical thinking — do you praise their thinking and demonstrate how it helps them improve their learning?

Learning Conversation to Encourage Deeper Thinking: We often feel as teachers that we have to provide feedback to every student's response, but this can limit students' thinking. Encourage students in your class to engage in learning conversations (dialogue) with each other. Give as many opportunities as possible to students to build on the

responses of others. Facilitate chains of dialogue by inviting students to give feedback to each other. The teacher's role is, therefore, to facilitate this dialogue and select each individual student to give feedback to others. It may also mean that you do not always need to respond at all to a student's answer.

Teacher Modeling own Thinking: We cannot expect students to develop critical thinking skills if we aren't modelling those thinking skills for them. Share your creativity, imagination, and thinking skills with the students and you will nurture creative, imaginative critical thinkers. Model the language you want students to learn and think about. Share what you feel about the learning activities your students are participating in as well as the thinking you are engaging in. Your own thinking and learning will add to the discussions in the classroom and encourage students to share their own thinking. For Quagliarello, cited in Ferlazzo (2021), critical thinking blasts through the surface level of a topic. It reaches beyond the "who and what" and launches students on a learning journey that ultimately unlocks a deeper level of understanding. Teaching students how to think critically helps them turn information into knowledge and knowledge into wisdom. In the classroom, critical thinking teaches students how to ask and answer the questions needed to read the world. Whether it's a story, news article, advertisement, video or another form of media, students can use the following critical thinking strategies to dig beyond the surface and uncover a wealth of knowledge.

A Layered Learning Approach: Begin by having students read a story, article, or analyse a piece of media. Then have them excavate and explore its various layers of meaning. First, ask students to think about the literal meaning of what they just read. For example, if students read an article about the desegregation of public schools during the 1950s, they

should be able to answer questions such as: who was involved? What happened? Where did it happen? Which details are important? This is the first layer of critical thinking: reading comprehension. Do students understand the passage at its most basic level?

Ask the Tough Questions: The next layer delves deeper and starts to uncover the author's purpose and craft. Teach students to ask the tough questions: what information is included? What or who is left out? How does word choice influence the reader? What perspective is represented? What values or people are marginalized? These questions force students to critically analyse the choice behind the final product. In today's age of fast paced, easily accessible information, it is essential to teach students how to critically examine the information they consume. The goal is to equip students with the mindset to ask these questions on their own.

Socratic Seminars: In this student-led discussion strategy, students pose thought provoking questions to each other about a topic. They listen closely to each other's comments and think critically about different perspectives. Students are responsible for facilitating their group discussion around the ideas in the text; they shouldn't use the discussion to assert their opinions or prove an argument. Through this type of discussion, students practice how to listen to one another, make meaning, and find common ground while participating in a conversation or discussion. The bottom line is that students help one another understand the ideas, issues, and values reflected in a text through a group discussion format.

Classroom Debates: Aside from sparking a lively conversation, classroom debates naturally embed critical thinking skills by asking students to formulate and support their own opinions and consider and respond to opposing viewpoints. By doing so, students

discuss and organise their points of view for one side of an argument they are able to discover new information and put knowledge into action. The bottom line is that classroom debate promotes problem solving and innovative thinking, and helps students to build links between words and ideas that make concepts more meaningful.

Developing & Fostering Critical Thinking in Students: — The Role of the Teacher

The foundation of critical thinking is philosophically linked to the works of Plato, Aristotle and Socrates (Bailey and Mentz, 2015). Socrates, through his questioning dialogue, initiated critical thinking as a cognitive skill for learning. Depending on the persuasion of the author, Critical thinking has multiple definitions. Paul and Elder (2007), state that critical thinking is the intellectually disciplined process of actively and skillfully conceptualising, applying, analysing, synthesising and/or evaluating information gathered from observation, experience, reflection, reasoning, or communication, as a guide to belief and action". On the other hand, Slameto (2014), sees critical thinking as an activity that is cognitive in nature and based on reasoning. He adds that critical thinking is achieved when students go through a knowledge construction process that involves observing, analysis, making judgments and decision making.

Researchers such as Shannon and Bennet (2012) described critical thinking in phases. They observe that students have to apply, analyse, synthesise and evaluate in order to be Critical. Similar to Dewey's (1933), steps for reflective practice. Shannon and Bennet's (2012) critical steps are geared to assisting students achieve academic depth that goes beyond the described knowledge to the construction and interpretation of experiences. Stroupe (2006) also provides the steps for the development of students' cognitive skills for critical thinking namely, interpretation, analysis, evaluation, inference, explanation, and

self-regulation. He comments that these cognitive skills provide evidence of students' engagement with higher order thinking.

From the above definitions, it becomes clear that critical thinking is a process that assists students to engage intellectually and respond to knowledge by making judgemens that "require the application of assumptions, knowledge, competence and the ability to challenge one's own thinking" (Behar-Horenstem and Niu, 2011). In this context, critical thinking refers to the students' attitudinal disposition to apply logic in problem-solving situations using a variety of strategies.

Strategies for Developing Critical Thinking in Students and Pedagogical Approach to Developing Critical Thinking

Current research documents two broad strategies for developing critical thinking in students. First, implicit strategies are embedded in the teaching and learning activities in the curriculum without being directly instructed. Lecture delivery entails a strategy that models critical thinking implicitly. Second, explicit strategies are direct in nature and the students are made aware that their lecturers are using them to develop their critical thinking dispositions. In this regard, questioning and observation are explicit *strategies* for developing critical thinking in the students. Both explicit and implicit strategies are important as Snyder and Snyder, opined that, "Critical thinking is a product of education, training and practice" (2008:91). Each strategy is discussed in depth below:

Implicit Strategies for Developing Critical Thinking in Students: Implicit strategies advocate for meta-components of the curriculum as a conduit for developing critical thinking. Specifically, Snyder and Snyder (2008:91), state that critical thinking results from focused attention on: "the application of content, the process of learning and method of assessment". Behar-Horenstein and Niu (2011), also point out that meta-components such as performance, assessment and knowledge acquisition process are important for training students in critical thinking. From the review, the knowledge acquisition processes such as lecture delivery are fundamental to increasing students' critical awareness. Lecture delivery components such as the sequencing of the lesson, the assessment and the method of teaching are part of implicit strategies that foster critical thinking (Slameto, 2014).

Lecture Sequencing as a Strategy for Developing Critical Thinking: Lecture sequencing includes anticipation (introduction) knowledge building (discussion) and consolidation (conclusion) Snyder and Snyder (2008). In the anticipation phases, students'

prior knowledge is activated and misconceptions about a topic are dispelled. Furthermore, in the anticipatory phase, students are provided with the context in which to integrate the new knowledge into their own experiences. In the knowledge building stage of the lesson, the lecturer facilitates a cooperative and collaborative class discussion on the topic. As individuals and groups, students discuss their expectations of what is being learnt against the reality of what they actually know. According to Snyder and Snyder (2011), the knowledge building phase of the lecture is important in assisting the student to make connections, to reflect and to engage with the lecture objectives at an idiosyncratic level. The conclusion constitutes the consolidation phase of the lecture. In this phase, the students reflect on the lecture by summarising, interpreting, questioning and testing their new knowledge. This cognitive engagement in the last phase of lecture delivery is in line with Dewey's (1933) reflective practice process.

Learning Activities as a Strategy for Developing Critical Thinking: Slameto (2014), in another study, proposes three activities which, when implicitly integrated into the lecture delivery, will develop the students critical thinking. The first activity involves placing Students in small groups to facilitate knowledge construction. Slameto makes a case for the Social construction of knowledge as a vehicle for critical thinking. The second activity emphasises the use of a relevant context to deliver a lesson. If a relevant context is used, students are able to make a comparison of what they know in terms of the lecture content and the knowledge gaps that they need to bridge in order to achieve the learning objectives. In the last activity, an assessment method is used that requires the students to engage with higher cognitive levels of knowledge.

Assessment as a Strategy for Fostering Critical Thinking: Msila (2014:38) emphasises assessment as a strategy for developing students' critical thinking. He stated that assessment of students is more than an "Intellectual stimulating practice" as it can also be a strategy for critical thinking. According to Manjula and Munichander (2015), this suggests that critical inking is activated when students understand the topic they study. The participants in Msila's (2014) study guided their students by providing detailed feedback on assessments. Through this strategy, according to Msila (2014), participants ceased looking at examinations as evidence of the knowledge they possessed, rather than regarding it as an opportunity to apply and interpret new knowledge in their context. On the other hand, Maclellan and Soden (2004), indicated that lecturers need to focus on the assessment criteria as evidence that critical thinking is taking place. Students who engage with course assessment criteria that require them to analyse, evaluate ideas, engage with extensive critical coverage, cogent and sustained justification of stand point have achieved a critical thinking disposition.

Besides assessment, Msila (2014) found in his study that teaching methods train students in critical thinking. He noted that teaching methods that are learner-centred and require multiple skills, nurture critical thinking. In line with Msila's (2014) findings, Snyder and Snyder (2008:91) noted that critical thinking develops from instructional methods that allow students to "analyse, synthesise and evaluate to solve problems and make decisions"'. Teaching methods such as projects application, assignments, and group-work, foster collaboration and increase the practice of critical thinking in learners (Msila, 2014). From a belief that critical thinking cannot be fully developed from single and isolated activities in the Classroom, researchers such as Slameto (2014), and Msila (2014),

stated that a variety of opportunities embedded in the curriculum must be integrated to support students' critical thinking. However, Bailey and Mentz (2015), highlighted the need for the explicit use of certain strategies to foster critical thinking in students.

Explicit Strategies for Developing Critical Thinking in Students: Walley and Ment, (2015:143) noted that fostering critical thinking "does not occur naturally and should therefore be practised explicitly". Ganga and Maphalala (2016) noted that problem solving elicited from questioning is important for nurturing critical thinking. In support, Stroups (2006:43). stated that critical thinking, "the process through which necessary cognitive skills and behaviours are used to decide what to do and believe, is a skill that can be taught" explicitly. The use of questioning as an explicit strategy for developing critical thinking in students is based on the work of Socrates.

Socrates Questioning Technique: Based on the work of Socrates, questioning is seen by researchers as explicitly guiding students to critical thinking (Paul and Elder, 2007). Socratic questioning assists students to break down different parts of the problem into smaller parts that eventually provide them with a holistic understanding of the topic under discussion (Paul and Elder, 2007). By using predetermined questions, lecturers in Socratic dialogue explicitly probe their students' thinking to achieve a desired learning outcome (Bailey and Mentz, 2015). However, Paul and Elder (2005:36), cautioned that "assume no thought is understood until one understands the questions that give rise to it" What this means is that the questions in the Socratic dialogue do not develop critical thinking if the students are unable to decipher the reasons behind their use in the classroom. They suggest that the level of questioning as well as asking thought provoking questions promote critical thinking.

Bloom's Questioning Technique: Bloom's Taxonomy Order thinking skills into hierarchical Classes ranging from low to high (Stanny, 2016). Based on Bloom's Taxonomy, convergent and divergent questions are explicitly used in student education to foster critical thinking learning. According to Stroupe (2006), convergent questions use the first three classes of Bloom's Taxonomy, namely, knowledge, comprehension and application. Using questions with measurable verbs such as describe, recognize, rewrite, indicate, identify, demonstrate, employ and practice, the students are supported through these lower order questions to activate their critical thinking (Stanny, 2006). Convergent questions emphasize memorization, recall and recognition. When engaging with convergent questions, student transfer information in a predictive manner (McComas and Abraham, 2014), Snyder and Snyder (2008:92), maintaining that "critical thinking is a mental habit that requires students to think about their thinking...in process". This suggests that although the first three classifications of thinking in Bloom's Taxonomy are considered lower order, they are usually the initial steps of critical thinking and it is therefore important to develop them. Furthermore, snyder and Snyder (2008) stated that some content in students' education does not require memorization such as vocabulary development in language education.

On the other hand, divergent questions which include analysis, synthesis and evaluation are considered to involve higher order questions. According to Stroupe (2006), the last developmental sequence of questions differentiates the students that have deeper and superficial subject knowledge and a critical thinking disposition. The higher level questions require the lecturer to scaffold the students to reasoning and critical thinking. Divergent questions require students to "demonstrate understanding and ability to apply

the information (students describe, compare, contrast, rephrase, summarise, explain, translate, interpret or provide an example)" (McComas and Abraham, 2004:3). Through divergent questioning, students are able to bridge the gap between their prior knowledge and their newly constructed reality (Vygotsky, 1978). Such knowledge construction only happens when lecturers allow students to "review test questions and explain correct answers by modelling the critical thinking process" (Snyder and Snyder, 2008:92).

In summary, both the implicit and explicit strategies are important in guiding students to develop skills in critical thinking, Ennis posited that critical thinking skills are better cultivated through instructional activities of providing comprehensive questions for students to reflect, discuss, debate, or persuade (Ennis, 1996; Freire, 2000, Paul, 1990). Teachers are the key to a positive learning environment and a good teacher-Students interaction cast promote students' academic achievement (Wubbels and Levy, 1993). Whether a teacher's critical thinking instruction is successful depends on how well it motivates the students to engage in critical discussion (Ennis, 1996). Effective teachers prepare contextual topics to facilitate critical discussion among students. Through the process of communicating, understanding and changing overtime, students gradually develop the ability to think critically. Critically thinking teaching strategy is the key approach for fostering students' critical thinking ability and intention (Eggen and Kauchak, 1996). An appropriate strategy for critical thinking instruction will cultivate a learning environment in which students are willing to express themselves.

For developing students' critical thinking ability, Ennis (1996), emphasised that teachers post comprehensive questions for students to discuss and make assertions. By judging whether the inference is vague or contradicted, students re-examine the outcome

and reach a unanimous decision. A synthesis of prior research concluded that the main activities for teachers teaching critical thinking instruction were the provision of open, extended questions with reflective and creating opportunities for group discussion and cooperative learning (Ennis, 1996; Freire, 2000; Paul, 1990). As a part of the process of critical thinking, argumentation is intended to justify beliefs and values in order to influence others. One way to achieve shared understanding is to have students engage in a process of logical reasoning that alters their perceptions or beliefs about social reality (Moon, 2008).

Pedagogical Approach to Developing Critical Thinking

Ennis (1989), cited in Karig Saeger (2014), provided a classification of instructional approaches. Ennis's (1989), critical thinking typology of four types of courses offer a classification for instructional interventions related to instructional approaches. The four approaches are general, infusion, immersion and mixed. According to Ennis, the general approach "attempts to teach critical thinking abilities and dispositions separately from the presentation of the content of existing subject-matter offerings, with the purpose of teaching critical thinking" (p.4). The primary purpose of the general approach "is to teach students how to think critically in a non-school context (p.4) Ennis (1989) defined the infusion approach as the:

> Infusion of critical thinking instruction in subject-matter instruction as deep, thoughtful, well understood subject-matter instruction in which Students are encouraged to think critically in the subject, and in which general principles on critical thinking dispositions and abilities are made explicit (p.5).

Similar to the infusion approach is the immersion approach. The immersion approach follows “thought provoking kind of subject matter instruction in which students do get deeply immersed in the subject” (Ennis, 1989:5). The difference between immersion and infusion is that under the immersion approach the “critical thinking principles are not made explicit” (Ennis, 1989:5) in the subject matter content. Abrami, et al., (2008), conducted a study that analysed instructional approaches using Ennis’s critical thinking typology. They concluded:” Whether critical thinking is taught separately of content or embedded within content seems like a less important distinction empirically” (p.1121).The Abrami, et al., findings indicated a larger instructional course design. “Developing critical thinking skills separately and then applying them to course content explicitly works best; immersing students in thought provoking subject matter instruction without explicit use of critical thinking principles was least effective” (p.1121).

The mixed approach “consists of a combination of the general approach with either the infusion or immersion approaches” (Ennis, 1989:5). The mixed approach includes both subject specific and general critical thinking instruction. Under this approach, critical thinking principles are made explicit and use both subject matter content and other content if instruction (Ennis, 1989).

Ennis (1989:5), cautioned about the ambiguity surrounding the definition of the word “subject”. Sometimes the word ‘subject’ is used to refer to some subject taught in school. Sometimes it refers to the topic under consideration. Ennis stated it is a mistake, “to infer from the fact that critical thinking is always about some subject (topic) that critical thinking teaching can take place only in school subjects” (p.5). To avoid the vagueness of the word “subject” Ennis (1989) replaced “Subject” with “domain” based on

the common use of “domain” among cognitive scientists in discussion of subject specificity. Ennis (1989), describe the three principles that characterise subject specificity as:

i. **Background Knowledge:** Background knowledge is essential for thinking in a given domain.

ii. **Transfer:** (a) Simple transfer of critical thinking dispositions and abilities from one domain to another domain is unlikely. (b) However, transfer becomes likely if, and only if, (1) There is sufficient practice in a variety of domains and (2) there is instruction that focuses on transfer.

iii. **General Instruction**: It is unlikely that any general critical thinking instruction will be effective (p.5).

Ennis (1989) further defined three versions of subject specificity: “Epistemological subject specificity notes that there are significant inter-field differences in what constitutes a good reason” (p.9). The foundation of this version is that critical thinking varies from field to field. The epistemological subject specificity concludes “that only the immersion approach to critical thinking instruction would be appropriate" (Ennis, 1989:7). Ennis (1989) described the conceptual subject specificity version as having, “no basis and is too vague” (p.9) and general instruction in critical thinking is inconceivable" (p 8) Conceptual subject specificity “does not even make sense to speak of critical thinking or critical thinking instruction outside of subject-matter area, and the idea of general critical thinking ability is meaningless” (Ennis. 1989:8). The domain Specificity version “sees the importance of deliberate teaching or transfer combined with frequent application of principles in many different areas” (Ennis, 1989:9). With the domain specificity version,

(Ennis (1989), cautioned “that a critical thinking aspect demonstrated in one situation will not necessarily be applied in another” (p-9)

In relation to pedagogy, Abrami, et al., (2008), stated that: “the impacts of critical thinking were smallest when the intention to improve students critical thinking was only listed among the course objectives and there were no efforts at professional development or elaboration of course design and implementations” (p.1121). Winter, McClelland and Stewart (1981), suggested that greater growth in critical thinking occurs when curriculum was focused on an integrative theme encompassing different disciplines. The greatest impact on critical thinking development in students’ occurred when instructors received advanced training in preparation for teaching critical thinking skills (Abrami, et al., 2008). To maximised the development of critical thinking skills, “requires both the willingness to incorporate critical thinking instructions and explicit strategies and the skills to do it effectively” (Abram, et al., 2008:1121).

Elder and Paul’s stage theory supported explicitly teaching critical thinking in the Classroom and stated that “critical thinking is not something additional to content, but rather integral to it” (1994:.34), The stage theory defined critical thinking development of individuals as they progress as thinkers and include the following six stages, the unreflective thinker, the challenged thinker, the beginning thinker, the practising thinker, the advanced pinker and the master thinker (Paul and Elder, 1997:34. They made the following assumptions regarding critical thinking and instruction.

a. There are predictable stages through which every person who develops as critical thinker passes b. Passage from one stage to the next is depended upon a necessary level of commitment on the part of an individual to develop as a critical thinker, is not automatic,

and is unlikely to take place subconsciously. c. Success in instruction is deeply connected to the intellectual quality of student learning. d. We cannot expect students to develop as critical thinkers unless we bring critical thinking into instruction at the foundational level (p.34).

Elder and Paul (1994) described those who teach a subject well, so that students learn to think within the logic of the subject have, therefore, two needs; to become clear about is that critical is understood as the means by which students' process content (p.34). Therefore, our most fundamental responsibility as instructors is to challenge student thinking and to introduce them to the workings of their minds (Paul and Elder, 1997) stated:

> It is crucial that we as teachers and educators discover our own thinking; the thinking we do in the classroom and outside the classroom, the thinking that get us into trouble and the thinking that enables us to grow. As educators, we must treat thinking quality thinking as our highest priority (p.35).

Minnesota State University identified critical thinking as a general education requirement; yet, it remains difficult to determine the bed method for teaching critical thinking skills and assessing gains in critical thinking. Strong debates exist over what instructional methods produce the best critical thinkers. Each approach is supported by proponents such as: Sternburg and Bhana (1986), of the general approach (separate, stand-alone critical thinking course); Glaser (1984), and Resnick (1987), of the infusion approach (explicitly states critical thinking outcomes in a discipline specific course), McPeek (1981), of the immersion approach (critical thinking outcomes are not made exploit, but imbedded in the instruction); and Ennis (1989) and Perkins and Salomon (1989), of the mixed approach. Ennis (1989) defined the mixed approach as a combination

of the general approach with either the infusion or immersion approach. The underlying argument is centred on whether critical thinking is a generic skill taught as the explicit content of a specific course, a domain specific skill taught as one explicit skill within the context of discipline focused courses, or a domain specific skill immersed within the context of disciplinary content. Halpern (2001), stated; "Despite all the difficulties in assessing gains in critical thinking, there is a diverse body of evidence showing that thinking can be improved with instruction that is specifically designed for that purpose" (p.277).

Furthermore, Halpern (2001), explained: "critical thinking skills do not necessarily develop as a by-product of discipline-specific course work" (p.278), suggesting an instructional approach that explicitly states critical thinking outcomes in discipline specific courses (infusion approach) or in a separate, stand-alone critical thinking course (general approach) can improve critical thinking. Tsui (1999), investigated how different types of courses and instructional techniques affect critical thinking and stated; "simply studying courses or disciplinary major without considering the effects of instruction may produce some misleading conclusion" (p.195). There is substantial research on the development of critical thinking skills in relation to specific pedagogical methods, but the research yielded mixed results.

Smith (1977), found student participation, encouragements, and peer-to-peer interaction techniques as being positively and significantly related to critical thinking. Bailey (1979), conducted a study that compared courses taught in a more traditional format to courses taught that emphasised critical thinking and problem-solving instructional strategies. Bailey found greater gains of critical thinking scores for students in the courses

that emphasised critical thinking and problem-solving instructional approaches. Gibson (1985) found greater gain for students sing instructional approaches of searching for meaning through reading, writing and claw participation. Eason (1986) found greater gains for students using out of class assignments designed to increase critical thinking. Tsui (1999) found writing assignments, with instructor feedback, independent research projects, group projects and essay exams seem to enhance critical thinking skills.

In contrast, some studies found no significant effects on the development of critical thinking skills in relation to specific pedagogical methods. For example Norton (1985) conducted a study that compared the development of critical thinking ability of students using an independent laboratory investigation approach and found no significant effect on the development of critical thinking skills. West (1994) conducted a study comparing the development of critical thinking skills in political science students. Both groups were exposed to traditional lecture, but one group received implicit (Immersion approach) critical thinking instruction and the other received explicit (infusion approach) critical thinking instruction. West (1994) found no significant gains of critical thinking skills for either of the groups.

In addition to mixed results regarding critical thinking and the effect of instructional approaches, it is worthy to note studies that found significant effects on the development of critical thinking pertaining to educational levels, programs and courses. Wood (1990) conducted a study that measured the gains in critical thinking skills beyond the first year of college. Using the Watson Glaser critical Thinking Appraisal and the Cornell Critical Thinking Test, Mines et al., found that seniors had a significantly higher critical thinking score on both testing instruments. Defining and developing critical

thinking skills in higher education continues to be a debatable topic, but would not be complete if measuring the development of critical thinking skills were not investigated.

Critical Thinking in Nigeria Education and Learning Environment- the State and Common Issues

There is a saying that teacher education is the bedrock of any educational system, it is the primary determinant of quality education (Isyaku, 2002). One can almost say, show me the quality of your training and I will tell you the quality of your educational system. Ijaiya (1996) found from a study on skill training of teachers in education that prospective teachers peed to develop skills on lesson delivery and lesson evaluation (through appropriate questioning). Likewise, in a study on factors influencing the management of teaching practice by Alabi (2000), it was found that inadequate knowledge base by teacher educators had a negative impact on the development of effective teaching skills by student-teachers. Among important methods of development and subsequent application of teaching skills-critical thinking inclusive, are adequate exposures to the different disciplines of education.... (Ijaiya, 1996; Alabi, 2000b). In the same vein, Alabi (2005) posited that staff development programs are vital to staff performance within the school system. The development programs enhance development of appropriate teaching skills in school personnel towards school effectiveness. On the improvement of practical components of teacher education curriculum, lesson analysis technique was advocated (Ijaiya, 2008). A sad commentary on formal education however, higher education included, is that students have been reduced or have reduced themselves to more passive recipients of information. Education has become certificate oriented and reduced to the number of credits.

Gone are the days when students put up strong arguments in class or question their teacher's judgments or solutions to problems. Students now simply want to copy ill-digested notes. At the tertiary level, lectures have become increasingly one sided and teacher-centred. There is limited communication between the lecturer and students and among students in large classes. Opportunity for questioning and classroom discussion is severely hampered.

As Nigeria struggles to improve her access to education, quality seems to have taken flight under the yoke of over population and under funding of the sector. The fallout is commercialization of education for internally generated revenue by colleges of education and universities (jaiya, 2008; Mayanja, et al., 2007). This has led to the lowering of standards, while what many teachers produced in recent times are severely limited in intellectual skills especially critical thinking skills. This has produced a ripple effect throughout the educational system and in other sectors of development, contributing to a perpetual state of under development.

For instance, in Nigeria, there have been serious complaints about the quality of teachers being produced especially their poverty of knowledge and skills and increasing the duration of their course by one more year was suggested as a solution. The duration however is not the problem (Ijaiya, 2008). What are lacking in the curriculum are critical thinking skills. Teachers need to prepare a good scheme of work and lesson notes, select appropriate content, methodology and instructional materials, organise the class, set thought provoking questions, respond to questions, teach critical thinking skills etc. Hence, other factors include: (a) Emphasis on knowledge and recall, at the expense of reasoning. (b) Excessive use of objective questions at the lower levels. (c) Emphasis is even shifting

to computer-based testing at the tertiary level which encourages factual questions. (d) Our crowded lecture rooms give little or no time for useful interaction and questioning. (e) Lecturers work-overload and role conflict due to shortage of personnel. (f) Lack of emphasis on critical thinking in the various course contents. (g) Poor Knowledge of critical thinking by lecturers. (h) Poor training of students from the lower levels of education in critical thinking skills. (i) Our emphasis on certificates rather than on skills acquired.

Additionally, schools in Nigeria now pay little or no attention to co-curricular activities that promote critical thinking among the student population such as quiz and essay competitions, debates, public lectures and seminars by students etc. Students on their part spend more of their spare time listening to music from their handsets, even during lectures, instead of engaging themselves in productive activities. If the present students lack critical thinking skills, what would they teach their future students? The world today is facing so many paradoxes. For instance, on the one hand is a world witnessing knowledge explosion in science and technology, while on the other hand are schools generally falling in standard. Another example is a world relishing information communication technology (ICT) products and yet getting poorer economically and understanding each other less with peace getting more elusive. The world is in need of more critical thinkers in all spheres of life. Schools also need to brace up for teaching critical thinking to enhance the study of science and technology. The global knowledge explosion in virtually all fields could not have been possible without widespread critical thinking skills. Critical thinking is also necessary for the protection of human rights, professional conduct, good governance, social injustice and research ethics (Nassor and Vitikainen, 2009). At school level, students now submit sub-standard projects and seminar

papers that give supervisors a hard time. Many do not attempt to participate in seminar discussions or make meaningful contributions even when prompted. Some find it difficult to interpret simple questions. This is evidence of poor critical thinking skills, and it is a common problem in Nigeria's learning environment.

The crux of the matter however, is whether critical thinking is consciously or subconsciously taught and applied in our higher institutions, particularly in students' education. The teaching of critical thinking skills will promote quality in students' education, ft will enable students to ask good questions and reason logically in all subjects. Raising fresh questions will help to advance knowledge in any field. Student's projects and seminars presentations will be lively, illuminating and more scholarly Students' confidence is likely to increase, their answer would be richer and that can improve their academic performance, thereby curbing the menace of examination malpractice. Class participation will also improve. It can also promote teacher effectiveness and efficiency as well as reduce wastage in the educational system. When students become good critical thinkers, unemployment can reduce with benefits to the individuals and the nation. The incidence of electoral violence, rigging and other malpractices can give way to more credible elections and better governance as politicians and their party men make more reasonable decisions. It can also promote self-development and improve quality of life.

Gap in the Literature Reviewed

There are two aspects to critical thinking: one focusing on the disposition of the person engaged in critical and reflective thinking, and the other concerning their abilities. Some barriers on the integration of critical thinking in the students have been identified as

gaps in this work and they focus on dispositions. At a personal level, barriers to critical thinking can arise through:

i. lack of information
ii. lack of training
iii. Preconceptions
iv. time constraints
v. fear of being wrong (feeling out of your 'comfort zone')
vi. poor communication skills or apathy
vii. self-centred or societal/cultural-centred thinking (conformism, dogma and peer-pressure)
viii. an over-reliance on feelings or emotions

First, according to Broadbear (2003), most teachers are often not trained in critical thinking methodology. Elementary and secondary teachers know the content and receive training in the methods of instruction, but little if any of their training is devoted specifically to how to teach critical thinking skills. Postsecondary instructors pursue additional content-based instruction during graduate school, but often have no formal methodological training, much less skill-based instruction.

Second, Reluctance to critique the 'norm' or experts in a field and consider alternative views because of fear of being wrong). Some students feel anxious about questioning the work of experts. Critical thinking does not mean that you are challenging someone's work or telling them that they are wrong, but encourages a deeper understanding, a consideration of alternative views, and engagement in thought, discourse or research that informs your independent judgement.

Third, few instructional materials provide critical thinking resources (Scriven and Paul, 2007). Some textbooks provide chapter-based critical thinking discussion questions, but instructional materials often lack additional critical thinking resources.

Fourth, both teachers and students have preconceptions about the content that blocks their ability to think critically about the material. Preconceptions such as personal bias, partiality prohibit critical thinking because they remove analytical skills such as being fair, open-minded, and inquisitive about a topic (Kang and Howren, 2004).

Finally, time constraints are another impediment to the development of critical thinking skills in the students. Instructors often have a great deal of content to cover within a short time period. When the focus is on content rather than student learning, shortcuts such as lectures and objective tests become the norm. Lecturing is faster and easier than integrating project-based learning opportunities. Objective tests are faster to take (and grade) than subjective assessments. However, according to Broadbear (2003), research indicates that lecturing is not the best method of instruction, and objective tests are not the best method of assessment.

Summary of Reviewed Literature

Critical thinking is a 21st century skill that has double function; it contributes to personal progress and social development. In line with the widespread attention critical thinking skills have gained, university attendance is believed to improve learners' critical thinking. However, Amrous and Nejmaoui were of the opinion that the level of students' critical thinking is in short supply. There is a considerable gap between students' level of critical thinking skills and the expected outcome of a graduate student. According to Chouari, there is a wide disparity between what students learn at the university and its

impact on their daily lives. It is irrelevant if students cannot relate what they have learned to real-life issues. Several constraints come together to obstruct the implementation of critical thinking in education.

However, several scholars maintained that lack of practice negatively influences the cultivation of learner thinking. For example, Aliakbari and Sadeghdaghighi confirmed that lack of practice is a factor affecting the development of critical thinking and argument skills. In this study, the current concept of critical thinking shared by modern day philosophers such as Paul, is that critical thinking is based on two assumptions: The first is that the quality of our thinking affects the quality of our lives, and the second state that everyone can learn how to continually improve the quality of their thinking through the process of teaching and learning. In other words, according to Ennis, critical thinking relies on explicit, continued and persistent teaching. Paul posited that it is human nature to think because thinking pervades every aspect and dimension of human mind and life. However, it is not natural for humans to think well because human nature is heavily influenced by illusion, prejudice, ignorance, self deception and mythology. Hence, there is the need to intervene in thinking, to analyse, assess it, and also improve it, in other to achieve ‘‘Perfection of thought’’, which portray the ideal critical thinker, in consensus with the American Philosophical Association Portraits, which presented the ideal critical thinker as someone who is inquisitive in nature, open-minded, flexible, fair-minded, has a desire to be well informed, willingness to understand diverse view-points and is willing to both suspend judgement and to consider other perspectives.

Therefore, the aim of education is to nurture the individual, to help to realise his/her innate potentials. While students evaluate the content and methods of their learning,

they manifest their critical thinking abilities. This review emphasises that teaching students to think critically must include allowing them to come to their own conclusions. And for critical pedagogy, self-emancipation is contingent upon social emancipation. Critical thinking involves a disposition to think critically, having the necessary propositional knowledge about a phenomenon and having the thinking skills (i.e. procedural knowledge) to evaluate that knowledge. As part of the strategies for developing students' critical thinking 'kills, the literature reviewed documents two strategies namely: implicit and explicit Strategies. Implicit strategies are embedded in the teaching and learning activities in the Curriculum without being directly instructed. Lecture delivery is a strategy that models Critical thinking implicitly.

Secondly, explicit strategies are direct in nature, and this involves questioning and observation. The implicit strategies leverage on learning content, methods of learning and performance assessment as conduits for developing critical thinking. According to Maclellan & Soden, students who are engaged with course assessments criteria that require them to analyse, evaluate ideas, engage with extensive critical coverage, cogent and sustained justification of stand point have achieved a critical thinking disposition. Snyder & Snydey identify group-work, projects and assignments as instructional methods that allow students to "analyse, synthesise and evaluate to solve problems and make decisions", as practices that foster critical thinking in learners. Stanny, identifies divergent and convergent questions as explicit strategies that foster critical thinking in learners. Convergent questions includes measurable verbs such as: describe, recognize, rewrite, indicate, identify, demonstrate, employ, practice and apply, while divergent questions requires students to demonstrate understanding and ability, such as compare, contrast,

rephrase, summarise, explain, interpret, translate or provide, are examples. Vygotsky, posited that divergent questions, enables students' to bridge the gap between prior knowledge and their newly constructed reality. Wubbels and Levy opined that teachers are the key to a positive learning environment, and a good teacher-students interaction can activate students' academic performances.

Pedagogically, Ennis provided a classification of four instructional approaches to the development of critical thinking, namely: general, infusion, immersion and mixed approaches. The general approach teaches critical thinking abilities and dispositions Separately from the subject-matter content; infusion approach teaches critical thinking in the Subject-matter content; the immersion approach develop critical thinking separately and then apply them to the subject matter explicitly; while the mixed approach is a combination of the general approach with either the infusion or immersion approaches, through the application of critical thinking principles to both subject-matter content and in other content, in instruction. However, findings from Abrami, et al., indicated that "developing critical thinking separately and then applying them to course content explicitly works best". They also state that "the greatest impact on critical thinking development in students occurred, when instructors received advanced training in preparation for teaching critical thinking skills". Elder & Paul's stage theory favoured the explicit teaching of critical thinking in the classroom, as an integral part of the subject content and not additional to content. They posited that success in instruction is deeply connected to the intellectual quality of students' learning. This proves we cannot expect students to develop as critical thinkers unless we bring critical thinking into instruction at the foundational level.

CHAPTER THREE

METHODOLOGY

This study is one in the field of educational philosophy under the qualitative research methodology. The study therefore applied the relevant tools and techniques that will ensure academic rigor to deepen our understanding of the implicit role of critical thinking within the curriculum and its implications for the student learning, equity, pedagogy and educational policy. In this study, the attempt is on analysis of the epistemic imports of Socratic Method/Tradition for education and the educated person and implication to Nigeria's basic education. The study design is intended to be fluid and flexible, emerging from theories, models and concepts. Specifically, this research is suited for understanding and interpretation of education as a process, the expression of lived experience and most especially recognition of critical thinking in both Education and life. The knowledge to be gained is however an understanding of the nature and essence of critical, creative and reflective thinking in relation to community-living, using Socratic Method as a metaphorical guide.

The distinct feature of the philosophical approach is its insistence on logical/sound reasoning in all facets of its analysis (Kneller, 1966). In simple terms, philosophical tools of analysis and research methodologies are sense-making methods. The job of a philosopher is to make sense of the real and complex world in such a manner that his audience is astonished at his observation skills and not his manipulation of reality as is common in most empirical methods of research. The philosopher, with his tools of observation and logical analysis, is able to unearth the taken-for-granted views of reality, analyze them and throw lights on such experience in ways that have never been observed

before (Kneller, 1966). These are strings of activities that require little Or no statistical testing or manipulation of reality.

Design of the Study

The research design for this study was the phenomenological research design method. However, this study strays a little from the conventional phenomenological research design, as this study applies Heidegger's hermeneutics phenomenology methods.

Hermeneutics

Hermeneutics, which is popularly referred to as "interpretive phenomenology", as opposed to Husserl's phenomenology, has a major objective of arriving at the meanings of texts. It is a method that attempts applying logical and textual inferences to arrive at meanings. For instance, the current study attempts to critically examine critical thinking in curriculum using the Socratic Method/Theory with the major aim of ascertaining its relevance for the attainment of an educated person and the impact of such attainment in the everyday society, Thus, data is not generated like it happens in quantitative based research methods. Data is unearthed from observation and logical inferences, and such data is subjected to several philosophical tools of research, among these include the following:

Documentary Analysis

This research relied mostly on the philosophical methods of analysis. The analysis will focus mainly on documentary evidence relevant to this study. In effect, the analysis is primarily a document analysis on the intrinsic nature of critical thinking in curriculum within Nigerian education and its relationship with the Nigerian society. It is against this background that this work will employ words and direct citations from documents to richly describe and convey what the research will discover about the interpretation and

application of the Socratic Method (especially in the field of education). The study will also utilize the traditional methods of enquiry: namely the speculative; analytic; and prescriptive methods, The central argument will be guided by rigors of philosophical analysis employing the tools of language, analogical and logical representation of ideas.

Speculative Method

If philosophy must maintain its status as a search for the fundamental nature of reality it needs speculation. Philosophy becomes speculative when it raises questions about the ultimate nature of being and thought. In the argument of Barlin, Banquet and Maritain as cited in Odour (2010), philosophy employs the speculative approach because philosophical endeavors transcend the empirical method of the natural and social sciences as well as the formal method of mathematics. In effect, much of what the empiricist cannot reach through experimentation philosophical speculation may penetrate so as to unravel. As a form of theorizing, speculative philosophy goes beyond verifiable observation.

Specifically, in this study are the concept and issue of education and the educated man, the nexus between critical thinking and the Socratic Tradition and its relevance in the education of the Nigerian child which transcend empiricism and experimentation. In this study, there is the speculation on how dialogue and symposia gives mental clarity or beautiful thinking (*Eunoia*), as Socrates says is "the unexamined life is not worth living" (emphasis on education), the tenets of critical thinking as enshrined in the National Policy on Education (NPE). Basically, the task of the speculative approach (in this study) will seek to establish a connection between the thought or underlying strata of epistemological, pedagogy and its pedagogical implications of the Socratic Method for the development of critical thinking in Nigeria's basic education.

Analytic Method

A central area of investigation in philosophy of education is analysis. The analytic approach is pivotal on objective reflections, critical thinking, questioning and justification of research questions raised. This method. is most evident in the analysis of concepts, thoughts, language, logic etc. It is a practice by which claims about concepts, beliefs, assumptions and propositions are clarified, evaluated and presented in a consistent and coherent manner for the purpose of understanding. Above all, the analytic approach lays emphasis on the clarity of language, words and concepts employed in a study. This is with a view to avoiding ambiguity and vagueness. Therefore, analytically, gross attention in this study is on the concept of critical thinking.

Conceptual Analysis

Central to this task is the breaking down or analyzing of the Concepts of 'Critical thinking' from the bird's eye of the Socratic Method, as well as its constituent in the curriculum.

Linguistic Analysis

This study adopted the use of language to clarify concepts and to eliminate confusions arising from mystifying preconceptions about the terms that stretched through the length and breadth of this study. Terms such as critical thinking, the Socratic Method/Tradition, the educated man/person and Nigeria's Universal Basic Education.

Prescriptive Method

In addition to speculating about a phenomenon and analyzing related concepts and proposition on the central issues, philosophers have also tried to prepare solutions to perceived problems. This is the basis of prescriptive approach to philosophy, As Kneller

(1991) puts it, philosophy within the educational context help philosophers of education prescribe the ends that education ought to follow and the general means that can be employed to attain them. Against this backdrop, the extent to which the attainment of an educated populace can be redefined to develop values capable of producing more egalitarian, intellectual, responsible and fascinating Nigerian citizenry will be prescribed. The intended prescription will be logically derived from the recommendation that will be proffered by the study.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

So far, taking critical thinking as an attribute of an educated person, this study has attempted to elicit the underlying epistemology in Socratic Method/Tradition for the attainment of well-rounded educated person. Socrates teaching or Socratic Method as sometimes called is a method devised by the philosopher to instill in People a critical mind and criticality. Socratic Method is a form of logical argumentation originated by the ancient Greek Philosopher *Socrates (c. 470-399$_{BCE}$).* Although the term is now generally used as a name for any educational strategy that involves the cross-examination of students by their teacher, the method used by Socrates in the conversations re-created by his student Plato (428/427–348/347 $_{BCE}$) follows a more specific pattern: Socrates describes himself not as a teacher but as an ignorant inquirer, and the series of questions he asks are designed to show that the principal question he raises (for example, "What is piety?") is one to which his interlocutor has no adequate answer. Typically, the interlocutor is led, by a series of supplementary questions, to see that he must withdraw the answer he at first gave to Socrates' principal question, because that answer falls afoul of the other answers he has given. The method employed by Socrates, in other words, is a strategy for showing that the interlocutor's several answers do not fit together as a group, thus revealing to the interlocutor his own poor grasp of the concepts under discussion. Thus, Theoretical insinuations of critical thinking are visible in the works of philosophers like Aristotle, Descartes, Hume, Kant and Fanon while pedagogical implication is deducible in the theories of Socrates, Plato, Freire and Dewey through the given guidelines on the practical teaching of critical thinking in educational system as discussed –earlier.

However, critical thinking can be seen as an information processing capability, upon which future knowledge depends. According to Pollak (1986), critical thinking involves "mental Wrestling". This implies that critical thinking is a conscious process (Kant, 1952). It involves careful steps such as definite statement or at least a careful consideration of the assumptions, a knowledge of the meaning and procedures of inductive reasoning, the ability to make logical inferences, the ability to recognize logical fallacies both in one's own work and in the work of others, the ability to know that the proof or solution of a problem is complete, and finally that the correctness of any solution is dependent on the assumptions and the validity of solutions of dependent problems or theorems.

The foundation for critical thinking (F.C.T.) (2004), defined critical Thinking as "the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/ or evaluating Information gathered from, or generated by observation, experience, Reflection, reasoning, or communication, as a guide to belief and action". It entails the examination of those structures or elements of thought implicit in all reasoning: purpose, problem, or question-at-issue; assumption; Concepts; empirical grounding; reasoning leading to conclusions; Implications and consequences, objections from alternative viewpoints; and frame of reference.

These definitions suggest that critical thinking is not a single skill, but a battery of skills. The critical thinking skills are: ability to distinguish between facts and opinions; draw valid conclusions from given data; identify assumptions underlying conclusions, identify the limitations of given data; ability to speculate, imagine and see connections among ideas. According to FCT. (2004), a well cultivated critical thinker:

a. Raises vital questions and problems formulating them clearly and precisely.
b. Gathers and assess 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 alterative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences, and
c. Communicates effectively with others in figuring out solutions to complex Problems.

From the foregoing, it is clear that critical thinking is reflective, self-directed, self-disciplined, self-monitored, and self-corrective. Thus, the concept of critical thinking as used in this chapter refers to a complex of issues that lead to and emanate from the field of critical thinking, of which reflective thinking a step to it (critical thinking). Also, items (i)-(iii) above refer to problem solving abilities. Hence, critical thinking can be said to entail effective communication and problem-solving abilities. In this segment of the study, the researcher shall make an attempt investigate the place of critical thinking within NPE:

Critical Thinking and Nigerian Policy on Education

Philosophy and Goals of Education in Nigeria: Section 1, sub-section 1 of the Nigerian policy on Education states that

> The National Policy on Education enunciates the guidelines, objectives, standards, structures, strategies, and management for achieving the national education goals in Nigeria. The policy must be operated within the framework of the overall philosophy of the nation.

The overall philosophy of the nation includes, but not limited to:

a. Live in unity and harmony as one indivisible, indissoluble, democratic and sovereign nation founded on the principles of freedom, equality and justice; and
b. promote inter-African solidarity and world peace through understanding.

From the above, unity seems to be vigorously pursued and seems to be the focus of the philosophy of Nigerian education. However, from the standpoint of Socrates dialogue, society as a whole must have mental emancipation as the central fulcrum on which every other value rests on. The philosophy above attempts to force everyone to be united regardless of how ignorant and obstinate some really are. This may be the very first reason for the variant problems of the country contemporarily. With Socratic tradition there is a high chance of disunity between those who are mentally docile and those who have decided to uncritically uphold age long social conventions, Cultures, religious dogmas etc. and attempt for unity leads to nothing but trouble. The philosophy above at best instructs those in the ivory towers to uphold unity and democratic ideals within the society. One is left to wonder the possibility when the educated person Is detested by the high and low in the society (mostly uneducated, and in majority). It has been observed that one can become hated by some person just for the mere fact that one is educated. Education in some climes in Nigeria is an invite go be cheated and even spited. Speaking the English language alone is enough for someone else to feel inferior (complex issues). This goes a long way to explicate the utopian and impossible philosophy of education that the country wields.

Hence, Nigeria's Philosophy of Education is based on the following set of beliefs:

a. Education is an instrument for national development and social change.
b. Education is vital for the promotion of a progressive and united Nigeria.

c. Education maximizes the creative potentials and skills of the individual for self - fulfillment and general development of the society.
d. Education is compulsory and a right of every Nigerian irrespective of gender, social status, religion, colour, ethnic background and any peculiar individual challenges.
e. Education is to be qualitative, comprehensive, functional and relevant to the needs of the society.

The above list seem somewhat again impossible from the bird eye of the Socratic tradition. The fact that some persons are branded scientist or Philosophers, and they carry out certain empirical testing here and there, is not enough to termed them as "Educated". Only individual with a critical mind can contribute to societal development and social change, promoting a progressive and united Nigeria

First education should expose one to skepticism (in which one is to step back from his beliefs and traditions), self-arrival at truth and then empathy towards those still in mental fetters. It should be another burden that every citizen must carry compulsorily. It has to one that is borne out of interest. This clause of the Nigerian philosophy is probably one of the reasons for half-baked graduates in contemporary Nigerian (Jakande 2012). People in contemporary times are induced by the labour market, family pressures etc to get a certificate. These bring about ripple effects such as the multifarious social vices in contemporary Nigeria. One may need to conceptualize what the societal needs are, the needs of the society may be to an individual with a critical mind, quality governance and Provision of basic amenities, but to one still in the shadows, he may prefer bags of salt and rice at every electioneering season.

This philosophy of Nigeria education according to NPE (2013) is based on the development of the individual into a sound and effective citizen and the provision of equal opportunities for all citizens of the nation at the basic, secondary and tertiary levels both inside and outside the formal school system.

Basic Education: The Nigerian basic education is the first stage of the Nigerian education structure. It is the first nine (9) years in the Nigerian 9-3-4 educational structure. NPE stated the objectives of basic education are to:

a. inculcates permanent literacy and numeracy and the ability to communicate effectively;
b. lay a sound basis for scientific and reflective thinking; ensure citizenship education as a basis for effective participation in and contribution to the life of the society;
c. build character and moral training and the development of sound attitudes;
d. develop in the child the ability to adapt to his changing environment;
e. give the child opportunity for developing manipulative skills that will enable him to function effectively in the society within the limits of his capacity and finally;
f. provide basic tools for further educational advancement including preparation for trades and crafts of the locality.

NPE projects to inculcate permanent literacy, numeracy, and ability to communicate effectively. This point has to do with developing the child's speaking, Writing, reading and speaking skills. No wonder, NPE (1998) deems it fit to include the teaching of languages such as English, French and Language of the environment to the primary school curriculum. Ability for one to communicate well in whatever vocation he finds himself leads to economic growth. Education is wealth. Education is also an

investment and a means of human development. As an investment, it is essential for national development and contributes directly to personal fulfillment and the growth of the individual. Numeracy will help the recipient in areas like measurement (if he is a carpenter, tailor, mason) and calculations. Effective communication with clients will boost his trade. The NPE also tries to lay a sound basis for scientific and reflective thinking, ensures citizenship education as a basis for effective participation in and contribution to the life of the society. It depicts a picture of an education that is a one-size-fits-all. This is not far from a utopia. It is not far from the analogy of Albert Einstein where he admonishes that a fish shouldn't be judged by his ability to climb a tree else he lives his life reasoning as though dumb animal. For education to take place, education needs to attend to the different levels of education as stratified by Plato a student of Socrates which are:

1. Self-discovery
2. Skepticism
3. Consciousness of ideological blinders
4. Willful participation in mental liberation
5. Commencing the journey to knowledge acquisition
6. Enduring the several arduous crucibles in attainment of knowledge
7. Subduing such imitations just like the captives eyes getting used to the pseudo lights (fire) and the ultimate light (the sun—Knowledge)
8. Attainment of a critical and reflective mindset.

We are to note that the end points, according to the analysis of this study, are on the attainment of knowledge—knowhow of critical thinking (inclusive of reflective thinking) with emphasis on basic education levels. Having identified these stages, education, though

be tailored at his specified destination, must be deliberate about shredding individuals off ideological clogs such as religion and ethnicity. This criticality of mind allows and enables the Nigerian Child to adapt to his changing environment by instilling character, moral training and the development of sound attitudes, gives the child opportunity for developing manipulative skills that will enable him to function effectively in the society within the limits of his capacity.

Responses to the Research Questions

Research Question One: What is Critical Thinking?

Critical thinking, through the philosophical model of Socrates could suggest the agenda for the tradition that facilitate critical thinking in teaching and learning, namely to reflectively question common beliefs and explanations, carefully distinguishing those beliefs that are reasonable and logical from those which – however appealing may be to our native egocentrism. In education, there are several Pedagogical methodologies designed to enhance teaching and learning processes, among these methods are lecture method or conventional method, project method, play way method, dramatisation method and so on (Oyewumi 2019). Critical thinking pedagogy as a conventional 'aching method in educational processes might aid education to achieve the directive of developing appropriate skills in learners such as: mental, physical and social abilities and competencies to empower the individual to live in and contribute positively to the society just as it is enshrined in the NPE. Critical thinking as a skill is expected to lead to creativity which Akinboye (2016) describes as the tool that is specifically designed to incorporate the skills that will make education relevant, functional and aids employability for learners The creativity propensity that could be acquired through efficient implementation of critical

thinking pedagogy would foster individual to live in and contribute positively to the society.

By the way, critical thinking skill according to Oyewumi (2019) is called problem solving by some scholars, and it involves knowing, understanding, analysing, synthesising, applying and evaluating an idea or problem. In other words, critical thinking is a big umbrella under which other skills are subsumed. For this Jimoh (2013) identifies four aspects of critical thinking namely abstract thinking, creative thinking, systematic thinking and communicative thinking. This is what the rationalist philosophers called 'apriori' knowledge. Creative thinking on another hand means thinking out of the box; that is innovation. In other words, ability to be creative with what one is given, either an idea or corporeal object that could be transformed into another useful product. While systematic thinking is described as a process of organising thoughts in logical steps. It is when thoughts are logically presented such that it makes meaning or is sensible that it can be judged as being systematic. Critical thinking also develops communicative skill by being precise in giving ideas to people, especially in interpersonal relationship that covers day-to-day thinking, it can then be established that critical thinking skill is an enabling circumstance where other skill, can thrive and therefore very necessary for the educators to be skilled in the appropriate use of critical thinking while teaching. Similarly, Elder and Paul (2010) describe critical thinking as the ability and disposition to improve one's thinking by systematically subjecting it to intellectual self-assessment. This implies that to be a critical thinker, one should possess the prevailing tendency or inclinational quality for critical thinking, as well as intellectual self-assessment, which is a property of the mind.

Research Question Two: What impact has Critical thinking played in curriculum?

Critical thinking goes beyond memorization and rote learning; it's about engaging with content in a meaningful way, asking probing questions, evaluating evidence, and drawing logical conclusions. Within the curriculum framework, critical thinking is woven into the fabric of teaching and learning, with a focus on nurturing students' ability to think critically across various subjects and contexts. Critical thinking have various impact in curriculum including; Promoting Inquiry-Based Learning that stimulate curiosity and promote independent thinking. Students are encouraged to ask questions, explore concepts, conduct research, and draw conclusions based on evidence, fostering a deeper understanding of content and developing critical thinking skills in the process. Problem-based learning is a cornerstone of critical thinking, where students are presented with real-world problems or challenges to solve. By engaging in authentic problem-solving activities, students learn to analyze situations, brainstorm solutions, evaluate alternatives, and apply critical thinking skills to devise innovative solutions.

It emphasizes metacognitive strategies that encourage students to reflect on their thinking processes and learning experiences. Through reflection, students gain insights into their strengths, weaknesses, and areas for improvement, enhancing their ability to self-regulate and apply critical thinking skills effectively thereby developing Analytical Skills Across Subjects. It helps the curriculum design to promotes collaborative learning environments where students engage in meaningful discussions, debates, and collaborative projects. By interacting with peers, sharing perspectives, and defending their ideas, students develop essential communication and critical thinking skills, learning to construct well-reasoned arguments and consider multiple viewpoints. It places a strong emphasis on student-centered learning, empowering learners to take ownership of their learning journey.

By providing opportunities for choice, autonomy, and self-directed inquiry, it cultivates a sense of agency and independence, enabling students to develop and apply critical thinking skills in authentic contexts.

As curriculum standards have changed, the number of standards that require a higher level of thinking has increased. These standards emphasize the importance of critical thinking skills and require students to engage with complex texts and problems on a deeper level. The emphasis on higher level thinking is reflected by employers seeking individuals who can think critically, analyze information, solve problems creatively, and collaborate effectively.

Research Question Three. How is Critical thinking incorporated into subject specific curricula?

There are innumerous ways to motivate students to uncover and take charge of their thinking to become creative and critical thinker, in as much as the deducible principle of critical thinking from the philosophies of Socrates is concerned. These principles are mutual dialogue, appropriate questioning that engender enquiry, relaxed and conducive environment, linking curriculum contents and classroom activities to life outside classroom through solving true life problems in the classroom.

However, critical thinking skill can only evolve when properly cultivated and guided through foreseeable phases which the pedagogy desires to proffer. The theoretical stages presented here are not in their totality; it can be further developed depending on the ingenious ability of the individual teacher. Nonetheless, certain premises are relevant as primer for would-be teachers for effectual growth of critical thinking skills in learners. Thus, teachers should know that:

i. There are foreseeable stages that every critical thinker must go through,

ii. One stage to the next is leaning upon a level of obligation on the part of a person; it is not mechanized, knee-jack or inborn trait in human.

iii. Success in directive is connected to the cognitive (intellectual) prowess of student learning and that,

iv. Reverting, regression or retrogression is possible in development if not persistent.

These highlighted suppositions will enable both the teacher and learners to be a great beneficiary of critical thinking pedagogy because both are teacher and learner under the principle. So, there are six phases or features of a critical thinker which teacher requires to be aware of during teaching and learning activities. Knowing the phases will help the pedagogue the right choice of classroom exchange and teaching aid that can develop critical thinking skill in learners at each phase of critical thinking buildup. These phases are:

1. The Unreflective thinker - lacks the ability to clearly assess their thinking and improve it thereby. The thinker fails to recognize thinking as involving concepts, assumptions, inferences, implications, point of view and so on.
2. The Challenged thinkers - becomes aware of the determining role of thinking and basic problems that come from poor thinking. At this level the thinker develops some reflexive awareness of thinking for good or ill.
3. The beginning thinker - the thinker recognizes that they have basic problems in their thinking and make attempts to better understand and improve it. They recognise and intenalise standards for the assessment of thinking: clarity, accuracy, precision, relevance, logicalness and so on.

4. The practicing thinker - has a sense of the habit and practice regularly but still has limited insight into deeper levels of thought. He can critique his own plan for systematic practice.
5. The advanced thinker - actively analyses its thinking in all the significant domains of life. He regularly critique his own plan for systematic practice and improve on it.
6. The accomplished thinkers - systematically take charge of their thinking and continually monitoring, revising and rethinking strategies for continual improvement of their thinking. They are deeply internalised basic skills of thought. They are deeply committed to fair minded thinking and have a high level perfect control over their egocentric nature.

Having identified the categories of thinkers and their expected ends, there is need to Present the pedagogical necessary conditions in form of directives that steer the teacher in the effective use of critical thinking skill through educational praxis (practice).

Pedagogical Conditions for Critical Thinking Lessons

1. Critical thinking teacher should let learners understand that whenever humans reason, they have to adopt certain elements without which their thinking would be intellectually unintelligible.
2. It should be noted that thinking is unavoidably driven by the questions we seek answer and for some intention.
3. Thinking through any problem, issue or content should take command of these cognitive (intellectual) structures: purpose, question, information, inferences, assumptions, concepts, point of view and implications.

4. Lexicon (vocabulary) for talking about thinking needs to be learned gradually, systematic and progressively based on the strata of education
5. Teaching content as a pattern of thinking means that all content areas are linked to organized ways of finding out things.
6. Teaching can lead discussion and focus on what we want them to figure out. For example, we can focus instruction on key fundamental questions and make those questions explicit.
7. Teacher should help pupils to be aware of how thinking is organised or how to assess or develop it.
8. Critical thinking teacher (pedagogue) should identify the relevance of challenging learners, by assisting them in a way by leading class interaction about thinking. That is, expressing a model of thinking about thinking.
9. Classroom actions that distinctly require learners to think about their thinking should be outlined where learners themselves can scrutinize both poor and sound thinking.
10. Learners should be initiated to idea of servility, intellectual humility, modesty, and meekness, that is, the idea of becoming aware of our own ignorance.
11. Teaching should be in such a way that will permit learners know that there is need for consistent practice of good thinking to become good thinkers. For instance sporting comparison and other skill areas can be used to convince learner
12. Learners need to understand that thinking is inescapably driven by questions, and that w¢ seek answers to questions for some purpose. For instance, to answer

question, we need information and to use information, we must interpret it by making inferences.

13. Lastly, critical thinking pedagogy should be adopted with the curriculum content scholarly, through the cognitive (intellectual) elements of thinking; so that learner can develop critical thinking skill along with their subjects or area of interest.

The teacher (pedagogue) of Critical thinking after making attempt to make learners recognize the phases of thinking as envisioned above, can assist learners bring together information when required, and 'also dictates when it is right to take step of explaining the information. Learners deduction can be made crystal clear, when they make questionable conjectures their attentions can be called and ask them what other deductions might be made. Similarly, if they make questionable suppositions, they can be aided to identify it. The relevance of their thinking as well can be heightened through implications and repercussions.

Research Question Four: How is Critical thinking implemented for the development of the Nigerian Child?

Emphasizing on the need to use techniques and pedagogy to enhance critical thinking, Tsai, Chen, Chang, & Chang in GDC Team (2014) explains that students" critical thinking will be improved when they are trained to look beyond what is happening to think about why they happening. This underscores the need for authentic and pragmatic instructional strategies which could help learners to point out why an answer or solution was arrived at. Lai (2011) citing various literatures advised that Instructors use cooperative or collaborative learning methods and constructivist approaches that place students at the center of the learning process when teaching for critical thinking. They also add that instructors should use open-ended tasks or questions that incorporate real world and

authentic problem context in constructing assessment for critical thinking. Kennedy et al. cited in Lai (2011) reports that instructional interventions used to improving students‟ critical thinking skills have generally shown positive results. Also, Abrami cited in Lai (2011) giving a meta-analysis of empirical studies that examined the impact of instructional interventions on students‟ critical thinking skills and dispositions found that these interventions, in general, have a positive impact, with a mean effect size of 0.34. Based on the foregoing, this paper introduces the following 21st century instructional approaches/strategies for use in critical thinking classrooms; they are briefly explained here;

1. Classroom Assessment Techniques (CAT): Classroom assessment techniques (CATs) are teaching strategies that provide formative assessments of student learning. Here students are guided to assess their own learning in written or oral form. Simple assessment techniques should be taught to them to enable them assess one another. It has been argued that the use of CATs enhances and improves student learning. A study carried out by Baylon (2014) in which he sought to evaluate the classroom assessment employed by the teachers on the critical-thinking and academic performance of the students in the laboratory high schools (LHS) of Central Bicol State University of Agriculture, school year 2012-2013, the findings revealed that only 11 out of 50 types of classroom assessment techniques are being used in the two laboratory high schools of CBSUA, namely: CDE- LHS and CDE the other techniques used by the teachers were classified as low-order thinking skills. There were significant differences in the levels of critical thinking among the second year students in the two LHS along remembering, understanding,

analyzing and evaluating while for third year high school students in the two LHS there was significant difference in evaluating but not significantly different with the rest of the levels. The above study settles the argument on whether classroom assessment improves critical thinking or not.

2. Cooperative Learning Strategy (CLS): This pedagogical approach enhances brainstorm or rubbing of mind with continuous support and feedback from other students and teachers. Students should be grouped on regular basis to discuss or handle issues that border on critical thinking. The facilitator should also ensure that everybody participates and is carried along. And that calls for proper supervision of classroom activities. At the end of every section, the facilitator and students take turns to give feedback on individual as well as group performance. Johnson, Johnson and Smith cited in Chatila and Husseiny (2016) report that recent research findings revealed that cooperative learning instructional strategy enhanced thinking skills of learners. Owing to the above, Lunenburg cited in Chatila and Husseiny (2016) states that cooperative learning strategy has been recommended by many scholars for use in the classroom to ensure sustainable knowledge of critical thinking,

3. Case study\Discussion: Case study discussion is a learner-driven active learning model where the instructor is no longer a repository of knowledge but a facilitator. Here the teacher is expected to present an inconclusive case or story to encourage students to discuss extensively on it. Like case study in research, learners are prompted to supply detailed information on an individual or institution. It encourages brainstorming. A story that is related to the problem about to be solved

may be introduced in such a way that will generate extensive discussion and brainstorming Every learner should be carried along in this exercise. They can work through case studies individually or in groups. Whichever way the facilitator chooses, he/she should ensure that feedback is given at the appropriate time. Maloy and DeNatale cited in Cheong and Cheung (2008) report that research studies have shown that electronic discussion is effective in teaching critical thinking and can enhance students‟ understanding. Mansureh (2012) carried out a study on the effect of dialogic teaching methods (group discussion and Socratic dialogue) on University students‟ critical thinking disposition and social interaction. The findings showed that dialogic teaching methods improved six elements of critical thinking dispositions (analyticity, cognitive maturity, CT self-confidence, self-evaluation, open- mindedness, truth seeking), and seven elements of social interaction (knowing each other, friendship and intimacy, tendency to dialogue, responsibility, class dynamism, interaction with teacher, intimacy with the instructor) of subjects. It should be noted that both real life and electronic dialogues are effective pedagogy for teaching critical thinking.

4. Questions: Studies have shown that skillful and effective use of questions and answers in the classroom can improve learners‟ critical thinking. A study by Shen (2012) on the effects of teachers‟ questions on the development of students‟ critical thinking attests to the above statement. The results indicated that the teacher asked more lower-cognitive questions (79.2%) than higher ones (20.8%); that excessive use of lower-cognitive questions could not facilitate the development of students‟ critical thinking and that higher cognitive questions were misused by the teacher.

There is no gainsaying that „questioning‟ is a powerful tool any competent teacher could use to expose learners to higher order thinking, problem-solving and critical thinking. Questions sharpen the brain and make it more alert. Thinking is driven by questions. To maximize the use of questions in the class, the teacher is expected to encourage students to ask reasonable open ended questions about issues and to think before they answer questions. This is why it is true that only students who ask questions are really thinking and learning.

5. Reciprocal Teaching and Peer Questioning: Reciprocal teaching refers to an instructional activity that takes place in the form of a dialogue between teachers and students regarding segments of text. The dialogue is structured by the use of four strategies: summarizing, question generating, clarifying, and predicting. In this case the dialogue is between students and they use one of the strategies of reciprocal teaching which is questioning. First, the teacher assigns earners into small groups and gives them task (problem situation) and learners are guided to generate questions on how to tackle the problem. A general topic is collectively chosen and each group deliberates on it through questioning. Students take turns to ask critically thought out questions that border on the description of the problem situation and its possible solutions. After that first phase, the secretary of every group comes out to present the groups‟ proposals and the entire class will consider their relevance. A study by Andi (2016) which aimed at investigating the effectiveness of reciprocal teaching strategy embedding critical thinking for students‟ reading comprehension at the second grade of MIA at MAN affirmed the effectiveness of questions in critical thinking skills. Kendari cited in Andi (2016)

found significant improvement in students‟ post-test scores, which means that reciprocal teaching strategy embedding critical thinking improved students‟ reading comprehension.

Research Question Five : At what ends is the implementation of the subject specific curricula contemporarily relevant towards the development of the Nigerian Child?

A curriculum which has incorporated specific subjects favouring critical thinking for the Nigerian child is of a great benefit to both the child and the nation at large. Some of which are;

1. Enhances Creativity & Curiosity: Critical thinkers are always curious about everything in life and possess diverse interests. Critical thinking entails continuously asking questions and wanting to learn more about why, who, what, when, and where, as well as everything else that can assist them in making sense of a circumstance or notion. They will never accept anything at face value. They are incredibly creative thinkers who see themselves as having endless potential. Critical thinkers are always looking for ways to improve, which is essential in the workplace. It therefore is important to the development of the Nigerian Child to help them always look for ways to improve the life in the Country.
2. Enhances Research Skills: Critical thinking will help the Nigerian child improve his/her research abilities by observing, analysing, synthesising, and conducting detailed experiments with every element for effective results.
3. Elevates Autonomous Learning: If we think deeply, we believe more independently because we trust ourselves more. Critical thinking is essential for empowering the Nigerian Child to make choices and develop views.
4. Be a Good Communicator: While you may believe being a critical thinker will cause relationship problems, this could not be further from the truth! Being a critical thinker can assist the Nigerian Child in better comprehending the perspectives of others and becoming more open-minded to different points of view.

5. You learn how to communicate your feelings.
6. Solve Problems: Problem-solving is a basic reflex for those with the ability to think critically. Critical thinkers are attentive and dedicated to solving problems. Just as Socrates describes himself not as a teacher but as an ignorant inquirer, Albert Einstein also stated, "It's not that I'm so intelligent; it's just that I stay with issues longer." Critical thinkers' advanced problem-solving abilities enable them to excel at their jobs and fix the world's most challenging problems. They can transform the world for the better.
7. Make Sense of Information: Being a critical thinker means dealing with data more seriously than the rest. Hence they would learn how to evaluate information. It will help him/her separate the crucial information from the redundant ones.
8. Make Decisions: There's no denying that critical thinkers make the best decisions. Critical thinking helps us cope with daily issues, and this method is often achieved subconsciously. It teaches us to think for ourselves and to trust our instincts. This will further help us in our career and life in general.
9. Learn to Think Out-of-the-Box: Once you start thinking critically, you will have a wide set of ideas. You will be forced to think out of the box in challenging situations, which will also help you think faster.

Discussion of Findings

The following were the findings from the study:

1. This study holds that Critical thinking skill which is called problem solving by some academic intellectuals, involves knowing, understanding, analysing, perusing, synthesising, pontificating, applying and evaluating an idea or problem. In other

words, critical thinking is a big umbrella under which other skills are subsumed. Through which popularly and widely held beliefs/dogmas are totally transformed into intellectual awakening and consciousness. For the purposes of further sense making, the former shall be referred to as “old knowledge” and the latter “new knowledge”.

2. Socrates method of questioning called dialectics, demonstrated that persons may be in a high positions of authority and yet be deeply confused and irrational. This confusion is further laid to rest through dialectics that engendered active learning, reflective thinking through collaborative efforts, independent thinking.
3. The current ineffective pedagogical strategies in Nigerian classrooms like conformist model, laissez-faire method, I-it model and authoritarian model are methods that kill f creative ability of learners through teachers’ activities. If application of critical thinking pedagogy can be reawakened or energised in Nigerian educational philosophy and practice, there is every tendency that the quality of education received in Nigeria will improve through the deducible principles of Socrates.
4. These principles are mutual dialogue, expedient questioning that engender enquiry, eased and conducive environment, linking curriculum contents and classroom activities to life affairs outside classroom and solving true life problems in the classroom.
5. Through the Socratic traditions, Socrates not only shaped the ethical principles but also the revolutionalised educational pedagogy, introducing a dynamic, interactive

approach to teaching that encourages students to think for themselves, question their assumptions, and engage in meaningful dialogue with others.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

The study is aimed at advancing the importance of the acquisition and employment of Critical thinking through the education of learners. This is evaluated through the assessment of the Nigerian educational practice from the stand point of Socratic Tradition. The study's scope was the basic education levels. The following questions were raised to guide the study:

1. What is Critical thinking?
2. What impact has Critical thinking played in curriculum?
3. How is Critical thinking incorporated into subject specific curricula?
4. How is Critical thinking implemented for the development of the Nigerian Child?
5. At what ends is the implementation of the subject specific curricula contemporarily relevant towards the development of the Nigerian Child?

To answer the research questions, the philosophical methods of inquiry were employed. These include the speculative, analytical and prescriptive forms of enquiry. In speculative philosophy, the Study was able to lay down consistent and coherent narrative on why critical thinking has become an issue of interest and how/why Socrates Method is a useful standard to anchor the paradigm (to achieve critical reflective thinking). Also using speculative philosophy, the researcher was able to justify the selection of Basic education as a scope in the study. By way of speculative philosophy, the study provides the elements

for analysis of critical development of the content objectives of NPE. It is through documentary analysis (a tool of analytical philosophy), that the study is able to understand the limitations of NPE as it pertains to Socratic method/tradition . The lens under which the study has viewed education and the teaching/learning exercises hopes to bring a new meaning to the concepts of education, teaching and learning

Conclusion

The Nigerian social landscape seems to be majorly plagued by so many problems (with a host of them emanating from ideological or cultural divided). Issues such as religious fundamentalist actions, outright intolerance for another's culture/language and unquestionable conceptual ideals (held by people), have been key to the social problems the country experiences. These sort of actions are not just mindless but improper for peaceful human coexistence. There is therefore a need to reengineer education from the stand point of critical thinking, especially the mannerisms implicit in the Socratic tradition. In the Socratic Tradition, Socrates describes himself not as a teacher but as an ignorant inquirer, and the series of questions he asks are designed to show that the principal question he raises is one to which his interlocutor has no adequate answer. An educated person (one who possesses a critical mind) should be able to integrate reality into battery of knowledge-set, where he or she applies each component as at when necessary, and not know-towing to some sort of brazen truths cast in iron by some ideological forces. The idea of critical thinking pedagogy is conceived through an ineffective deployment of critical thinking and noncritical nature of the products of Nigerian educational process despite well stated policy statement on the importance of critical thinking in the national policy on education. Sometimes, this ineffectiveness of critical thinking among students

and graduates render them bigots, unemployable, unequipped and dummies. Upon these noted weaknesses, the study was set to look into how the ideas of great philosopher, Socrates, with educational inclination can be used to fashion @ pedagogy that can help promote critical thinking through formal education system. Formal School system has been designated as the best instruction where a desirable change in the society ‘an be entrenched. Therefore, the responsibility of teaching critical thinking skill falls on the teacher who can only achieve this through the use of appropriate pedagogy such as critical thinking laden pedagogy or method of teaching.

Implications for Teaching and Learning in Nigerian School’s Classroom

Implication of critical thinking pedagogy for teachers is that he/she needs this kind of knowledge as an enhancer to his/her productivity. In other words, an understanding of philosophical contribution to the advancement of knowledge will go a long way to assist the practitioners. Teachers should know that to teach is to create possibilities for the construction and production of knowledge not assuming a position of one who knows it all and infallible to errors. Besides, teachers should be aware that as educators, teaching does not only entail contents delivery but also directing correct thinking. Therefore, the kind of teaching that promotes memorisation and regurgitation of facts should be discarded and replaced with progressive pedagogy like critical thinking pedagogy. Ekanem (2011) submitted that an intellectual who memorises everything, reading for hours on end are slaves to the text (Like the prisoners in the allegory of the cave who sees shadow as their ultimate reality), fearful of taking risk. In other words, intellectual activity should involve active thinking based on rationality.

Moreover, the use of critical thinking pedagogy has propensity of producing worthwhile and democratic beings because the process involved has respect for the knowledge of the learners, On this, Freire (2001) opines that thinking correctly is the responsibility of the teacher or of the school to respect the kind of knowledge that exists among the popular classes. He further contend that respect for the autonomy and dignity of everyone is an ethical imperative and not a favour. Therefore, respecting the autonomy, dignity and identity of the students entail the development in practice, coherent attitude and virtues such that it makes no sense to talk of democracy as a teacher while one acts to the contrary by way of exhibiting the arrogance of know all syndrome - 'sage on the stage'.

Recommendations

Following the conclusion reached from the analysis made on the importance for the acquisition and employment of critical thinking in the analytical implications of the experience of the Socratic method, the study recommends that:

1. Education policy makers should as a matter of necessity form policies that stress the need to acquire critical thinking competencies. This will go a long way to feed the tertiary schools with morally upright and rational individuals (undergraduates). These may stem the evil tides of cultism, promiscuity and fraud amongst our future leaders
2. Informal and vocational education should as well be taken more seriously by educational boards. Informal education for a long time has lacked measures of quality assurance and proficiency. If the government of the day serious about re-inventing mental wheels of the Nigerian populace, then she needs to find a way to recognize the informal sector (which is the first place post basic education

graduates run to upon graduation). The process of recognizing these informal trade centers should come with certain rules of engagement of which critical thinking evaluation should form a part.

3. Studies in peace education and tolerance should be made a subject on its own rights (during the basic education programme) instead of its late introduction at the tertiary levels of learning.

4. The strengthening of values education should be employed by the curriculum practitioners, educational planners and teachers as a possible paradigm for behaviour transformation and ethical reorientation with emphasis on the Socratic method of teaching which has been identified as a skillful and systematic way of turning the human soul from the darkness of false beliefs and distorted value system to true knowledge of reality. Meanwhile, the national policy on values education should be put in place as a reference instrument that will guide both individual and official transactions in the country. When ail these are sustained, the possibility of attaining national development is assured.

5. Critical thinking pedagogy should be viewed as an alternative pedagogy derived from the Method of Socrates. As evident in the study, the proposed teaching pedagogy may not be totally new but rather an-enhancer to whatever pedagogy chosen by the teacher in the course of teaching and learning. It is therefore recommended for teachers at all levels of education as a paradigm shift in pedagogical skills that could develop more active learners who have acquired the skills of problem-solving, moral formation, independent thinking and autonomous learning through the process of teaching and learning in a formal school setting.

6. The teacher training institute should be mandated to take compulsory courses in critical thinking so as to re-invent the wheels of classroom management and teaching style.

Contribution to Knowledge

One of the merits of this study is how it actively caters for the acquisition of critical thinking skills in learners through the teaching and learning processes in Nigeria basic education practice. The likely proposed theoretical and practical approach in this study to the development of critical thinking in learner through teaching and learning activities would meet the demand for pedagogical tools that would engender active learning, reflective thinking through collaborative effort, independent thinking, and impart critical thinking in learners by the teachers of Nigeria's basic educational enterprise.

This study also contributes literature to reduce the scarcity of study on a pedagogical skill that focuses on the development of critical thinking through praxis by teachers at all levels of education in Nigeria. In other words, it would contribute to the existing teaching methods for teachers to use. It would also be unique in the sense that it is a contribution to knowledge, especially in the area of curriculum development under the shade of philosophy of education.

Suggestion for Further Study

This study was centered on the ideas of Socratic tradition to develop a pedagogy which could address the problem of ineffective deployment of critical thinking skill in learners through the teaching and learning processes in Nigeria's basic educational practices. In other words the study will attempt to explicate how Socratic Method can assist pedago

gically, the development of critical minded student in Nigeria's basic level of education. However, based on the discussion and findings, the study suggests the following for further studies:

a. Critical Thinking in Freire's Pedagogy of the Oppressed and the Quest for the Educated Person: Implications For Nigeria's Basic Education
b. Plato's Republic: Implications for Nigeria's Basic Education
c. The Socratic Method; A practitioners Handbook: Implications for Nigeria's Basic Education
d. Comparative Study of Plato's Dialectics and Locke Theory of Virtue on the Critical Thinking pedagogy for the development of Nigeria's Basic Education
e. An Epistemological Assessment of the Acquisition of Critical Thinking in Thomas Kuhn's Theory of Scientific Revolution in Nigeria's Basic Education.

REFFERENCES

Abrami, P. C., Bernard, R. M., Borokhovski, E., Waddington, D. L, Wade, C. A., & Persson, T. (2015). Strategies for Teaching Students to think critically: *A Meta-analysis. Review of Educational Research*, 85(2), 275-314

Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M. A., Tamim, R., & Zhang, D. (2008). Instructional Interventions affecting CT Skills and Dispositions: A Stage 1 *Meta-analysis. Review of Educational Research,* 78(4), 11021134.

Akinboye, J. O. (2016) Educational Innovation and Entrepreneurial Skills Learning. Ibadan: CYFO Behaviour Services Ltd

Alabi, A. T. (2000). Teaching Practice Supervision: A Tool for Effective Development and Application of Teaching Skills. In: A Guide to Teaching Practice, Idowu, A.L, S.O. Daramola, A.S. Olorundare, O.O. Obiyemi, N.Y.S. Ijaiya and K. Lafinhan (Eds.). University of Ilorin, Horin, Haytee, pp: 281-290

Alabi, A.T. (2005). The Relevance of Staff Development Programmes to Staff Performance in the School System. *Ilorin J. Educ.*, 24: 134-145.

Alexander, P. A. (2014). Thinking critically and analytically about critical-analytic thinking: An introduction. *Education Psychology Review*, 26(4), 469-476. https://doi.org/ 10.1007/s10648-014-9283-1

Aliakbari, M., & Sadeghdaghighi, A. (2013). Investigation of the relationship between gender, field of study, and critical thinking skill: The case of Iranian students. Proceedings of the 16" Conference of Pan-Pacific Association of Applied Linguistics.

Amrous, N., & Nejmaoui, N. (2016). A Development Approach to the Use of Critical Thinking Skills in Writing: The Case of Moroccan EFL University Students. *Arab World English Journal, ASELS Annual Conference Proceedings,* 142-156.

Angeli, C., & Valanides, N. (2005). Preservice Elementary Teachers as Information and Communication Technology Designers: An Instructional Systems Design Model based on an Expanded View of Pedagogical Content Knowledge. *Journal of Computer Assisted Learning*, 21(4), 292-302.

Bailey, J. F. (1979). The effects of an Instructional Paradigm on the Development of Critical Thinking of College Students in an Introductory Botany Course. Dissertation Abstracts International 40: 3138A

Bailey, R. & Mentz, E. (2015). IT Teachers' Experience of Teaching-Learning Strategies to Promote Critical Thinking. *Issues in Information Science and Information Technology*, 12, 141-152.

Bailin, S. (2002). Critical Thinking and Science Education. *Science & Education, 11(4), 361375.*

Bailin, S., & Siegel, H. (2003). Critical Thinking. The Blackwell Guide to the Philosophy of Education, 181-193.

Bailin, S., Case, R., Coombs, J. R., & Daniels, L. B. (1999). Conceptualising Critical Thinking. *Journal of Curriculum Studies,* 31(3), 285-302. http://dx.doi.org/10.1080/002202799183133

Barnes, C. A. (2005). Critical Thinking Revisited: Its Past, Present, and Future. New Directions for Community Colleges, Summer 2005, 5-13.

Barzilai, $., & Zohar, A. (2012). Epistemic Thinking in Action: Evaluating and Integrating Online Sources. *Cognition and Instruction*, 30, 39-85

Behar-Horenstein L.S. & Niu, L. (2011), Teaching Critical Thinking Skills m Higher Education: A Review of the Literature. J. Coll. Teach. Learn. (TLC) 8, 25-42. {Google Scholar} [CrossRef]

Bleazby, J. (2011). Overcoming Relativism and Absolutism: Dewey's Ideals of Truth and Meaning Philosophy for Children. *Educational Philosophy and Theory*, 43, 453-466. doi: 10.1111/j.1469-5812.2009.00567.x

Bok, D. (2006). Our Underachieving Colleges. A Candid look at how much Students Learn and why they should be learning more. Princeton, NJ: Princeton University Press.

Bonney, C., & Sternberg, R. J. (2011).Learning to Think Critically. In R. E. Mayer & P. A. Alexander (Eds.), Handbook of Research on Learning and Instruction (pp. 166-195). New York, NY: Routledge

Brady, M. (2008). Cover the Material: Or Teach Students to Think? *Educational Leadership,* 65, 64-67.

Broadbear, J. T. (2003). Essential Elements of Lessons Designed to Promote Critical Thinking. *J. Scholarsh. Teach. Learn.,* 3(3): 1-8.

Bruine de Bruin, W., Fischhoff, B. & Parker, A. M. (2007). Individual Differences in Adult Decision-Making Competence. *Journal of Personality and Social Psychology,* 92, 938-956.

Burbules, N. C., & Berk, R. (1999). Critical thinking and Critical Pedagogy: Relations, differences, and limits. In T. Popkewitz& L. Fendler (Eds.), Critical theories in education (pp. 45-65). New York: Routledge.

Chinn, C. A., Buckland, L. A., & Samarapungavan, A. (2011). Expanding the Dimensions of Epistemic Cognition: Arguments from Philosophy and Psychology. *Educational Psychologist*, 46, 141-167.

Chouari, A. (2016). Teaching Critical Thinking in Moroccan Higher Education: Challenges and opportunities. *Arab World English Journal (AWE5),* 7(2), 457-467.

Colucciello, M. L. (1999). Relationships between Critical Thinking Dispositions and Learning Styles. *Journal of Professional Nursing*, 15,294-301.

Cotton, K. (1991). Teaching Thinking Skills. Retrieved date, from Northwest Regional Educational Laboratory's School Improvement Research Series Website: http://www.nwrel.orghttp://educationnorthwest.org/6/cu11.html

Dewey, J. (1933). How we think: A Restatement of the Relation of Reflective Thinking to the Educative Process (Revised edition). Boston, MA: Heath.

Drew, C. (2019). The 4 Types of Gritical Thinking Skills - Explained! Helpful Professor. https://helpfulprofessor.com/thinking-skills/

Eason, L. E. (1986). The Relationship of Critical Thinking Skills and Psychological Type in Community College Students' Responses to Science Instruction. Dissertation Abstracts International 47:3952A. *Educational Researcher* 18 (1): 16-25.

Eggen, P. D., & Kauchak, D. P. (1996). Strategies for Teachers: Teaching Content and Thinking Skills (3rd ed.). Needham Heights, MA: Allyn& Bacon

Elder L., & Paul, R. (2010). Critical Thinking Development: A Stage Theory. Retrieved from http://www.criticalthinking.org/pages/critical-thinking-development-a-stage-theory/483

Elder, L. & Paul, R. (1994). Critical thinking: Why we must transform our Teaching *Journal of Developmental Education,* 18 (1), 34-3

Emir, S. (2009). Education Faculty Students' Critical Thinking Disposition According to Academic Achievement.World Conference Education Science, 1

Ennis, R. (1993). Critical Thinking Assessment. Theory into Practice, 32(3), 179-186.

Ennis, R. H. (1985). A logical Basis for Measuring Critical Thinking Skills. *Educational Leadership,* 43(2), 44.

Ennis, R. H. (1987). A Taxonomy of Critical Thinking Dispositions and Abilities. In J. B. Baron & R. J. Sternberg, Teaching Thinking Skills: Theory and Practice (pp. 9-26). New York, NY: W.H. Freeman and Company.

Ennis, R. H. (1989). Critical Thinking and Subject Specificity: Clarification and needed research. Educational Researcher, 18, 4—10. dot: 10.3102/0013189X018003004

Ennis, R. H. (1996). Critical Thinking. Boston, MA: Kluwer Academic Publishers.

Ennis, Robert H. (1980). A Conception of Rational Thinking. In: Philosophy of Education 1979 , Jerrold R. Coombs, ed. (Bloomington, IL: Philosophy of Education Society), 330

Enoh, A.O. & Babarinde, K. (eds.) 2012. A Guide to Philosophical Research in Education. Ibadan; Stirling-Horden Publishers.

Everitt, N., & Fisher, A. (1995). Modern Epistemology: A New Introduction. New York, McGraw-Hill.

Facione, P. (1990). Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction, Research Findings and Recommendations, American Philosophical Association, Newark, Del.

Facione, P. A. (2000). The disposition toward Critical Thinking: Its Character, Measurement, and Relationship to Critical Thinking Skill. Informal logic, 20(1)

Facione, P. A. (2010). Critical Thinking: What it is and why it counts. Insight Assessment. Retrieved on December 2, 2024, from: http://www.insightassessment.com/home.html

Facione, P. A., Facione, N. C., & Giancarlo, C. A. F. (1996). The California Critical Thinking Disposition Inventory. Millbrae: California Academic Press.

Felton, M. K., & Kuhn, D. (2007). How do I know? The Epistemological Roots of Critical Thinking. The Journal of Museum Education, 32, 101-110.

Fenstermacher, G. D. (1994). The Knower and the Known: The Nature of Knowledge in Research on Teaching. *Review of Research in Education* 20, 3-56.

Freire, P. & Macedo, D. (1987). Literacy: Reading the Word and the World. Westport: Bergin and Garvey.

Freire, P. (1970). Pedagogy of the Oppressed. New York, NY: Continuum

Freire, P. (1970a). Cultural Action for Freedom. Cambridge, MA: Harvard Educational Review.

Friedel, C., Irani, T., Rudd, R., Gallo, M., Ricketts, J. C., &Eckhardt, E. (2008). Overtly Teaching Critical Thinking and Inquiry-based Learning: A Comparison of two Undergraduate Biotechnology Classes. *Journal of Agricultural Education,* 49(1), 7284

Freire, P. (2000). Pedagogy of the oppressed.(M. B. Ramos, Trans.). New York, NY: The Continuum (Original work published 1968).

Ganga, E. & Maphalala, M.C. (2016). Contributions of Constructivism to Teaching and Learning. In M.C Maphalala (ed.), Teaching and Learning Strategies in South Africa. (pp. 92-106). London: Cengage Learning EMEA.

Gibson, H. W. (1985). Critical Thinking: A Communication Model. Dissertation Abstracts International 46: 3235A.

Giroux, H. (2007). Democracy, Education, and the Politics of Critical Pedagogy. In P. McLaren & J. L. Kincheloe (Eds.), Critical Pedagogy: Where are we now? (pp. 1-5). New York: Peter Lang.

Glaser, R. (1984). Education and Thinking: The Role of Knowledge. American Psychologist, 39(2), 93-104.

Gunn, T., Grigg, L., & Pomahac, G. (2006). Critical Thinking and Bioethical Decision Making in the Middle School Classroom. *The International Journal of Learning,* 13 (5), 129-136.

Halpern, D. F. (2001). Assessing the Effectiveness of Critical Thinking Instruction. *The Journal of General Education,* 50(4), 270-286.

Halpern, D. F. (2014) Thought and Knowledge. Fifth edition. NY: Psychology Press.

Halpern, D. (1998). Teaching Critical Thinking for Transfer across Domains: Dispositions, skills, Structure Training, and Meta-Cognitive Monitoring. American Psychologist, 53(4), 449-455. https://psycnet.apa.org/doi/10.1037/0003-066X.53.4.449

Hammer, D., & Elby, A. (2003). Tapping Epistemological Resources for Learning Physics. *The Journal of the Learning Sciences,* 12 (1), 53-90.

Hofer, B. K. & Pintrich, P. R. (2002). Personal Epistemology: The Psychology of Beliefs about Knowledge and Knowing. New Jersey: Lawrence Erlbaum Associates.

Holma, K. (2012). Fallibilist Pluralism and Education for Shared Citizenship. *Educational Theory*, 62,397-409.

Holma, K., & Hyytinen, H. (2014). The Philosophy of Personal Epistemology. Equal contribution) Under review.

Ijaiya, N.Y.S., (2008). The Quality of Teacher Education in Nigeria. In: Emergent Issues in Nigerian Education, Ejiogu, A. and V. Onyene (Eds.). University of Lagos, Nigeria, pp: 230-250.

Ijaiya, Y., (1996). The Influence of Education Courses on the Attitude and Teaching Skills of Undergraduate/Part Time Students. *J. Educ. Focus,* 1: 99-105.

Isyaku, D., (2002). Teacher Education in the 21st Century. In: Anikweze, C.M., M.O. Ojo and A.A. Maiyanga (Eds.). Teacher Education in Nigeria, National Commission for Colleges of Education, Abuja.

Kaartinen-Koutaniemi, M., & Lindblom-Ylanne, S. (2008) Personal epistemology of psychology, theology and pharmacy students: a comparative study. *Studies in Higher Education* 33, 179-191.

Kaartinen-Koutaniemi, M., & Lindblom-Ylanne, S. (2012). Personal Epistemology of University Students: Individual Profiles. Education Research International 2012, 1-8. DOT: 10.1155/2012/807645 .

Kang, N., & Howren, C. (2004), Teaching for Conceptual Understanding. *Science and Children*, 42(1): 28-32.

Kennedy, M., Fisher, M. B., & Ennis, R. H. (1991). Critical Thinking: Literature Review and Needed Research. In L. Idol & B.F. Jones (Eds.). Educational Values and Cognitive Instruction: Implications for Reform (pp. 11-40). Hillsdale, New Jersey: Lawrence Erlbaum & Associates.

King P. M., Kitchener K. §. (1994). Developing reflective judgement: Understanding and promoting intellectual growth and critical thinking in adolescents and adults. San Francisco, CA: Jossey-Bass.

King, P. M., & Kitchener, K.S. (2004). Reflective Judgement: Theory and Research on the Development of Epistemic Assumptions through Adulthood. *Educational Psychologist* 39, 5-18.

Kneller, G. F. (1966). Logic and Language of Education. New York: John Wiley & Sons Inc.

Kuhn, D., & Weinstock M. (2002). What is Epistemological Thinking and why does it matter? In Barbara K Hofer & Paul, R. Pintrich (Eds.) Personal Epistemology. The psychology of Beliefs about Knowledge and Knowing. New Jersey: Lawrence Erlbaum Associates.

Lewis, A., & Smith, D. (1993). Defining Higher Order Thinking. Theory into Practice, 32(3), 131-137.

Lipman, M. (1988). Critical Thinking: What can it be? Resource Publication, Series 1 No. 1; New York, Cambridge university press.

Lipman, M. (1991). Thinking in Education. Cambridge, England: Cambridge University Press.

Lipman, M. (2003). Thinking in education (2nd ed.). New York, NY: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511840272

Lopez, S. J., & Snyder C. R. (2011). The Oxford Handbook of Positive Psychology (2nd ed.). New York: Oxford University Press.

Maclellan, E. &Soden, R. (2004). The Importance of Epistemic Cognition in Student-Centred learning. *Instructional Science,* 32, (3), 253-268.

Manjula, S. & Munichander, T. (2015). Need for Enhancing Critical Thinking Skills among Student Teachers in Colleges of Education: A Perspective. *Journal in Arts, Commerce, Education and Social Sciences*, 4(1), 305-307.

Mayanja, M.K., F.N. Adebua, M.K. Kabuye and K. Bwanga (2007). A Comparative Study of Makere University Graduates of the Faculties of Arts and Sciences. In: Research Evidence From Sub-Saharan Africa, Babalola, J.B. and BO. Emunemu (Eds.). Bolabay Publications, Ikeja, Nigeria.

McComas, W. & Abraham, L. (2004). Asking more Effective Questions. Retrieved from http:cet.us.ed/resources/teaching learning/docs/Asking Better Questions.pdf

McConnell, J. (2008). An Educational Strategy to improve Graduate Nurses Critical Thinking Skills during the Hospital Orientation Program. *The Journal of Continuing Education in Nursing*, 3, 193.

McPeck, H. (1990a). Critical Thinking and Subject Specificity: A Reply to Ennis. Educational Researcher, 19, 10-12.

McPeck, H. (1990b). Teaching Critical Thinking: Dialogue and Dialectic. New York: Routledge

Meyer, John R. (1976). Reflections on Values Education. Wilfrid Laurier University Press.

Missimer, Connie (1989 1994). "Why two heads are better than one. In: Philosophy of Education. James M. Giarelli, ed. (Normal, IL: Philosophy of Education Society), 388-402.

Moffett, J. (1968 1983). Teaching the Universe of Discourse. Boston: Houghton Mifflin Company, (1983 reissue).

Moon, J. (2008). Critical Thinking: An Exploration of Theory and Practice. London: Routledge

Msila, V. (2014). Critical Thinking in Open and Distance Learning Programmes: Lessons from the University of South Africa's NPDE Programme. *Journal of Social Sciences*, 38, (1), 33-42.

Murphy P. K., Rowe M. L., Ramani G., Silverman R. (2014). Promoting critical-analytic thinking in children and adolescents at home and m school. *Educational Psychology Review*, 26, 561-578.

Nassor, M. and A. Vitikainen, 2009. Philosophy in East Africa: Touards Critical Thinking, Professional and Democracy. http://www.h-net.org/announce/show.cgi?ID=168499

National Center for Education Statistics. (2007). The condition of education 2007 (NCES 2007-064). Washington, DC: US. Government Printing Office.

National Education Association. (2014). Preparing 21st Century Students for a Global Society: An Educator's Guide to the "Four Cs." Washington, DC: National Education Association.

Noddings, N. (2008). What does it mean to educate the whole child? *Educational Leadership*, 63, 8-13.

Norton, S. W. (1985). The effects of an Independent Laboratory Investigation on the Critical Thinking Ability and Scientific Attitude of Sudents in a General Microbiology Class. Dissertation Abstracts International 46:3232A. Retrieved from http://eric.ed.gov/?id=ED264291.

Odour, R. M. J. (2010).Research Methodology in Philosophy within an Interdisciplinary and Commercialised African Context: Guarding Against Undue Influence from the Social Sciences, Thought and Practice. *A Journal of the Philosophical Association of Kenya* 2 (1):87-118 .

Oyewumi K. A. (2019). Plato's Dialectics and Freire's Decodification for Critical Thinking Pedagogy in the Nigerian Educational Practice

Paul, R. (1992). Critical thinking: Basic questions and answers. In A. J. A. Binker (Ed.), Critical thinking: What every person needs to survive in a rapidly changing world. Rohnert Park, CA: Foundation for Critical Thinking.

Paul, R. (1995). Critical thinking: How to prepare Students for a Rapidly Changing World. Santa Rosa, Calif.: The Foundation for Critical Thinking

Paul, R. (2005). The State of Critical Thinking Today. New Directions for Community Colleges, 2005(130), 27-38.

Paul, R. W. (1993). Critical thinking: What Every Person needs to Survive in a Rapidly Changing World. (J. Willsen & A. J. A. Binker, Eds.). Santa Rosa, CA: Foundation for Critical Thinking.

Paul, R. & Elder, L. (1997). Critical Thinking: Implications for Instruction of Stage Theory. *Journal of Developmental Education,* 20(3), 34-35.

Paul, R. & Elder, L. (2008). The Miniature Guide to Critical Thinking: Concepts and Tools (5th ed.). Tomales, CA: Foundation for Critical Thinking Press.

Paul, R. (1990). Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World. In A. J. A. Binker (ed). Center for Critical Thinking and Moral Critique. Sonoma State University Rohnert Park. CA 94928.

Pintrich, P. R. (2002). Future challenges and Directions for Theory and Research on Personal Epistemology. In B. K. Hofer & Pintrich (eds.). Personal Epistemology: The Psychology of Beliefs about Knowledge and Knowing (pp. 121-144). New Jersey: Lawrence Erlbaum Associates

Reed, B. (2002). How to think about Fallibilism. *Philosophical Studies* 107, 143-157

Reed, J. H. (1998) Effect of a Model for Critical Thinking on Student Achievement in Primary Source Document Analysis and Interpretation, Argumentative Reasoning, Critical Thinking Dispositions, and History Content in a Community College History Course. Doctoral Dissertation. Graduate School University of South Florida, Tampa, Florida. 1-268.

Resnick, L. B. (1987). Education and Learning to think. Washington, DC: National Academies Press.

Ruggiero, V. C. (1990). Beyond Feelings: A Guide to Critical Thinking. (3" edition), Mayfield Publishing Company,

Ryle, G. (1949). The Concept of Mind. London: Hutchinson's University Library.

Saeger, K. J. (2014). The Development of Critical Thinking Skills in Undergraduate Students. Culminating Projects in Higher Education Administration. Retrieved from http://repository.stcloudstate.edu/hied_etds/1

Saiz, C. & Rivas, S. F. (2010). Mejorar el pensamiento critic contribuye al desarrollo personal de los jé6venes? In H. J. Ribeiro & J. N. Vicente (Eds.), O lugar da logica é da argumentagdo no ensino da Filosofia (pp. 39-52). Coimbra: Unidade I & D, Linguagem, Interpretacao e Filosofia.

Salomon, G., & Perkins, D. N. (1989). Rocky roads to transfer: Rethinking mechanisms of 2 neglected phenomenon. *Educational Psychologist*, 24(2), 113—142. https://doi.org/10.1207/s15326985ep2402_1

Scheffler, I. (1965). Conditions of knowledge.An introduction to epistemology and education. Glenview: Scott, Foresman and Company.

Scheffler, I. (1989). Reason and Teaching (first Published by Routledge and Kegan Paul, 1973) Indianapolis, IN: Hackett.

Scriven, M. & Paul, R. (2007). Defining Critical Thinking. The Critical Thinking Community: Foundation for Critical Thinking. Retrieved January 2, 2008, from http://www.criticalddnking.org/aboutCT/define_critical_thinking.cfm.

Shannon, L. & Bennett, J. (2012). A case study: Applying critical thinking skills to computer science and technology. *Information Systems Education Journal*, 10,(4), 41-48.

Siegel, H. (1988). Educating reason: Rationality, critical thinking, and education. New York, NY: Routledge

Slamato, S. (2014). Developing Critical Thinking Skills through School Teacher Training and Development Personnel' Model and their Determinants of Success. International *Journal of Research in Business Education*, 50, (2), 90-99.

Slavien, R. E. (2006). Educational Psychology Theory and Practice (8th ed.). Boston: Allyn & Bacon.

Smith, D. G. (1977). College Classroom Interactions and Critical Thinking. Journal of Educational Psychology, 69(2), 180-190. doi:10.1037/0022-0663.69.2.180

Smith, G. (2002). Are There Domain-Specific Thinking Skills? Journal of Philosophy of Education, 36,207-22

Snyder,c L.G. & Snyder, M.J.(2008), Teaching Critical Thinking and Problem Solving Skills. *Delta Pi Epsilon Journal*. 50: 90-99. (Google Scholar]

Stanny, C. (2016). Reevaluating Bloom's Taxonomy: What Measurable Verbs Can and Cannot Say about Student Learning. *Education Sciences*, 6, (4), 37-46.

Stanovich, K. E. (2010). Decision Making and Rationality in the Modern World. New York, NY: Oxford University Press.

Stedman N.L.P., Andenoro A.C. Identification of Relationships between Emotional Intelligence Skill & Critical Thinking Disposition in Undergraduate Leadership

Students. J. Leader. Educ. 2007;6(1):190-208. (Google Scholar]

Sternberg, R. J. (1986). Critical Thinking: Its Nature, Measurement and Improvement. New Haven, CT: Yale University. (ERIC Doc. No. ED 272 882).

Sternberg, R. J., & Bhana, K. (1986). Synthesis of Research on the Effectiveness of Intellectual skills Programs: Snake-Oil Remedies of Miracle Cures? Educational Leadership, 44 (2), 60

Stroupe, R. R. (2006). Fostering Critical Thinking throughout ESL Curricula. *TESL Report,* 39, (2), 42-46.

The World Bank (2011). Learning for all: Investing in people's knowledge and skills to promote development (Education sector strategy 2020). Washington, DC: Author. Retrieved from http://siteresources.worldbank.org/EDUCATION/Resources/ESSU/Education Strategy 4 12 2011.pdf

Tishman, S., & Andrade, A. (1996). Thinking Dispositions: A Review of Current Theories, Practices, and Issues. Cambridge, MA: Project Zero, Harvard University.

Tishman, S., Jay, E., & Perkins, D. N. (1993). Teaching Thinking Dispositions: From Transmission to Enculturation. *Theory into Practice,* 32(3), 147-153. http://dx.doi.org/10.1080/00405849309543590

Tsui, L. (1999). Courses and Instruction affecting Critical Thinking. *Research in Higher Education*, 40(2), 185-200.

Uwe, F. (2006). An introduction to Qualitative Research (H. Jalili, Trans.). Tehran: Nei.

Vacek, E. (2009). Using a Conceptual Approach with Concept Mapping to promote Critical Thinking. *Educational Innovation*, 1, 48.

Van Gelder, T. (2005). Teaching critical thinking: Some lessons from cognitive science.College Teaching, 53(1), 41-48. http://dx.doi.org/10.3200/CTCH.53.1.41-48

Vygotsky, L. (1978). Mind in Society. Cambridge: Harvard University Press.

West, E. J. (2004). Perry's Legacy: Models of Epistemological Development. *Journal of Adult Development* ,11, 61-70

West, K. S. (1994). Enhancing Critical Thinking in the Political Science Curriculum. *Dissertation Abstracts International* 55:725A.

Winter, D., McClelland, D., & Stewart, A. (1981).4 New Case for the Liberal Arts: Assessing Institutional Goals and Student Development. San Francisco, CA: Jossey-Bass work

Wubbels, T., Creton, H., Levy, J., & Hooymayers, H. (1993). The Model for Interpersonal Teacher Behaviour. In T. Wubbels & J. Levy 000(Eds.), Do you know what you look like? Interpersonal Relationships in Education (pp. 103-112). London, England Falmer Press.