



National Policy on Education: The Need to Inculcate Logical/Critical Ability to Enhance Tertiary Education in Nigeria

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Abstract

One of the most assurances against human illusion, dogmatism and false sense of security is the application of logic and critical self-evaluation. Logical reasoning is, therefore, necessary for personal development, so much so that it is a compulsory first course in tertiary institutions of learning around the world, Malaysia and Nigeria inclusive. The goal is that where ever one finds himself, he should be able to reflect on all issues and, thereby, reduce the proclivity to error—be it that of omission, commission or of uncritical acceptance of any raw feeds. To this end, this paper adopts the critical methodology and evaluates the Core Curriculum and Minimum Academic Standards for the Nigerian University System (CCMAS, 2022) and points out its obvious and inherent deficiencies. It articulates the nature and place of logic/critical thinking and thus argues that imbibing the principles of logical/critical reasoning by the undergraduates around the world would enhance their critical reasoning ability much needed in contemporary Nigeria. The essence of this was to advocate the inclusion of courses in logic in every department of study in every higher educational institution (University) so as to make the subject an easy grasp within the setting for social relevance.

Keywords: Education, critical reasoning, logic, national policy, undergraduate.

I. Introduction: Curriculum, Education and the Nigerian Experience

Education is the “...transmission of knowledge by either formal or informal methods...often thought of in terms of schooling (formal education), effective-training for the individual’s role as both a group member and an autonomous person is a constant process” (Hogan, 2006, 135). Thus, education is part of the broader theme of socialization. Aniobi C. S. et al (2021) observed that governance crisis in Nigeria is an institutional problem that would require structural and reorientational approaches to diagnose in other to enable every sector to work efficiently. A major goal or function of educative process (socialization) is to pass knowledge, skills and values to individuals and from one generation to another in order to preserve/discover or learn essential trends crucial to the survival/development of society. Anyone undergoing studies in higher/tertiary institution is commonly referred to as “undergraduate”. Both the ruled and the rulers need constant education for effective management of statecraft. More importantly, education is “a stimulus for

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creative thinking and action which accounts in...powerful stimulus for further innovation” (Hogan, 136). Commonly, education is the main goal for setting-up any school, college, polytechnic, university, including any other facility “essential to mental moral and physical development” (Garner, 1999, 592). The scope of present article shall, however, be limited to tertiary (higher) education in Nigeria, taking the university system as a guide. Yet, every educational system has its philosophy enshrined in some curriculum.

Every curriculum “is a standard-based sequence of planned experiences where students practice and achieve proficiency in content and applied learning skills.... A curriculum is the central guide for all educators (teachers) as to what is essential for teaching and learning, such that every student has access to rigorous academic experiences” (NNECU, 2024). This definition emphasis three aspects: A curriculum is: 1. Standard-based; 2. Sets the essential guide/content for teaching; and 3. Sets the pace for independent, rigorous and critical ability. A curriculum, thus, sets the educational mission, content and road-map. Moreover, a curriculum must reflect the values and national aspirations of every state; one short of such standard would be categorized deficient. One would, nevertheless, wonder how the Nigerian experience fares.

Broadly, Nigerian education system initiates education spread at four (4) levels: the elementary (primary), two-categories of high school (secondary), and higher/tertiary institutions, otherwise known as the 6-3-3-4 system, introduced to Nigeria in 1983 (Uwaifo and Uddin, 2009), and later modified to 9-3-4 system in compliance with the Millinium Development Goals by 2020. This means 6-year duration at elementary level; secondary level, split into two 3-year parts: 3-year Junior Secondary School (JSS), and 3-year Senior Secondary School (SSS, leading to the West African Examinations/School Certificate, WASEC/WASC or National Examinations Council/Certificate, NECO or National Board on Technical Education, NABTEB) (Uwaifo and Uddin, 2009). Current Nigerian university curriculum is contained in the *Core curriculum and Minimum Academic Standards (CCMAS) for Nigerian Universities (2022)*.

The general philosophy of Nigerian tertiary (university) education is encapsulated in the foreword to the CCMAS, 2022, as follows:

In furtherance of the “change” mantra of the present administration, I published a roadmap to guide my Ministry on ways of addressing the multiple problems that faced the education sector of the country shortly after my assumption of office in 2016. Known as “Education for Change: Ministerial Strategic Plan – 2016-2019” (updated to 2018-2022), the content of the document reaffirms government’s commitment to strengthening institutional structures and establishing innovative approaches that would quickly revamp the education sector.... The nations’ universities hold a pride of place in the execution of such a strategy... *towards* a ‘rapid revitalization of the Nigerian university system’, ...*leading to* improvement in research, teaching and learning facilities, deepening ICT penetration...so as to put in place one that would more directly address local issues, meet international standards and is fit for purpose for the training of 21st century graduates. ... The National Universities Commission has concluded the review of the former *Benchmark Minimum Academic Standards (BMAS, 2004)* of 14 disciplines into those of *Core Curriculum and Minimum Academic Standards (CCMAS, 2022)* of 17 disciplines....

The preface to the CCMAS (2022) reads, *inter allia*,

Section 10 (1) of the Education (National Minimum Standards and Establishment of Institutions) Act, Cap E3, Laws of the Federation of Nigeria 2004, empowers the National Universities

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Commission to lay down minimum standards for all universities and other degree awarding institutions of higher learning in the Federation and the accreditation of their degrees and other academic awards. The earliest efforts at giving effect to this legal framework in the Nigerian University System (NUS) started in 1989 following the collaboration between the Commission and Nigerian Universities, which led to the development of the Minimum Academic Standards (MAS) for all programmes in Nigerian universities. The MAS documents were subsequently approved by the Federal Government for use as a major instrument for quality assurance in the Nigerian University System (NUS). The documents were employed in the accreditation of programmes in the NUS for over a decade....

The other essentials of the CCMAS (2022) also contain a brief history and review of the road-map to both BMAS and the current CCMAS:

...In line with the dynamism in higher education provisioning, the Commission took cognizance of complaints by the universities on the high number of General Studies (GST) courses in the BMAS, and was subsequently streamlined... Consequently, the Commission is optimistic that the 2021 CCMAS documents will serve as a guide to Nigerian Universities in the design of curriculum for their programmes with regards to the minimum acceptable standards of input and process, as well as, measurable benchmark of knowledge, 21st century skills and competences expected to be acquired by an average graduate of each of the academic programmes, for self, national and global relevance... (CCMAS, 2022: Introduction).

Unfortunately or regrettably, the major highlights of the latest curriculum, CCMAS (which, on face-value, may be lofty) are deficient in at least one of both ways: one, obviously, the document is a mere repetition of the essentials of the BMAS (2004) there reinstating all the inherent defects in the latter; two, neither the old nor the latest standard curriculum puts the teaching of “critical ability” any pride of place. Instead, the document restricted (while reintroducing some unnecessary courses) the need for courses in/teaching of critical thinking in “general studies” (GST). Yet, the new philosophy behind the CCMAS policy extolls the need to “meet global best practices in the education sector.” Even the (new/required) GST course, “iii. Philosophy, Logic and Human Existence” is a big step away from the former simply “GST112: Philosophy and Logic”. The initial point to note here is that the previous standard gave equal places to either component of the course (“Philosophy” and “Logic”) while the innovated one tends to stretch the philosophy component by emphasizing “Human Existence” which already is part of “philosophy” study. Whereas, in fact, logic is not essentially critical thinking or critical reasoning; rather, the latter is beyond. Yet, contemporary world (Nigeria, in particular) is marred by immorality, corruption, fear and insecurity, hunger/starvation, amid environmental challenges/degradation and, therefore, needs citizens with innovative, lateral and radical critical ability. Accordingly, in what follows, it shall be shown that if the “Human Existence” component of the course is essential, then “Critical Thinking” is more essential.

Moreover, and in view of those and other possible deficiencies associated with tertiary institutions and development of curriculum studies Nigeria, it is necessary to point to the direction needed to revamp the trajectory. Such is consistent with the role of critical research in order to situate the issues and locate their proper resolutions and possible redirections. According to Brand Blanshard (1977),

...What turns knowledge into account is the habit of Trained Reflection; Paschal said that most of the ills of the world were due to the fact that youth of today stand a good chance to alter the trend and direction of events, if only they are prepared to adopt a more rational, intellectual, ethical and pragmatic approach to Africa’s prolonged predicament. Here is the task in which the vanguard of struggle are millions of tertiary and secondary institution students, and many more millions who have completed their “education” without the hope of employment for the indefinite future (44).

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Of course, Blanshard's admonition captures the reality of the African condition, the "need to adopt a more rational, intellectual, ethical and pragmatic approach" towards developing an adequate school curricula. However, his and similar views fall short of getting down enough to recognize that learning and teaching is moderated by the stipulations of an approved curriculum. Moreover, youth/graduate employment is mostly predicated upon his or her basic cognitive ability. An ideal curriculum ought to input on the student a high aptitude, good moral values and critical ability in order to enhance their employment opportunity and job performance towards national development. Hence, it is the imperative of relevant curriculum developers to reevaluate extant standards in order to reflect such desired ideal. Present work shall attempt to articulate the need for such ideal curricula to introduce the relevant courses/topics in logic and other principles of critical thinking to the syllabuses of Nigeria's tertiary curricula of studies in order to enhance the critical and cognitive ability prospective work force. Accordingly, we shall proceed by identifying, first, the province of logic/critical thinking and, thereafter, show its relevance to the undergraduate in tertiary institution and its social necessity.

II. Logic and Critical Thinking/Reasoning

Rational thinking (and, indeed, all of critical discourse) requires some foundation, validating and, sometimes, justification. Logic is concerned with the science of justification and correct reasoning. Since the era of classical Greece, logic has been recognized as a fundamental and important element of critical thought because nearly all of us, ordinary persons and scholars alike, engage in the process of reasoning about all sorts of issues or lateral thought. Everyone thus employ logic in one form or the other. By this we do not intend symbolic or advanced material but simply an introduction to the main themes of Aristotelian (traditional) logic. It is so called because Aristotle was the first philosopher to produce a systematized study of the methods and principles of correct reasoning. What then is logic? What are propositions? What are arguments? What are categorical propositions and the laws of thought? The knowledge of these and other related questions are necessary for growing training the mind of the youth.

Generally, humans in their rational capacity need to (and indeed, do), consciously or otherwise, "formulate and determine principles and rules to ensure that correct reasoning which proceeds from true premises will not lead to false conclusion" (Popkin, 1999). That condition is a reflection of humans' capacity to formalize and invigorate his sense of critical thought and what humanity desires. Hence, Popkin (1999) describes logic as "the philosophical study of what counts as sound reasoning."² The desire and quest for sound reason does not equate (and should not be construed as describing) all of human psychology (that is the process of thinking, remembering or imagining in general). Rather, logic is a normative activity which concerns itself with how people ought to reason to avoid mistakes; it concerns with the study of the laws/rules of reasoning and of reflecting upon the nature of thinking itself. Technically, logic is mostly "concerned with the principle of valid inference" (Adeniyi, 2000).³ In this way, the overall aim of logic is to "make explicit the rules by which inferences may be drawn, rather than the study of actual reasoning processes that people use, which may or may not conform to those rules" (Odia & Asekhauno, 2005). From a given set of premises, logic furnishes us with rules for arriving at justifiable conclusions. Accordingly, the knowledge of logic does not only equip one with required skills to enable correct, persuasive and valid reasoning, it also fortifies one's sensitivity and ability to scrutinize whatever the excuse or justification of others' thought/reasoning. In legal trials, for instance, logical reasoning is central element in determining the grounds for accepting or rejecting a claim or piece of evidence (Asekhauno and Onomrerhinor, 2018). It is important for one to realize that there is definitely a difference between mere thought and reasoning (whether good or bad). Surely, a bad reasoning would lead to untenable results; and in a legal contest, for instance, such condition may be that of a matter of life and death. Thus, by and large, the theory and knowledge of logic is enormously important in all technical fields, "from the operation of computers to analysing complex weather patterns" (Odia & Asekhauno, 2005).⁴

Logic goes beyond the identification and study/application of principles of correct argumentation. This is because, in our everyday life, people get involved in all sorts of choices—accepting and rejecting options

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before them. This daily activity implies critical thinking. In other words, critical ability is necessary for choosing. Critical thought does not simply imply attacking people (*ad hominem*); it implies constructive disagreement and persuasion (Moore & Parker, 2004). It is usual for one to appreciate others' critique of one's position, idea or theory as deficient, incomplete, unclear, insufficiently justifiable. In the same vein, one should be able and ready to take a critical evaluation of others' perspectives. Accordingly, critical thinking is more about evaluation pursuant to the ideal (normative) rather than mere *ad hominem*. However, to the extent one is able to think critically about one's own ideas, then it is diminished the critical elements open to others about oneself. The main objective is, rather than being victor in an argument, knowledge and understanding. This does not happen in a vacuum; it could be learned. In subjecting views to rational evaluation, it involves a lot of skills. Besides, when one takes a position on an issue, one merely asserts or declares something. But when one does rational evaluation, then one engages in critical thinking. To think critically, therefore, one needs to be guided by (a) the nature of the issue(s) at stake; (b) what considerations/positions are open to the issue(s); (c) whether the reasoning underlying one's or other's claim(s) is/are justifiable or valid; (d) accept, reject, or suspend judgment on the claim depending on our own conviction and persuasion; and (e) one must be level headed, objective and not influenced by some extraneous factors (Moore & Parker, 3).⁵

Accordingly, *logic* refers to the attempt to or actual justification for our thoughts; it is "a way of thinking or explaining something...sensible reasons for doing something" (Oxford, 1997, 869). *Reason/reasonableness* refers to the 'rationale behind' pieces of behaviour, beliefs, argument, etc. To be rational implies to *make sense*, to be appropriate. Reasonableness, therefore, means the extent or degree to which appeal to rationality—the highest good for human beings—including belief formations. *Soundness* implies not just to the attempt to or actual justification for our thoughts, but also to the trueness of claims of the propositions contained in a single thought. It requires claims must be true to life situations and experience.

According to Momoh (1989), there are two senses of logic: natural logic and artificial logic—even though both are, in some way or another, critical. Yet natural logic commits to the devolution of rational, reasonable or justifiable discourse; it is "concerned with clarity of expression, the avoidance of fallacies, vagueness, ambiguity and contradiction. It has to do with evaluating evidence... devoid of emotions" (Azenabor, 2002, 38). Natural logic for the traditional African, is the first sense of logic derive from the enduring sayings/ways of ancestors who never conjectured (thus impersonal and organic) the trajectory of the principles; they all time apply by socialization without formal training. Artificial logic, on the other hand, sets up constraints, variables, sentence connectives, rules and symbolism for transformation and deductions—requiring formal training and mastering. It is necessary to present a brief sketch of what logic and critical thinking entails.

a.) Logic and Critical Thinking: The Value and the Obstacles

Formal logic aims at making explicit the rules by which certain claims may be made or inferences may be drawn. In this way, logic does not concern merely with the study of peoples' actual reasoning processes (which may or may not conform to certain rules). This claim does blur the fact that, from a given set of premises, logic furnishes thinking with basic rules for arriving at justifiable conclusions or how to avoid errors. Accordingly, logic helps to equip one with rudimentary skills for correct, persuasive and valid (or even sound) reasoning; it also help to fortify our sensitivity or capacity to scrutinize the reasonableness of others' points of view (arguments). This informs that there is a difference between good and bad reasoning. While a bad reasoning may lead to invalid results, a good argument may never lead to invalid results. Therefore, in contemporary world, logic is enormously important in all of human engagements—whether in personal life, scientific/technical fields, or matters of aesthetics and value.

By the fact that logic and critical thinking is useful to both the individual and society, the trajectory ultimately leads to knowledge, understanding and empowerment (individual and/or social). At the personal level critical thinking helps us guide against illusion and unfounded belief. In this way, one is not easily

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deceived even though one can easily deceive other uncritically minded. In this way, critical thinking commits to problem-solving. Critical thinking helps us to absorb and filter the pressure of persuasions—implores us to believe on many grounds (including emotional, authoritative, forceful, and etc.). Critical thinking, however, helps us guide against going with the wind. Critical thinking helps one to be in charge of his life and his understanding of the world and nature. Hence Socrates says ‘The unexamined life is not worth living’. Simply put, critical thinking helps one to acquire the skills for learning and exploring (very important for intellectual endeavour); it’s a defence against error, manipulation, and prejudice (against demagogues, propagandist alarmist, bloggers, and xenophobia). This is useful in the area of choosing ones friends and spouses in choice of investment, religion and leaders; and it’s a tool for self-discovery.

On the other hand, an important note is that one must not be weary but skilful in order to discover or appreciate that there are common impediments to (issues with) critical thinking. We can group such issues into two categories: (1) the person-based hindrances that arise as a result of how individuals actually think (procedural); and (2) the hindrances or issues that arise consequent upon “what” is actually thought of (substance).

1. *Psychological Obstacles* As humans, we get greatly committed to (and spend a great deal of time) protecting, maintaining and comforting our own mental life, our own selves—and this is a perfectly natural but harmless urge. Accordingly, we continuously learn to identify and overcome selfish or egotistic thoughts. Such commitment could be achieved through one of three ways: first, by one being conscious of cases when one’s deliberations may be getting subjective; second, by one being watchful of any routes where critical thought might be undermined; and third, by one making sure that no important or relevant justifications are being omitted. Besides, one must be conscious of the possible or probable ways that “group thinking” may garble “critical thought”. Moreover, proper critical thought ought to appreciate the meaning of “peer pressure” (and one must be clever to put forward some relevant examples of such) and adopt necessary *Ad Populum* or other tactical argumentative device such as stereotyping. Accordingly, self-interested thinking must be avoided. Essentially, one should be conscious and alert to any ways in which one’s capacity for critical thinking might be undermined.

2. *Philosophical Obstacles* Another set of hurdles against adequate critical thinking inability to comprehend what constitutes a particular philosophy and how such fundamental ideas could weaken critical thinking. In other words, some individuals might be unable to scrutinize the dogma of subjectivism or relativism. To overcome such condition, one must be alive to adopt some sceptical attitude and determine how the any view contributes to the enhancement of critical ability.

Notably, one’s philosophical convictions count in or strengthen one’s critical ability. Specifically, one must be mindful and conscious of subjective relativism, social relativism, and excessive scepticism. Although no one is immune to psychological barriers to critical thinking, we must do well to confront such, and develop the mind beyond the lures of immediate experience.

Critical thinking applies to the individual and his world-view interrogating cultures, beliefs and all ideas one lives by. Having known all these, the question now is ‘what should I believe? What can I know? Should I not apply critical thinking? Hopefully, the application of critical thinking is easily enhanced by the initial understanding of three interrelated principles, often referred to as the *three laws of thought*.

III. An Analysis

It is usual and normal, fruitful and joyful, satisfying and indeed gratifying for an individual (or even any society) sometimes to review or re-examine the basis or nature of their *being* and the adequacy of their attitudes vis-a-vis the goals they sort and the ways being contrived to achieve them. Hence, Socrates admonishes that “an unexamined life is not worth-living” (Popkin, 1999, 80). Accordingly, a prompt review of the nature or status of undergraduate study in contemporary Nigerian institutions could be instructive.

With the increasing number of educational institutions in Nigeria, the country stands out as having the largest number of tertiary institutions in Sub-Saharan Africa. According to the National Universities commission (2018), there about one hundred and sixty-three (163) accredited universities, over a hundred

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(100) polytechnics and about 35 colleges of education distributed across Federal, State and Private ownerships. This huge number of institution provides tertiary education to over 600,000 students within the country and also provides opportunity for foreign enrolments. Yet all tertiary education in Nigeria is moderated by the National Universities Commission (NUC) while enrolments and admissions to public institutions are conducted by the Joint Admissions and Matriculation Board (JAMB).

According to JAMB statistics, student enrolment for higher education has risen significantly. The number of aspirants has continued to increase to over the years, which is traceable to the ever increasing population of youths in the country. Government on its own part, in a bid to meet the educational demand of this youthful population, has also tried to increase the number of institutions in its efforts to meet demand and also provided enabling environment for the private sector to come in.

Despite these efforts, available number of spaces still seems to be nothing especially in the face of the surging increase in the rate of enrolment in tertiary education system in the country. This has led to abandonment of the staff/student ratio. According to Saint, Hartnett and Strassner (2003) rising student numbers generated an enrollment ratio of 340 per 100,000 persons. However, the reality on ground shows that it is almost impossible to find a class (even in the sciences) that is less than 50 students. Disciplines in education arts and sciences, are far worse as student-enrolment number is mostly higher and above 200 in a class. In such circumstances, lecturers are usually compelled (in the absence of Public Address System, PAS) to resort to “shouting” at the top of their voices during lecture hours (a condition that also initiates brain drain).

Facilities meant to accommodate these students are either not available or not functional. In most cases lecture halls are usually grossly inadequate, laboratories either too small to accommodate the number of users or not functioning up to capacity. This is in most cases has led some lecturers to trivialize practical sessions. It is now a common sight to behold students sitting in tens on a row meant for not more than six persons due to insufficient seats. Those who are lucky enough to enter into the lecture hall receive lectures while standing while the not so much lucky ones endure the lecture hours standing by the windows.

The above scenarios have obvious serious implications for learning output or quality of learning since they in no way meet global best practices in the education sector. It therefore calls for urgent attention and demands that lecturers stand up to the situation squarely by adopting alternative strategies that can enable improvement in the quality of teaching and learning especially in the face of current reality looking them in the face.

IV. Enhancing of Critical Ability in Nigeria Tertiary Education¹

As has been said, the application of logic is central to human rational and judgmental capability; and this is historical. Logic and critical thinking are useful to both the individual and society. This is because, ultimately, critical thinking enhances knowledge, understanding and is empowerment. At the individual level, critical thinking helps us guide against illusion. In this way, one may not easily be deceived (even though one could deceive others uncritically minded). Besides, critical thinking enables problem-solving, active learning, intelligence and self-development; this enhances social development. This is because

¹ This section is curled from two related sources: Asekhauno and Omonzejele’s work on the “values of logic” and Kehinde’s work on “alternative logic” which both appeared in *The Substance of Logic & Critical Reasoning*, Published by the University of Benin, Nigeria, 2023. Here is my record of debt.

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humans' lives are also defined by their choices and actions; and actions and choices are guided by quality of thought. The knowledge of logic clarifies thought. Critical thinking helps the individual to absorb and filter pressures arising from mere beliefs. In this way, critical thinking, however, helps one to guide against going with the wind. Critical thinking enhances one's ability to comprehend one's life and the interpretation or understanding of the world and nature. Simply put, critical thinking helps one to acquire skills for learning and exploring (which is very important for intellectual endeavour). Critical thought guides against committing error, manipulation, and prejudice. Critical thought is a tool for self-discovery.

Besides, one must appreciate that logic is a major tool to help to (1) detect errors in our thinking, (2) restrain the attitudes and feelings that can distort our reasoning, and (3) to achieve a level of objectivity that makes critical thinking possible.

At any rate, logic and critical reasoning is useful for research work. Logic is not cold statistics as it is often presumed. Logic is applied in our daily life and in the professions. In fact, it would be impossible to lead a normal life without logic. This is because logic is about 'correct reasoning or the science of reasoning based on what is expected by the working of cause and effect....' Logical reasoning is used to arrive at or used to sustain assumptions (or otherwise) and arrive at conclusions. May be that is why Aristotle referred to logic as an *organon*, that is, an instrument employed in the course of studying other academic disciplines, such as history, law, politics, medicine and zoology, require the services of logic...." Accordingly, an initial or early knowledge of logic at the formative years enhances the young student's capacity to achieve critical comprehension. In addition, and beyond formal academic disciplines, I would add that logic is an instrument used in the course of our daily activities. Again, '...Just as oxygen is indispensable to life, so is logic indispensable to life, and in particular, human interaction and communication.' Let me buttress this with an example. For instance, If I am aware that Kunle teaches at a secondary school at morning time during weekdays, it implies that should I intend to visit Kunle and meet him at home on a Monday, I could on that basis say to Kunle over the phone that, 'I will visit you at home today at 5pm'. This is because since I knew that Kunle works and would normally not be at home at morning time, other things allowing, and based on that assumption, then, I would suggest, that it is more probable to meet with him at home at evening time than at morning time.

Similarly, and since many a youth is increasingly becoming more involved in governance, their knowledge of logic would equip them with the capacity for policy making and conflict resolution. At the level of policy-making, logic is employed on how to improved quality of healthcare, for instance. When governments decide to increase health budgetary allocations, it is because, they logically expect a corresponding improvement in healthcare and healthcare delivery, that is; improved healthcare for her citizens. Put in a logical frame:

- a. Last year, Nigeria spent X amount of money in the healthcare sector
- b. This year, Nigeria spent more money (X+Y) in the healthcare sector which was used to import state of art diagnostic machines
- c. Then one could safely infer that if these machines are properly put to use, then we should expect to see healthier Nigerian population this year
- d. It then further follows that, Nigerian population based on improved health, will be more productive this year than the previous year.

...This logical explanations advanced above, are meant to show the logical nexus between healthcare resources allocation, population health and productivity. But there is, perhaps, nowhere else that the use of logic is more profound than in law and conflict resolution. Conflicts at whatever level arise from when individuals or groups feel (real or perceive) that they have been unfairly treated or unduly taken advantage of in an arrangement or transaction. Being taken undue or unfair advantaged of is synonymous with exploitative transactions or arrangements. Law is a known instrument for resolving conflicts usually based on the use of superior logical arguments, and according to Nena Lenz (2010), 'arguments is the primary

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tool of our trade and we cannot use them effectively unless we understand and obey the rules of logic', and the 'three tools of logic that are particularly important in the practice of law are: deductive reasoning, inductive reasoning by generalization, and inductive reasoning by analogy'.... It will just suffice to state that unlike what obtains in deductive reasoning, inductive reasoning takes off from 'several specific facts to create a theory that explains relationships between those facts and supports your conclusion'.... While analogy entails reasoning from a particular to another particular, that is a definite conclusion to another definite conclusion. Successful analogy depends on the relevancy of the comparison. It is therefore important to detail the similarities between the cases and to acknowledge their differences. You must establish that the relevant similarities outweigh the relevant differences and therefore the outcomes should be the same'....

At this point, let us use cases to see the application of logic in law and conflict resolution, and how logic aligns with common sense. I have decided to use Chinua Achebe's very famous book entitled: '*Things Fall Apart*' because of the verisimilitude inherent in his story line on how conflicts are resolved in most Africa communities. An instance is in Achebe's *Things Fall Apart* (which gives a narrative of the mechanism of a logical conflict resolution between in-laws). What is worthy of note is that, both parties advanced arguments using the instrument of logic to defend their own positions and actions....

In all conditions, however, there are four (4) major subjects in critical reasoning/research; these are: 1. What is X? 2. What is the value of X? 3. What are the causes (or the consequences) of X? 4. What should (or ought or must) we do about X?

We must not that there is an emerging alternative logic is *Ezumezu* logic, which is an example of a well-articulated non-Western system of logic aimed at challenging in one way or another, the epistemic injustice of the modern/colonial world or what may be referred to as Euro-North-American 'epistemic dogma....' To arrive at the understanding of conversational thinking...in the sense that Chimakonam uses it has a technical connotation that embeds the notion of relationship.... In that sense, conversation is a kind of relationship. But it is not any kind of relationship rather it is one that reflects certain human values, such as the capacities to be creative, evaluative, critical and revisional and in which entities considered opposites might be reconcilable.... Specifically in the context of ethics, the capacities to be "creative" represents the requirement to formulate or promulgate moral norms; 'evaluative' represents the requirement to judge conducts that embody those norms; 'embodied' represents the requirement for action based on moral convictions; 'critical' represents the requirement to contest the viability and veracity of such norms; and 'revisional' represents the requirement to repeal, revise and replace bad or ineffective norms...." The aim of *Ezumezu* logic is to weigh into the truth-falsity dichotomy of the Aristotelian logic by proposing the possibility of a third angle to a discourse as an alternative or a complimentary side. This third angle is provided within a context. The identification of context as a possible place for truth is based on the assumption in the superior capacity of the collective rather than the individual to accommodate wider range of possible truths. This seems to be the epistemic assumption upon which *Ezumezu* logic draws. This is because, as an Igbo word, *Ezumezu* denotes "the collective, the aggregate or the totality of all that is most viable, most potent and most powerful". Conversational thinking then leverages on this African logic in its proposals for thinking, seeing, interpreting (and relating or actioning in) the world from a third-person's, third-variable's or third-factor's and thus complementary, perspective.

From the preceding perspective, no culture, episteme, group or category of people is considered as being 'truth' or 'false' in the sense of being better or more human than others. Instead, cultures, episteme, groups or categories of people are treated as 'truth' within a given context and thus complementary. To a great extent, this approach to human treatment seems to mitigate rather than eliminate the possibilities of human social and epistemic ills such as exploitation, discrimination and marginalization instigated by the Aristotelian logic of binary oppositions. This emerging logic is a desideratum for emerging ideal Nigeria (Africa), and would be invaluable to emerging Nigerian youth....

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V. Recommendations and Conclusion

This work attempted to review the Nigerian current minimum standards for tertiary education. In the attempt, the work adumbrated the nature of education and Nigeria's experience of same. It went on to articulate the deficiency if the emergent curriculum, CCMAS (2022) and discovered that is inadequate when it comes to courses in the area of critical learning, and area so necessary both in the reflection of global best practices in education and the need to build critical minds for national development. Hence, the work briefly outlined the very nature, principles and methods of logic and critical thinking/reasoning (including the emerging African version) vis-à-vis the obstacles to acquiring the skill.

The work notes, however, that despite the impressive accomplishments of the human intellect, one frequently comes face to face with examples of faulty reasoning, error, and misjudgment. Clear thinking doesn't always come naturally, it requires an effort. But one can get better at it via willingness to work and accept guidance here and there—through education. Such education must encourage the development of new curriculum to reflect the teaching of basic virtues and values and critical thought on these. We agree with Greene that “in the arena of teaching and learning, we imagine choosing between collaborative learning and solitary scholarship, between learners who are logical and abstract and those who are concrete and relational....

Accordingly, the suggestion is that the current Nigerian policy on higher/tertiary education, as encapsulated in the CCMAS (2022) be reviewed reinvigorated to include more courses in logic and critical thinking; that, in fact, such courses should be infused in every department/course of study in every higher educational institution (University) so as to deepen and make the subject an easy grasp within the setting for social relevance. Therefore, it is the conclusion of this work that any policy (such as CCMAS, 2022) stipulating standard curriculum for tertiary education in contemporary Nigeria is deficient without inculcating essential courses in logic and critical thinking to enhance the skill of critical ability among Nigerian students/graduates.

It is hoped that this work, however, would interest the reader/public to learn to think flexibly and logically in theoretical as well as practical endeavor. For instance, there may be an-*other* way of arriving at a more useful conclusions if only we could think differently and in terms of possibilities. Logic is not owned by nor is it the prerogative of the West, for, as Godwin Sogolo (2020) declares, logic is a fact of all human cultures.

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