

Rethinking Teacher Education towards Producing Critical and Creative-Minded Educators in Nigeria

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Abstract. This paper discusses the training of the Nigerian pedagogue. It contends that the curriculum used to prepare the Nigerian pedagogue must be enriched with the capacity to produce critical and creative teachers who will, in turn, produce critical and creative Nigerians. This will be beneficial to the education system, for the latter will henceforth be managed by stakeholders who possess the ability to innovate the system. Such a system will automatically be rid of robots and fuddy-duddies. The paper suggests three options to rejuvenating the teacher education curriculum: infusing a new course on ‘Logic and Aesthetics’ into the teacher education curriculum; strengthening the philosophy of education component of teacher training courses and making it core; modifying the existing general course on ‘Philosophy & Logic’ into ‘Philosophy, Logic & Aesthetics’; and enriching the content in such a way that it can instil both criticality and creativity.

Keywords: Teacher-training; Curriculum innovation; Reform.

1 Introduction

The regular contemporary Nigerian youth seems to lack critical and creative mind-set. Ogunyemi (2016) observed that the youth have not demonstrated enough critical and creative thinking in their daily activities, and this is responsible for the heavy criticisms levelled against the contemporary education system in Nigeria. The youth appears to lack creative and critical mind-sets because he is being taught by a teacher who seems to lack it. It has been said times without number that ‘no



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education system can rise above the quality of its personnel' (FGN in NPE, 2013), that is to say, a student may not be able to rise above the quality of his teacher. The teacher's non-critical mindedness is evidenced in his inability to challenge the system, effect any substantial change and make his unique contributions to the system he/she works for. With such type of teachers, educational practices remain 'as it were in the beginning, it is now, and ever shall be, world without end'. I had somewhere referred to such teachers as education robots (Akinsanya, 2015). It is evidenced in their inability to manoeuvre teaching methods and improvise instructional materials as teaching aids. For instance, if you visit schools where student-teachers are engaged for teaching practice, one would hardly see them bringing any ingenuity into the use of instructional aids; what you see at best are carelessly prepared cardboards, and that is all. The qualified teachers, who are expectedly cooperating-teachers to these student-teachers, do not even see any problem with what is being done. This is the tragedy. Little wonder why teachers are hardly invited to national seminars on education where policies affecting them and the entirety of education are being formulated. Even if invited, how many of these teachers have the capacity to effect a meaningful and reasonable change to the status quo? This is the challenge.

2 Statement of Problem

Arising from the above background, there is an urgent need to revise the curriculum predisposed to the Nigerian student. To make the student develop a critical and creative mind-set needed to surmount the challenges of the modern times, the training of such a student must be infused with subjects which could foster criticality and creativity. But in the first instance, if the curriculum in actual terms features such subjects, and the teachers to handle the latter are far from possessing the critical and creative spirits, efforts would have been futile. No wonder Akinsanya (2008) said that the best educational programme stands thwarted if its handlers are ill-equipped. Sequel to the fact that the teacher is very key in the project of curriculum-change and consequential attitudinal change, this paper focuses attention on the training and preparation of the Nigerian teacher. It considers the training of the teacher for the acquisition of critical and creative habits as foremost. The paper attempts the possibility of tinkering with the curriculum predisposed to the Nigerian teacher at either the National College Education level, or University level, so as to make the Nigerian teacher *ipso facto* a critical and creative mind. Such a mind will, *ceteris paribus*, possess the ability and desirability to utilise a curriculum which instils criticality and creativity on the consciousness of the Nigerian child.

3 Critical Mindedness

Critical mindedness is the state of a mind capable of engaging in critical thinking. Critical thinking, in this case, is different from any other usual or regular form of thinking; it refers to thinking in its deepest quality. Thinking becomes critical when it is reflective and rigorous; when it satisfies some standards, some rules or some criteria of acceptance. No wonder Heidegger (cited in Ogunyemi, 2015) had defined critical thinking as a mental process of subjecting issues to rigorous questioning and analysis. For Ennis (1987), critical thinking is a reasonable reflective thinking focussed on deciding what to believe and do. Paul (1990) opines that critical thinking is the ability and disposition to critically evaluate beliefs, their underlying assumptions, and the worldviews in which they are embedded. Oladipo (2011) considers critical thinking as an activity which involves a careful examination of claims and counter claims with a view to determining whether or not such claims and counter claims are sustainable. Lipman (1991) classifies critical thinking as that form of thinking which facilitates judgement for it relies on criteria; it is self-correcting, and it is sensitive to context.

In all the definitions, one could infer two things: that critical thinking indicates the ability and the disposition to subject any form of thinking into some rigorous rules or tests. This inference tallies with the position of Bailin & Siegel (Blake, Smeyers, Smith & Standish, 2013) that critical thinking involves both the ability to assess the probative strength of reasons and the disposition to do so. In the first instance, possessing the ability means one has the formal training or innate possession of connecting assertions with the rules of acceptance. Such connection, whether gotten innately or through training, ensures that any thinking that passes through the test of accepted rules, is considered as critical. In other words, any claim that cannot pass the rigours of rules of acceptance cannot be regarded as critical thinking. Thus, critical thinking is purely evaluative and the rules it adapts to are technically provided and studied in Logic which is a branch of philosophy. This is why Ogunyemi (2016) construed critical thinking as the ability to establish a proposition on the basis of logic and analysis.

In Logic, rules separating valid reasoning from invalid ones; sound arguments from unsound; and detects errors in reasoning technically called fallacies, are given utmost consideration. We shall return to this shortly. The second aspect of our deduction from the definitions proffered by scholars is the disposition of critical thinking. It is one thing to have the ability to do critical thinking; it is another thing to be willing to use the ability. Such disposition, according to many critical theorists, may include open-mindedness; fair-mindedness; independent-mindedness; inquisitiveness; and mutual respect in group inquiry (Blake, Smeyers, Smith & Standish, 2013). Critical thinking thus involves two principal things: Ability and Disposition to use the former. From the foregoing, therefore, critical mindedness can be conceptualised as the capacity of a mind to have the ability and the disposition to engage in critical thinking.

4 Logic and Critical Mindedness

Logic, coined from the Greek word – *logos* – meaning ‘reasoned discourse’, is simply an art of correct reasoning. Wallace (1977) defines it as the art of sound discourse; the science of good reasoning; and the science of the laws of thought. Marcel (in Onyeocha, 1996) describes it as an intellectual habit or virtue that strengthens the mind for its characteristically human operation – that is, reasoning or understanding and judgement. Logic is a study which enhances clarity of thoughts and systematization of principles needed for philosophical reasoning. It is a study which analyses the nature of correct reasoning in accordance with some logical maxims.

Logic helps people to make opinions well-stated, clear, well-articulated and properly backed up with rational, consistent, coherent, precise and cogent propositions. Logic, the art of reasoning, and a branch *cum* tool of philosophy, ensures and facilitates the attainment of persuasion, conviction and criticality. When someone supports a belief by giving a reason for accepting the belief, he or she has given an argument. Setting forth arguments is the most basic philosophical activity and is one of the activities which distinguish philosophy from merely having opinions. For instance, if I say “Education graduates are pedagogically trained. Jenkoku is an education graduate. So, Jenkoku is pedagogically trained”.

Here, one has not only stated a case, but one has given good reasons for my case. It is logic that is primarily concerned with the relation between the beliefs expressed and the reasons given as evidence for them. Since not all reasons are good, logic determines if the reasons given are good enough to sustain our beliefs. Logic is thus concerned with the relation between evidence and conclusion. It is *the art of sound and critical reasoning* and it helps in making valid arguments, consistent, coherent and non-contradictory propositions.

Humanity is notorious for its cleavage to assumptions about myriads of events or phenomena which we experience in the world. Some of such assumptions are grossly unfounded, and thus, capable of misleading people. The study of logic is instrumental in the separation of these assumptions from clearly thought-out and well-founded convictions about realities in life. It therefore enhances critical attitude towards assumptions and other experiential aspects of reality (Olusanya, Akinsanya & Osiyemi, 2016). In this vein, Logic exposes the student to rules validating reasoning, such as the *rules of inference and replacement*. Some of these rules are: Modus Pollens, Modus Tollens, Conjunction, Addition, Simplification, Absorption, Hypothetical Syllogism, Conjunctive Syllogism, Disjunctive Syllogism, Simple Constructive Dilemma, Complex Constructive Dilemma, Simple Destructive Dilemma, Complex Destructive Dilemma, Association, Commutation, Double Negation, Exportation, Distribution, Transportation, Tautology, Material Implication, Material Equivalence, De Morgan. When arguments fail to conform to the above stated rules, they fall into the category of errors in reasoning which are classically regarded as *fallacies*. These errors could be as a result of our state of mind, or are deliberately made to score a point or to avoid being defeated in arguments.

Logic helps to detect such errors and avoid them in our reasoning. Fallacies are errors in reasoning which are capable of misleading people. An argument may appear sound or plausible, but in actual fact defect from the rules of reasoning or inference. Such an argument is termed fallacious; that means the reasoning process which led to the formulation of the argument is faulty. There are formal and informal fallacies. Formal fallacies occur in a deductive argument when we wrongly assert or claim an implication or logical relationship when it does not exist in an argument. They are errors resulting from misapplication of logical principle. These are: Fallacy of affirming the consequent (which occurs when the rule of inference called Modus Ponens is violated) and Fallacy of denying the antecedent (which occurs when the rule of inference called Modus Tollens is violated). The informal fallacies, on the other hand, are not based on any prescribed logical form; rather, it is about the content of an argument, which though incorrect, is nonetheless persuasive. These are: ambiguity, relevance and presumption. The types of fallacy of ambiguity are equivocation, amphiboly, composition, division, and accent. Fallacies of relevance are: Appeal to Force (*Argumentum ad Baculum*), Fallacy of Attacking the Person (*Argumentum ad Hominem*), Tu quoque, Appeal to Authority (*Argumentum ad Verecundiam*), Appeal to Pity (*Argumentum ad Misericordiam*), Appeal to popular opinion (*Argumentum ad Populum*), Argument based on Ignorance (*Argumentum ad Ignorantiam*), Fallacy of Irrelevant Conclusion (*Ignoratio elenchi*), Red Herring. Fallacies of presumption are: Complex Question, Fallacy of False Cause, *Petitio Principii* (Begging the Question), Accident, Converse Accident (Oladipo & Akinsanya, 2006).

By and large, logic helps in making opinions well-stated, well-articulated and properly backed up with clear, rational, consistent, coherent, precise, rigorous and cogent. More importantly, it helps the student and the teacher to develop a critical and probative mind-set. Its study fosters critical thinking which inadvertently result to creative mindedness. This is why it is always recommended for students of law, political science, management, among others. It also explains the rationale behind its inclusion in national policy on education, as one of the general studies that every Nigerian university student must pass through before graduation (FGN in NPE, 2013). But the question here is: how have management of universities and the handlers of the course used it to foster the virtue of criticality in the Nigerian child? Has the course really been taught in a way that the Nigerian student could become critical minded? We shall return to these questions shortly.

5 Creative Mindedness

Creative mindedness is the capacity and disposition of a mind to engage in creative thinking or creativity. It is the ability and willingness of a mind to produce either of two things – something from nothing, or something from something. In the former case, the mind produces something entirely new, original, novel and radically

different from the status quo. This was the kind of minds that led humanity to new orientations about education; new methods of teaching; new imaginations on educational processes and new theories, new perspectives, new presuppositions. Through creative minds, the idea of schooling itself was birthed by Greeks and Africans along the Nile; the Sophists invented peripathy; Socrates originated dialectics; Aristotle became hypothesized and later became the precursor of experimental researches (in education); Pestalozzi produced instructional materials and discouraged rote learning; Froebel delivered play method of teaching; Dewey projected a pragmatic/functional education and project method; Montessori invented a method of teaching which propels the child towards self-reliance; *inter alia* (Akinsanya, 2015).

The second creative mind produces something from something. In this case, rather than producing something entirely new, there is a tinkering with the 'existing product'. It is a form of modification or re-branding of the *status quo*. Such re-branding comes to play in Kilpatrick's renaming of Dewey's problem method to project method; refashioning of Rousseau's and Pestalozzi's naturalism to Froebel's Kindergarten schooling, *etcetera*.

Whether it is in the first sense or second sense, the creative mind is always generative, innovative, imaginative and inventive. It is, in the words of Torrance, an adventure into being:

sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying difficulties, searching for solutions, making guesses or formulating hypotheses on deficiencies, testing and retesting these hypotheses and possibly modifying and retesting them, and finally communicating the result (Torrance, 1962).

6 Aesthetics and Creative Mindedness

What is the relationship between Creative mindedness and Aesthetics? The answer to this question is very simple, but before such questions is answered, we need to attempt a definition of aesthetics since the other concept, creative mindedness has been duly explored. Aesthetics, etymologically, is derived from a Greek word – *aesthetikos*, which means perception. It is the philosophical study of art and of value judgments about art and of beauty. It is an aspect of philosophy which studies the works of art; the process of producing and experiencing art. It also considers certain aspects of nature outside the field of art, especially those which can be considered in terms of beauty or ugliness in form or quality. Aesthetics, generally, studies values in relation to beauty and appreciation.

Aesthetics and creativity are so connected and intertwined. Beyond the appreciation of art, the study of aesthetics predisposes the mind of the learner to creativity, innovation and improvisation. Brinkmann & Sriraman (2008) of the University of Muenster, Germany and University of Montana, USA respectively, in

an article titled *Aesthetics and Creativity: An exploration of the relationships between the constructs*, examined the relationship between aesthetics and creativity among working mathematicians in USA and Germany. They discovered that aesthetics is an important component of mathematical creativity. According to them, many working mathematicians conveyed a reciprocal relationship between aesthetics and creativity, particularly when mathematical results and proofs are arrived at with considerable strain and stamina. Their research was quantitative, with the use of research questionnaire and interview guide. Among some research questions set up for the study conducted by Brinkmann & Sriraman (2008), *Research question III: Is an aesthetic appeal necessary for creative work?* Generated results which confirm that the aesthetic appeal plays a crucial role in the creative work of contemporary mathematicians. The researchers found out that the aesthetic component need not necessarily derive or be connected to a theorem or proof that the mathematician is currently working on, which can more often be one of sustained trial and frustration, but aesthetics is often present in appreciation of other results, reading elegantly presented material in books as well as listening to lectures from peers. They also observed that even though aesthetics had been relegated by some mathematics education researchers as a small component of the affective dimension of learning, in actual fact, it intertwines with both the cognitive and affective components, and it is an important aspect of creativity, as indicated by their study. In support of Brinkmann & Sriraman (2008), Sinclair (2009) argues convincingly that aesthetics is the missing gap in numerous failed attempts at motivating students. Given the numerous reform movements in mathematics education that have occurred in many parts of the world, and the call to view school students as budding mathematicians and to get them engaged in mathematical thinking, it is ironic that aesthetics has not received more attention by the community of mathematics educators. Brinkmann & Sriraman thus conclusively made a case for emphasizing the aesthetic dimension in mathematics education in particular, and education in general.

Another scholar, Sawyer (2000) made explicit the relationships between improvisation (as form creativity) and aesthetics by leaning on Dewey's work on *art as experience* and Collingwood's work on *art as language*. He argued that at the core of both Dewey's and Collingwood's theories, is a theory of art as improvisation. By focusing his discussion on improvisation, he brought out aspects of Dewey and Collingwood which have been neglected in most commentaries. Collingwood and Dewey both made explicit the implications of their theories: *that all language is aesthetic*. Collingwood for example stated that "every utterance and every gesture that each one of us makes is a work of art" (cited in Sawyer, 2000), and he acknowledged that his theory of art entails that many everyday activities are aesthetic. Basically, for Sawyer, both Dewey and Collingwood have developed theories of art as improvisation by focusing on creativity *via* aesthetics.

The knowledge of aesthetics, by and large, helps to bring out learner's creativity and makes him assess things more intelligibly. It helps to develop learner's mind towards sensibility and creativity. It prods the learner to develop the capacity to

improvise, to invent or re-invent the wheels, to create or re-create, to mould or re-mould, and to give birth to what had not hitherto been in existence. Aesthetics simply initiates the learner into becoming creative-minded.

7 Fostering Critical and Creative Mindedness in Nigerian Pedagogues

The Federal Government of Nigeria in the National Policy on Education (2013) presents so many goals ranging from the pre-primary level of education to tertiary level, and of course teacher education sector. It would appear that to develop critical and creative capacities in the child assumes the most important goal among others. Even in other climes, as indicated by some scholars in their various works, the above goal appears to be the primary aim of education. Bailin & Siegel (2013), for instance, considers critical thinking as a fundamental aim and overriding ideal of education. In fact, for the duo, educational activities should be designed and conducted in such a way that the construction and evaluation of reasons (in accordance with relevant criteria) is paramount throughout the curriculum. Their position does not reduce other aims and ideals of education as unimportant, but that none outranks the primary obligation of educational institutions and efforts to foster critical thinking. Another scholar, Scheffler (cited in Bailin & Siegel, 2013) asserts that critical thinking is of first importance in the conception and organisation of educational activities. All efforts dissipated in the school should be geared to producing a critically-minded individual. There is wisdom in the point raised by these scholars – an educated mind who does not possess the acumen to sieve the grains from the chaffs; to remove sense from nonsense; to identify facts from fables; to separate sound ideology from mere propaganda; to split truth from falsehood, and valid reasoning from fallacies – is *ipso facto* a caricature of education. In fact, such a mind is a colossal and monumental embarrassment to education. An educated person should be critically minded and critically alert.

Siegel (1988) offers four reasons for the rationale behind making the goal of critical mindedness at the heart of educational activities. The present writer adopts these reasons; they are presented thus:

- First, striving to foster critical thinking in students is necessary if they are to be treated with respect as persons. Treating students as persons is a moral obligation which requires that they are well trained to competently think for themselves and make good decisions on all aspects of their lives. (This is actually the main goal orchestrated in existential education - confer Akinsanya, 2015). To be able to do this, it requires some judgement in accordance with the criteria governing critical thinking. Hence, treating students with respect requires fostering in them the abilities and dispositions of critical thinking.
- The second reason for regarding critical thinking as a fundamental educational objective entails education's generally recognised task of preparing students for

adulthood. Such preparation should not be understood in terms of preparing the student for pre-conceived roles, but for self-sufficiency and self-direction.

- The third reason concerns the role critical thinking plays in the rational traditions that have always been at the centre of educational activities and efforts – mathematics, science, literature, art, history, etc. These traditions rely heavily on critical thinking; mastering or becoming initiated into the tradition is basic to the fostering and enhancement of critical thinking.
- The fourth and last reason, for Siegel, involves the place of critical thinking and analysis in democracy. Since democracy is Nigeria's chosen ideology as reflected in the 1999 constitution and even in the National Policy on Education (2013), patterned after Siegel's country's version (America), educators must be committed to the fostering of the abilities and dispositions to critical thinking. Democracy can only flourish when citizens are trained to reason well concerning political issues and matters of public policy, scrutinize the media and meet the demands of democratic citizenship, many of which require the abilities and dispositions constitutive of critical thinking.

So much talk on critical thinking, let us quickly consider creative thinking. Why do we need to foster the habit of creative thinking in the Nigerian pedagogue? There are of course so many reasons, but the writer will highlight only three, for page constraints.

- First, some theories of learning, some methods of teaching, some educational practices, some policies and styles of managing education, handed over by our forebears are fast becoming obsolete and inadequate given the complexity and sophistication of the present generation. It will take some creative minds to replace the afore-mentioned with new order which will make education readily useful and useable for coping with today's challenges, peculiarities and idiosyncrasies. The Nigerian pedagogue has no choice than to fit in.
- Second, at the moment, there are many innovations emanating from other climes, especially from Asian classrooms, on how to better engage the child in the classroom. The Nigerian pedagogue cannot afford to be left out; he cannot afford to remain as a consumer of innovations in pedagogy from other teachers in other world. He must also produce something that others can benefit from. He has to be creatively minded.
- Third, a creative mind helps the teacher in the area of improvisation, as demonstrated earlier on. Such improvisation is highly needed in the area of teaching aids or instructional materials. Akinsanya (2008) has pointed out that for easy and better teaching to meet up with faster and deeper learning, every teacher worth the name, must employ the use of instructional materials in the classroom. As important as these materials are to teaching-learning interaction, they are not readily available and affordable given the economic situation in Nigeria. This is where improvisation comes in. The Nigerian pedagogue must manage the scarce resources at his disposal and make some improvisations in

the realm of teaching aids. This can be readily done through commitment to creative mindedness.

By and large, then, to make a child become critical and creative minded, the handler, that is, the pedagogue, has to first and foremost imbibe the two habits, *nemo dat quod non habet* – no one can give out what he/she does not have. When you see a brilliant student, just look for the brilliant teacher who is responsible. This is the crux of this paper – that the pedagogue has to be trained to be critically minded and creatively minded. Such a critically and creatively minded pedagogue could thereafter foster the dispositions and the skills in the Nigerian child, who would later take the Nigerian society to the next level.

8 Infusing Criticality and Creativity into Teacher Education via ‘Logic & Aesthetics’

The question which is inevitable at this point is a query on the role Philosophy & Logic has been playing in fostering the spirit of criticality and possibly creativity on the Nigerian University graduate. The Federal Government of Nigeria in the National Policy-document on Education (2013) indicates that every Nigerian university student shall be made to pass through philosophy and logic as a general study (GNS), to develop in the child some critical capacities. Despite this inclusion, can we confidently say that the Nigerian graduate, who must have passed through such a course, is *de facto* critically and creatively minded? The answer to this question is an emphatic NO. Experience and observations have shown that most of our graduates lack the habit of criticality and creativity. This thus shows that there is a problem which needs to be arrested and addressed headlong. To address this problem, the present writer proposes the following options:

- Infuse an entire new course ‘Logic and Aesthetics’ into the curriculum of Faculty/Institute/College of Education students. This course shall be meant for only education students who have been hitherto in this paper referred to as prospective teachers. The content of ‘Logic & Aesthetics’ shall comprise items which could predispose the education students to acquiring the habits of critical and creative mindedness. Such course will be made mandatory for all education students at a much matured level, say 300level, and taught only by professionals in training and experience.
- Second, the infusion could again be done by strengthening the existing course on philosophy of education through enriching the course, and making it independent and mandatory. The recent Benchmark Minimum Academic Standards for Undergraduate Programmes in Nigerian Universities, published by National Universities Commission (2007), which merged philosophy with other foundations courses (sociology of education, history of education, psychology of education and comparative education) into Foundations 1 & 2

has not helped matters at all. Indeed, the attempt to reduce the number of subjects in the training of education graduates is lofty, but fraught with some challenges. In the above mentioned merge, for instance, justice is not done to the discharge of each of the various subjects that had been collapsed. Incidentally, these collapsed subjects are so germane to the training of a thorough-bred educator. Hence, with the present merger, philosophy of education is not handled, due to time constraint, in a way that the prospective teacher could imbibe the critical and creative spirit which is possible *via* enriched course content.

- Modifying the existing general course on ‘Philosophy & Logic’ into ‘Philosophy, Logic & Aesthetics’, and enriching the content in such a way that it could instil criticality and creativity in every student. This means that the nomenclature should be modified to include aesthetical studies; and the content should also be modified to reflect items which are logical and aesthetical, and which could foster the habit of criticality and creativity on the consciousness of the prospective teacher in particular, and all students in general.

The above alternatives are proposed for the stakeholders in Nigerian education to ponder upon and decide which of the choices is most preferable, considering some peculiarities and idiosyncrasies.

9 Evaluation

The Nigerian child is not a computer meant to store information. He ought to be trained to become critical about the information given during teaching-learning interaction and elsewhere. This helps him to process such information rather than merely storing it. The child also needs to be creative-minded so as to replace the old order and showcase innovations in the midst of innovations from other nations. It was however discovered in this write-up that the child cannot become critical and creative minded if his teacher has not first internalised and imbibed the two habits. The Nigerian teacher has to be trained to be critically minded and creatively minded. Such a critically and creatively minded teacher could subsequently inculcate the habits in the Nigerian child. This paper thus concluded by considering the options that could be used to infuse criticality and creativity in the mind-set of the Nigerian pedagogue and of course subsequently, the Nigerian child.

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