

Developing Critical Thinking Skills in Students: A Mandate for Higher Education in Nigeria

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This paper is conceptualized to examine ways by which higher education in our own country (Nigeria) could be re-organized in such a manner that critical thinking skills could be imbued in the young learners, in order to make them problem solvers, thereby become assets rather than liabilities to the Nigerian society. In specific terms, the paper examines such issues as the concept of critical thinking, the importance of critical thinking to the nation, means of inculcating it in the students – particularly at the higher education level, and finally makes recommendations on how this could be effectively carried out.

Keywords: Developing, critical, Thinking, Skills, Students, Higher Education

The world is fraught with myriad of problems. These problems, created by man in his daily interactions with both his physical and social environments, are getting more and more complex by the day. According to Akinlaye, Mansaray and Ajiboye (1996), in any society, human life is a series of confrontations- confrontation with oneself, with other people, with societal institutions and with one's environment. These leave man with limitless problems to battle with in the society. The person who can successfully deal with these problems and issues and that can face them squarely with self-confidence is the one imbued with the right type of knowledge, skills and competencies required to solve these problems. Education definitely has an obligation and function to equip the learners with the mechanisms of dealing with the problems and emerging dilemmas, in order to make them live a happy and fulfilled life in the society. This is why the most challenging role of education generally today, is to equip the students with the ability and capability to deal successfully with the fast dynamic world and the unknown future. Obviously, current situations and problems may become obsolete when students of today face the world as adults tomorrow. One of the tools which education (particularly higher education) can perfectly provide for these youngsters is critical thinking which provides them with the needed skills to solve problems and issues in the environment regardless of their nature. More than ever before in Nigeria today, there is the need for commitment to the resolution of the ensuing societal problems through appropriate education. The individuals who seek to resolve issues and problems without the appropriate skills, abilities and proper understanding of the problems, often tend not only to behave irresponsibly and erratically, but also in ways that damage their own future and the human condition in the society.

Education, the world over, remains the most potent weapon of development. This is why in the National policy on education, it has been described as an instrument “par excellence” for effecting national development (NPE, 2004). Experts in the field of education have given various definitions to the term ‘education’. Suffice it to give a simple and functional definition of the term, as it constitutes one of the key words of the title of this paper.

Jekayinfa and Kolawole (2008), Otite and Ogionwo (2006) define education as “the process of development of an independent and integrated personality, which entails the training and acquisition of special knowledge, skills, attitudes and values needed by an individual to be responsible and which would enable him to contribute his own quota to the growth of the society of which he is a member”.

When subjected to proper analysis, it is discovered that this definition perfectly agrees with the driving force of Nigeria's philosophy of education which are:

- a. the development of the individual into a sound and effective citizen;
- b. the full integration of the individual into the community; and
- c. the provision of equal access to educational opportunities for all citizens of the country at the primary, secondary and tertiary levels, both inside and outside the formal school system (NPE, 2004).

However, the goals which the Nigerian nation is set to achieve through the provision of sound education to her citizens include:

- a. the inculcation of national consciousness and national unity;
- b. the inculcation of the mind type of values and attitudes for the survival of the individual and the Nigerian Society;
- c. the training of the mind in the understanding of the world around; and
- d. the acquisition of appropriate skills and the development of mental, physical and social abilities and competencies as equipment for the individual to live in and contribute to the development of the society, (NPE, 2004).

As it can be observed, the needs and aspirations of the nation have been aptly captured by these goals. This goes to say that, any form of education provided in any country must take cognizance of the needs of its people for that education to be seen to be functional. Education is a life-long process, which aims at imparting skills and knowledge needed to lead a purposeful life and equip the learners so as to be able to adjust to the remote and immediate environment in which he finds himself.

Therefore, if education must be seen as performing its expected roles in the society, it must provide the learner with the relevant body of knowledge, skills, attitudes and values that would make him an active and effective member of his society. One of such skills or abilities the learner is expected to be imbued with is critical thinking, which is the focus of this paper. It is believed that the learner imbued with critical thinking ability would be able to solve his personal problem (s), the problem (s) in his family and by extension, solve societal problem(s) in whatever sphere of life such problems may manifest. This way, the learner becomes a problem – solver rather than problem – creator. And these are the kind of individuals the society desires to raise, which is in consonance with the goals of education mentioned above.

Concept of Critical Thinking

Critical thinking features prominently in all the skills or abilities learners are expected to acquire through the type of education being provided. One, who cannot think, may not be able to solve even the minutest problem. We now live in a world of problems – social problem, economic problem, political problem, ethnic problem, religious problem, educational problem, Science and technologically related problems to mention a few. It only takes a sound mind, a mind imbued with reflective thinking, which can engage in deep analysis, to come up with causes of the problem at hand and generate possible solutions or options to arrive at a decision; to solve a or get out of the problem.

Critical thinking like the concept of education has been defined in so many ways by writers and researchers. According to Encarta (2009), critical thinking is regarded as a type of critical analysis has been described as “disciplined intellectual criticism that combines research, knowledge of historical context and balanced judgment:. It is the ability to think logically and analytically. In other words, criti-

cal thinking is the purposeful and reflective judgement about what to believe or what to do in response to observation, experience, verbal or written expressions or arguments. Thus, critical thinking involves determining the meaning and significance of what is observed or expressed, or concerning a given inference or argument, determining whether there is adequate justification to accept the conclusion as true. This definition agrees with the one given by Fisher and Scriven (1997) as: “skilled and active interpretation and evaluation of observations, communications, information and argumentation”. Critical thinking therefore gives due consideration to the evidence, the context of judgement, the relevant criteria for making the judgment well, the applicable methods or techniques for forming the judgement and the applicable theoretical construct for understanding the problem and the question at hand. Critical thinking employs not only logic but broad intellectual criteria such as clarity, credibility, accuracy, precision, relevance, depth, breadth, fairness and significance. In contemporary usage, the word “critical” may connote expressing disapproval, which is not always true of critical thinking. A critical evaluation of an argument, for instance, might conclude that it is valid.

Similarly, foundation for critical thinking (2009) has defined it 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. In its exemplary form, the foundation claimed that it is based on universal intellectual values of clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth and fairness.

In its simplest form, critical thinking may be conceived of as that mode of thinking about any subject, content or problem, in which the thinker improves the quality of his thinking by skillfully taking charge of the structures inherent in thinking, and imposing intellectual standards upon them.

It may be observed from the above that critical thinking entails those structures or elements of thought implicit in all reasoning such as purpose, problem or question – at - issue, assumptions, concepts, empirical grounding, reasoning leading to conclusions, implications and consequences, objections from alternative viewpoints and frame of reference. Critical thinking, being responsive to various subject matters, issues and purposes, is incorporated in a family of interwoven modes of thinking which include: scientific thinking, mathematical thinking, historical thinking, anthropological thinking, economic thinking, moral thinking and philosophical thinking (Foundation for critical thinking, 2009).

Critical thinking may be seen as having two components i) the skills to generate and process information and beliefs, ii) the habit of using those skills to guide behaviour, based on intellectual commitment. These components should be contrasted with:

- i. the mere acquisition and retention of information alone, this is because it involves a particular way in which information is sought and treated;
- ii. the mere possession of a set of skills, because it involves the continual use of them; and
- iii. The mere use of those skills (“as an exercise”) without acceptance of their results.

Consequent upon the foregoing, it may be summarized therefore that, critical thinking is self-guided, self-disciplined, self-directed, self-monitored and self-corrective thinking, which attempts to reason at the highest level of quality in a fair-minded way. Thus, people who think critically consistently, attempt to live rationally, reasonably and empathically. They are keenly aware of the inherent flawed nature of human thinking when left unguided. They strive to diminish the power of their egocentric and socio-centric tendencies. They use the intellectual tools offered by critical thinking such as concepts and principles that enable them to analyze, assess and improve thinking. They work

diligently to develop the intellectual virtues of intellectual integrity, intellectual humility, intellectual civility, intellectual empathy, intellectual sense of justice and confidence in reason. They realized that no matter how skilled they are as thinkers, they can always improve their reasoning abilities and that they can at times fall prey to mistakes in reasoning, human irrationality, prejudices, biases, distortions, uncritical accepted social rules and taboos, self interest and vested-interest. People who can think critically strive to improve the world in whatever ways they can and contribute to a more rational and civilized society. Even at that, they recognize the complexities that are inherent in doing so. They avoid thinking simplistically about complicated issues and strive to appropriately consider the rights and needs of relevant others. They also are aware of the complexities in developing as thinkers, and as such got committed to life-long practice toward self-improvement. The critical thinkers exemplify the Socratic principle: “*The unexamined life is not worth living*”, because of their belief that many unexamined lives together result in an uncritical, unjust, and dangerous world (Paul & Elder, 2008)

Importance of Critical Thinking to the Nation

Implicit in the few definitions of critical thinking attempted above is the importance of critical thinking to the individuals in particular and the nation in general. No doubt, everybody thinks, and it is our nature to do so. However, thinking is often casual and informal. Most of our thinking if left to itself is biased, distorted, partial, uninformed or down-right prejudiced. Yet the quality of our lives and that of what we produce, make or build depends precisely on the quality of our thought. Shoddy thinking is costly, both in money and in quality of life. This fact underpins the importance of critical thinking in the life of a nation and that of the individual. This is because critical thinking enables one to analyze, evaluate, explain and restructure his thinking, thereby reducing the risk of adopting, acting on, or thinking with a false belief. However, even with knowledge of the method of logical inquiry and reasoning, mistakes can happen due to a thinker’s inability to apply the methods or because of character traits such as egocentricism. Critical thinking includes identification of prejudice, bias, propaganda, self-deception, distortion, mis-information and so on. We live in a world of problems, and it is imperative for the individual, particularly students in the country to be equipped with the skills, abilities and capabilities to get their problems and those of the society solved, thereby, making the nation a worthwhile place to live in

Effecting Critical Thinking Skill in the Students Through Higher Education

One pertinent question that comes to mind at this juncture is: “how to develop critical thinking skills in students”. It is interesting to note that critical thinking ability can be inculcated in the learner at any point of the educational hierarchy (from primary school to tertiary institutions). What varies is the level of engagement at each level. Thus, while it is important to start developing critical thinking in the learner right from the primary school, it is better effected in students at the tertiary level. This is because students at this level are more mentally matured to cope with the rigours involved.

However, the question on how to develop the ability in students still remains. This is a methodological issue. What method do we adopt in order to effectively develop critical thinking in the students? As may be observed, critical thinking is about being both willing and able to evaluate one’s thinking, and could be effected through the teaching and learning of any subject on the school curriculum.

Developing critical thinking skills in students, involves learning the art of suspending judgement (for example, when reading a novel, watching a movie, engaging in dialogical/dialectical reasoning). To do this successfully, one should adopt a perspective rather than judgmental orientation; that is, avoiding moving from perception to judgment as one applies critical thinking to issues.

Critical thinking is based on concepts and principles, not on hard and fast rules. These concepts are exemplified in: identification of problem, rational inquiry, conceptual analysis, logical reasoning, nature of argument, identification of premises, and conclusion; while principles involved in critical thinking include: acquisition of knowledge through thinking, reasoning and questioning based on facts; learning what to think through how to think; judgment of effectiveness of argument through reflective thinking; critical thinking as a search for meaning and critical thinking as a skill that can be learned among others.

It employs not only logic (formal/informal), but broad intellectual criteria of clarity, credibility, accuracy, precision, relevance, depth, breadth and significance. Critical thinking is highly significant to learning. There are two phases to the learning of content. The first occurs when learners construct in their minds the basic ideas, principles and theories that are inherent in the content, for the first time. This is a process of internalization. The second phase occurs when learners effectively use those ideas, principles and theories as they become relevant in the learners' lives - known as the process of application. Good teachers cultivate critical thinking, that is, intellectually engaged thinking, at every stage of learning. The teacher questions the students often in a Socratic manner. The point here is that, the teacher who fosters critical thinking fosters reflectiveness in students, by asking questions that stimulate thinking which is essential to the construction of knowledge.

Each discipline adapts the use of critical thinking concepts and principles. The core concepts are embedded in the content of each subject. For students to learn content, intellectual engagement is crucial. All students must do their own thinking and construction of knowledge. Good teachers are aware of this, and therefore focus all teaching and learning activities in the class to stimulate the mind to master key concepts, principles and generalizations underlying the subject.

Critical Thinking: Mandate for Higher Education in Nigeria

It has been substantially demonstrated in this paper that critical thinking as an intellectual engagement belongs to the higher order level of cognitive abilities (application, analysis, synthesis and evaluation). A fact that makes it almost an exclusive function of higher education in some countries.

This explains why in United Kingdom school system, critical thinking is offered as a subject at the Advanced level. There was also a report of widespread skepticism about Universities' effectiveness in fostering critical thinking in California, USA. According to the study carried out by Thomas and Nelson (2010), critical reports by authorities on higher education, political leaders and businessmen, claimed that higher education is failing to respond to the needs of the students and that many of the graduates' knowledge and skills do not meet society's requirements for well educated citizens. The study concluded that:

- Faculty aspires to develop students' thinking skills, while in practice teachers aim at facts and concepts in the discipline at the lowest cognitive level, rather than development of intellectual or values.
- Faculty agrees that the development of students' higher order intellectual/cognitive abilities is the most important educational task of colleges and universities. These abilities underpin the students' perceptions of the world and the consequent decisions they make.
- Specifically, critical thinking – the capacity to evaluate skillfully and fairly the quality of evidence and detect error, hypocrisy, dissembling and bias is central to both personal success and national needs”, among others.

As it were, while this report essentially raises questions about the standard or level of performance of higher education with regards to the inculcation of critical thinking ability in students, it is

clear that it is the responsibility of higher education to provide that needed skill, Nigeria's higher education sub-sector, is not an exception.

Similarly, a team of researchers namely: Abrami, Bernard, Borokhovski, Wade, Surkes, Tamim and Zhang (2008) carried out a meta-analysis study of 117 different studies of pedagogical intervention in the area of critical thinking involving a total of 20,698 participants in Canada. One of the questions addressed in the analysis was: what types of pedagogical intervention were most effective in supporting students to develop critical thinking skills? The study identified four approaches to the teaching of critical thinking namely:

- General approach- critical thinking being taught separately from subject area content.
- Infusion approach- critical thinking is infused into subject area content. Subject area curricula have explicit objectives in the area of critical thinking, alongside the subject area objectives.
- Immersion approach- instructions in the subject is thought-provoking, but critical thinking principles are not made explicit.
- Mixed approach- a combination of a general approach and either infusion or immersion. Students receive instruction in critical thinking in the context of subject matter, with a separate course aimed at teaching general principles of critical thinking.

Findings of this study showed that:

- The immersion method was the least effective
- The mixed approach was the most effective, closely followed by the infusion approach.
- Students' learning outcomes were significantly improved where teachers received professional development related to the teaching of critical thinking skills.
- Students' collaborative work resulted in small but statistically significant advantage in critical thinking.

While this author aligns with the findings above, the study however failed to make categorical statement on classroom strategies that may help develop critical thinking skills in students. This is where the concepts and principles of critical thinking highlighted earlier are highly relevant and useful. At the classroom level, students are made to identify the problem to address, which may come from any sphere of our lives. This step is closely followed by rational inquiry into the problem and subsequent generation of possible alternative means of solving the problem. A step that actually calls for conceptual analysis of issues involved and logical reasoning, supported by sound arguments to enable students get to the fact of the case, thereby leading to the premises on which sound conclusion(s) are made. In the process, students acquire more knowledge through thinking, reasoning, and questioning based on facts and learning "what to think" through "how to think" and assessing the effectiveness of arguments through reflective thinking. This way, students could have acquired the necessary skills in critical thinking to enable them solve personal problems, those of the community and the nation at large.

Conclusion and Recommendations

From the discourse above, it can be concluded that since critical thinking is a precursor to personal success, national peace, progress and development, it should be addressed with all the seriousness it requires by all stake holders for the common good of all. To this end, it is hereby recommended that:

- i. Critical thinking is introduced as a separate subject or course in our tertiary institutions.

- ii. Teachers should be encouraged to operate more in classroom, at higher level of cognition than the lower level.
- iii. Teachers should adopt suitable methods of teaching such as Socratic method, Inquiry method, problem-solving method etc. that are consistent with the development of critical thinking skill in students.
- iv. Both teachers and students should imbibe the attitude of intellectual empathy and intellectual humility, culminating in broad-mindedness needed for the development of the skill.
- v. It is not just enough to acquire the knowledge and the skills involved in critical thinking, learners should be encouraged to apply such skills in their daily lives.

In summary, according to Glasser (1941) ability to think critically involves three things namely;

- An attitude of being disposed (that is, the state of the mind regarding something) to consider in a thoughtful way the problems and subjects that come within the range of one's experiences;
- Knowledge of the methods of logical inquiry and reasoning; and
- Some skills in applying those methods

Critical thinking calls for a persistent effort to examine any belief or any form of knowledge in the light of the evidence that support it and the further conclusions to which it tends

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