International Journal of Innovative Psychology & Social Development 14 (3):410-429, July-Sept, 2026

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DOI:10.5281/zenodo.22731898

Impediments to Effective Teaching and Learning of Critical Thinking in Secondary Education Institutions in Nigeria

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ABSTRACT
The acquisition of Knowledge of critical thinking is a fundamental and a necessary foundation for initiating a revolutionary and transformative human capital development drive in any state that is desirous of development and most responsible states start at the secondary education level to develop the capacity of their citizens to think critically. Regrettably, many impediments exist in the efforts of such states to translate this into reality. Using the philosophical research methodology and guided by human capital development theory and social constructivism, this study discusses impediments that militate against the effective teaching and learning of critical thinking in secondary educational institutions in Nigeria. The study finds out that impediments to effective teaching and learning of critical thinking in secondary educational institutions in Nigeria owe their roots to multiple factors. Teacher education institutions in Nigeria do not prioritize the acquisition of the knowledge of critical thinking by learners in both teacher education institutions and secondary education institutions. With a die-hard commitment to the maintenance of status quo, tradition and culture in Nigeria systematically hate young people who indulge in critical thinking. The paper makes recommendations, part of which are that the ministry of education should make the teaching and learning of critical thinking compulsory and should develop curriculum for studying tradition and culture with a view to establishing if the roles of tradition and culture are those that promote or undermine the development of critical thinking skills among learners in secondary education institutions in Nigeria.
Keywords: Critical thinking, teaching, learning impediments, secondary education, Nigeria

INTRODUCTION

Across the world, people willingly, whole heartedly and receptively embrace education and this positive disposition towards education is so inclusive that the rich and the poor in developed, developing and under-developed states of the world are deeply and enthusiastically involved so much that it can be rightly established that the desire and quest for education is a leveler of persons. A retrospective scrutiny of the history of states that are classified as developed states situates and implicates education as the institution, springboard and instrument that they heavily relied upon and exploited so as to chart their way to greatness. What has been said above is that education is the revolutionary and transformative platform which those states that are classified as developed leveraged upon to attain whatever enviable and sophisticated height and status that they presently enjoy and even in the euphoria of their present developmental sophistication, they still look up to education for articulated and systematic guidance in sustaining their enviable status in comity of states. Such states position and reposition their education so much that their education is looked upon as an evaluation and assessment scale for determining the level of development of their states and in these states, their education is held in high esteem so much that it is the epicenter for bringing about humane and revolutionary reforms and transformations that can align with contemporary realities of the time and age. In fact, whatever revolutionary and radical breakthrough at the social, moral, environmental, political,

economic, scientific and technological fronts that such states presently enjoy and will continue to enjoy owe their success stories to the quality of investments that their founding fathers or forebears of such states made in education. One development that keeps sustaining the revolutionary vision of such states is their acknowledgement and recognition of the powers of education, a development that creates robust awareness among their citizens that the quality of investments in the citizens of the states produces corresponding dividends in the quality of human capital that can be available in such states and a corresponding quality of development that the states can experience. On the other hand, developing and under- developed states of the world equally look up to education as the only institution, instrument and social provision through which they can launch a challenge at the many fronts of their deficiencies so as to catch up with the developed states of the world and to match words with action, education is constantly at the heart and centre of their politics, policies and national deliberations. Like the developed states, most of the states in this category see the provision of quality education as the only policy direction or option that can enable them to redeem themselves from the clutches of ignorance, poverty, slavery, backwardness, marginalization and other vectors of stagnation that make genuine individual and national development a mirage.

States, whether developed, developing or under- developed are not alone in their high regard and place of honour for education as groups equally show phenomenal and epical interests in education and one group, which like the states that shows adequate zeal and enthusiasm in matters that concern education is parents. Parents show unquenchable and unquantifiable zeal and enthusiasm for the education of their sons, daughters and wards and the zeal, enthusiasm and curiosity of parents for the education of their sons, daughters and wards is phenomenal so much that Nwaokugha (2015:86) writes that:

> States are not alone in their regard for education. Individuals consider education the best legacy and investment for their sons, daughters and wards and correspondingly parents consider themselves failures if they do not provide their sons, daughters and wards quality education. The commitment of parents in this direction can be seen in the extent in which they can starve, go extra miles or indulge in humanly excruciating activities just to ensure that the mandate of providing quality education for their dependents is achieved.

It can be said and said very boldly that the regard for education by states and parents across the world stems or derives from the recognition of the states and parents that education is a human right. Education as a human right fundamentally and foundationally situates the provision of education as a natural right or a right bequeathed to everyone by nature, which must not be compromised or denied anyone. What pops up especially when critically and creatively viewed from the lens of education as a human right is that the provision of education is a source of empowerment whose exploitation is key for the survival of the individual, which by extension points in direction that signals that anyone who properly claims his right to education as a fundamental human right has according to Nwaokugha (2015:70), been empowered with the basic creative and critical thoughts for advancement and can effectively indulge in critical thinking to make choices or choose between alternatives and most importantly to participate in the democratic and political process of his state and anyone who is denied or restricted from enjoying his human right to education has been critically disabled and critically impaired so much that the person's access to opportunities in the immediate and larger society including his right to life, survival and existence has been threatened or compromised.

From the above it is obvious and clear that education is fundamental and foundational and the fundamental and fundamental nature of education makes its provision one social provision that can serve according to Eboh (1996) as an institution and instrument for the domestication of a people on one hand and on the other hand as a social provision that can robustly and vibrantly serve as an institution and instrument for freedom. Education as an institution and instrument for the domestication of a people invokes a meaning that resolves around a social provision that is merely targeted at the socialization of the citizen into becoming what Nwaokugha (2015:70) calls a band wagon of yes- members whose actions and senses of responsibility cannot make a contribution or affect any meaningful change in their society while the provision of education as a means of freedom situates education as a social provision that prioritizes the opening of the eyes of the receiver of education in the form of acquisition of a higher sense of critical consciousness, where he who had received education or gone through education can according to Nwaokugha (2015:70), autonomously and existentially take his destiny in his own hand by meaningfully engineering and changing his condition for the better.

What is said above about education is revealing and part of what it reveals is that education as a social provision in which states and parents make quality investments in it is structurally and characteristically ambivalent. This feature of education is a development that systematically requires some carefulness in developing and selecting the objectives of education and delineating the proper direction and trajectory its provision should follow especially in the pedagogy of its delivery and the behavioural expectations to be demanded or expected from the learners. These are necessary checks and balances in view of the fact that education is robustly endowed with moralizing, civilizing,

empowering and emancipating values and virtues that makes for orderliness and harmony in addition to promoting development in the affairs of man and his institutions and base on the virtues in which education prioritizes their promotion in the society mankind has systematically and consciously developed ways of translating such virtues that are associated with education. Across the world people inculcate and acquire the virtues of education through teaching and learning where priority is on the development of abilities and competences that can boost one's endeavour. In the 21st century, there is a robust and phenomenal emphasis on the teaching and learning of 21st century skills and principal of which is the ability to think critically or to make critical thinking a norm in the affairs of learners or education generally so that products of the education industry can be able to acquire the right cognitive power and capacity that can make it possible for them to navigate the slippery and ever-complex terrains of the 21st century.

True, prioritizing and making the knowledge of critical thinking a focal flashpoint in human capital development that is the preoccupation of education and its provision is necessary in view of the multiplier effects that the knowledge of critical thinking develops in learners. Knowledge of critical-thinking enhances students (learners) ability to perform and achieve higher in their academic pursuits, equips students (learners) with the cognitive capacity to decode abstract ideas and concepts, serves as a measuring scale for evaluating and assessing the progress of the education system with a view to identifying and establishing areas where there are deficiencies or areas where there can be improvements, serves as indicator and index for determining the quality of the products of the education system and index for predicting the direction of the development of the individual and the state.

It is a fact that cannot be doubted that every good education system needs to make the teaching and learning of critical thinking a topmost priority due to its inherent features, capacity and capability to stimulate in the learners the curiosity to robustly, vibrantly and enthusiastically explore their environment. In fact, Utaeva (2023) is on point when he writes that knowledge of critical thinking helps learners to develop analytic skills, in addition to helping learners develop the ability to reason and make informed decisions and Nwaokugha and Ebrudouye (2024), heighten the need for teaching and learning critical thinking by acknowledging that the teaching and learning of critical thinking in educational institutions has become inevitable.

As obvious as the positions maintained above can be, anyone who rationally and objectively scrutinizes what happens in reality can quickly come to a conclusion that there are lackadaisical and lack of correspondence between the attitudes of key stakeholders in education and the teaching and learning of critical thinking in secondary educational institutions particularly in Nigeria. In fact, there is a cause for concern and that revolves around the thesis that open acknowledgement of the need for teaching and learning critical thinking in educational institutions does not correspond with the realities in the education system in Nigeria as there are impediments to the effective teaching and learning of critical thinking particularly at the secondary education level in Nigeria. This study creatively aims at identifying and discussing such impediments to effective teaching and learning of critical thinking in secondary education in Nigeria with a view to highlighting the implications of such behaviors for the individual learner, the Nigerian state and the education industry.

This study on the impediments to effective teaching and learning of critical thinking at the secondary education level in Nigeria can be significant in a number of ways. The study can create new awareness whereby priority can be given to the development of critical thinking skills and abilities, bearing in mind that thinking is central to all human actions and activities as no amount of progress can takes place in the life of any individual without such individual having visions of such progress in his mind before it can be translated into reality. The study can develop new insights that on one hand are contemporary and on the other innovative and a combination of its contemporaneity, currency and innovativeness promises to bring new developments at the levels of curriculum and pedagogy that can help widen and expand the instructional space. By contributing new developments to curriculum and pedagogy, the study can equally widen and expand assessment, evaluation and other critical sectors in education by opening up spaces for new behavioral expectations from learners(students), teachers and the society. The novelty of the study means that the study can have potentials to trigger epistemological and axiological revolutions for new narratives in human capital development whose spheres of influence can extend to teacher education institutions, government, policy marker and policy implementers among others. The study can be significant as it can identify and raise awareness on those variables that prevent or hinder teachers and learners in secondary education institutions from indulging in critical thinking. Just as the saying goes that problems identified are half solved, such conscious awareness, sensitization and conscientization can stimulate in teachers, students and other critical stakeholders in education the systematic development of the strategies for overcoming such impediments. By developing an army of vibrant learners at a critical level of Nigeria's education (secondary education), who can think critically and who can be admitted into the tertiary education levels or in the production, economic, entrepreneurial or other sectors of the economy, the study can be on course for engineering transformative revolutions for the manpower and national development of the Nigerian state.

The theoretical frame works upon this study is anchored on are human capital development theory and social constructivism. Human capital development theory is a popular and indeed dominant theory that scholars in education, economics, political science, economics and other disciplines that show zeal and interest in development through human capacity building of states focus exclusive attention on. Because it is attractive to many scholars and disciplines, it has interdisciplinary, multidisciplinary as well as cross disciplinary potentials and capabilities. The theory invokes a meaning that revolves around the thesis that any state that is desirous of genuine national development must improve the knowledge, intellectual and skills acquisition levels of her population through quality investment in the citizens of the state and the rationale for this is anchored on the position that human beings are the carriers of the genes that translate into development, (Eboh, 1996). The reality of the above position is that investments in human beings in the form of provision of education, possession of knowledge and acquisition of saleable skills have potentials to increase the level of efficiency, effectiveness and productivity of the individual that can consequently boost the national development of the state. In fact, the basic idea of human capital theory has been succinctly summarized by Fagerlind and Saha (1989:18) when they write that human capital theory postulates that the most efficient path to the national development of any society lies in the improvement of its population, that is its human capital. It can be said that the foundational idea of this theory holds investments in human beings as the pillar, foundation and building block upon which the development of any state depends.

Social constructivism as a theory of knowledge construction is epically and phenomenally attractive to many scholars and disciplines and part of what accounts for this is the thesis that this theory of knowledge construction upholds that knowledge of any configuration is constructed, built, generated and produced by man. The above idea that is associated with social constructivism is reinforced by Liu and Matthew (2005:387), who write that "knowledge is not mechanically acquired but constructed with the constraint and offerings of the learning environment and the same position is forcefully highlighted by Nwaokugha (2025:24) when he writes that:

> What is at the heart or centre of social constructivism as a theory of knowledge construction is the awareness that no knowledge of any configuration is ready made and correspondingly sampled or displayed anywhere to be purchased or hired by who wants it, rather knowledge of any configuration can be produced, generated and constructed through the conscious, critical and creative efforts of an individual or individuals who demonstrate creative engagement, commitment and critical consciousness in the search for knowledge.

What this reveals is that human beings according Nwaokugha and Odinka (2025:180) are the architects, builders and constructors of whatever knowledge that exists. Interestingly as central and critical as human beings can be in the construction of knowledge from the lens and trajectories of social constructivism, it is important, following Nwaokugha and Keri- Frank (2025), to note that knowledge is not a properly that the individual possesses alone rather it is a shared experience that develops and circulates through social interactions. This points in the direction that there are attitudinal dispositions that any individual or individuals who show capacity and willingness to construct knowledge must display or showcase. Such person or persons must learn to cooperate and collaborate with one another, must be conversant with the trend of developments in the area of knowledge that is of interest to him, must be creatively and critically minded as well as be open to new ideas. This suggests or points in the direction that he must not be dogmatic, he must show capacity in engaging, dialoguing, communicating and interacting with other members of the society especially those members of the society whose epistemological areas of interest align with his own, must show interest and curiosity in events and happenings around him and lastly whatever knowledge so far arrived at must be capable of expanding and extending the frontiers of already existing knowledge to the extent of being or functioning as pillars and guides for solving and resolving the problems of man and his institutions.

The use of human capital theory and social constructivism for this study can be foundationally and fundamentally justified on many fronts. The use of human capital theory for this study is robustly significant as it helps to create deep awareness and insight namely that the dreams, aspirations and visions of any people or state for the development of the state and its people can be corresponded with robust and receptive investments in its human capital or else such aspirations, dreams and vision can never be translated into reality. It follows that the first point of call in this direction can start with developing the abilities, capacities and capabilities of the citizens to think and think critically. This is premised on the thesis that thinking and thinking critically is the key to charting directions for the success of the individual and his state. It also follows that identifying and addressing challenges that can impair the citizens' drive towards building a strong base for its human capital in the form of acquiring the right skills that are supportive of critical thinking can be moves in the right direction.

On the other hand, the appropriateness of social constructivism for this study lies in its inherent potentials to raise curiosity and enthusiasm in the citizens that knowledge is not mechanically acquired rather is developed and kept alive through the critical and creative consciousness and resourcefulness of man in cooperation, active participation,

active engagement and active collaboration with other members and institutions in the society and where social constructivism is most appropriate for this study lies in its inherent recognition of the functions and roles of knowledge in the growth and development of man and his institution and correspondingly considers it right to create insights through raising awareness and curiosity in everyone to actively engage and actively participate in the business of knowledge construction and knowledge generation. In a way, social constructivism as a theory of knowledge generation and knowledge construction is focused on jettisoning and discouraging all visible traces of monopoly in issues of knowledge construction but is committed to promoting curiosity where all citizens become active, critical, and creative stakeholders and partners in the business of knowledge generation and construction.

Methodologically, this study employs the qualitative or philosophical research methodology, which though has been in existence right from time but has gone through epistemological revolutionary transformations so much that in contemporary times it has become a destination of choice for scholars and researchers due to its ability to accommodate multidisciplinary, interdisciplinary and cross disciplinary epistemological paradigms. Qualitative or philosophical research methodology can be used to address diversified subject matters and this feature makes it difficult to have a one size fits all definition of qualitive or philosophical research methodology. However, this feature opens flood gate of opportunities for any description of the research methodology to concentrate on features that are inherent with the research methodology. One inherent feature of qualitative or philosophical research methodology is that it is used to refer to research approaches whose research questions according to Williams (2007:65) require textural data. Another inherent feature that marks out a qualitative or philosophical research methodology is noted by Angadi (2019:37), who writes that qualitative or philosophical research methodology is characteristically associated with the collection of extensive narrative data on many variables over an extended period of time in a naturalistic setting to gain insights not possible using other research methods. As a research methodology that relies heavily on extensive narrative data, qualitative or philosophical research methodology affords researchers and scholars who are favourably disposed to using it enough freedom and opportunity to freely navigate epistemological territories that ordinarily can seem unthinkable, impossible and un-contemplatable and correspondingly to express themselves in systematic ways that take into cognizance what Nwaokugha (2025:25) calls " thoroughness of rigours of thoughts and semantic clarity". Because exclusive focus is given to thoroughness of thought and semantic clarity, a researcher or scholar who uses qualitative or philosophical research methodology is foundationally the instrument for data collection and analysis. The above is revealing and what it reveals is that qualitative or philosophical research methodology focuses on specific kind of data namely words or images rather than numbers and the rejection of focus on number is eminently highlighted by Ishtiaq and Naz (2024:10), when they write that:

> Qualitative research is exploratory, aiming to cover new insight, perspectives and understanding within the educational settings. Qualitative research in education involves collecting and analyzing non-numerical data such as interviews, observation, case studies and document analysis. The aim is to generate in- depth insights, explore meanings and understand the underlying processes that shape educational phenomena.

The foregoing points in the direction that qualitative research methodology is robust and its robustness can be attested to in the fact that it incorporates speculation, analysis and prescription. Speculation as a method of qualitative or philosophical research was the predominant research methodology in the ancient times so much that Gire (2020) acknowledges that it was primordial to all experiences and thinking, a pointer that speculation is not a new comer in the building construction and generation of knowledge. It focuses on prioritizing logical unity, logical coherence and logical clarity in all presentations that are the focus of a study and this accounts for why Nwaokugha and Danladi (2016:421) write that "the foundation of this method of enquiry is that the soundness or reasonableness of any proposition can be established through its rootedness in the science of logic or the various orderly sequences that lead to a conclusion". This can be technically recapped to mean that the trajectory for establishing truth using the speculative lens is the extend in which a conclusion derives from the premise before it or what Aminigo (1999) and Agulanna (2011) calls attempts to find logical coherence in an entire realm of thought.

Speculation as a practice is innate or natural in human beings irrespective of developmental sophistication or lack of it and consequently is a practice that man resorts to anytime man is challenged or confronted by situations he cannot easily comprehend and the end result is usually to strive to arrive or initiate higher reflective curiosity and critical consciousness that can trigger in man the desire to resolve the puzzle, the desire to know more, the desire to transition or navigate to levels that can be considered to be better than the present one where man is. To this end, speculation triggers or serves as a guide for action or trigger that stimulates a philosophy of action that targets laying foundations for revolutionary reforms and quality transformations that can bring about quality improvements in the life of a people. This is where scholars and researchers who maintain that speculation is at the heart of any

breakthrough, reform and transformation can be said to be one hundred percent correct. True, speculation is possible in all human endeavours, however, axiological and metaphysical topics that in their nature lack a one size fits all interpretation are more receptive to speculation. Language and logic are foundational and fundamental in any effective and meaningful speculation.

Analysis as a method of carrying out philosophical research has undergone reforms and transformations starting from man's conscious pursuit of knowledge and between the past and the present times. In these reforms and transformations, one thread has remained visible in the evolutionary trends and revolutionary trends that analysis concerns itself with and that evolutionary and revolutionary trend is exclusive focus on meaning, clarification and communication of meaning between man and institutions in the society. So, analysis as a method of qualitative or philosophical research is the critical examination of words, terms, concepts and proposition with the aim of projecting and making explicit meanings that are associated with such words, terms, concepts and propositions (Nwaokugha & Moses, 2025:439). It is normal that some words, terms, concepts and propositions can be associated with more than one meaning and the use of such words, terms, concepts or propositions can introduce semantic confusion between a speaker and the audience a speaker addresses. Under this condition, a plausible alternative for effective communication is analysis, where linguistic precision and semantic clarity can be established for addressing and resolving issues of contradiction, absurdity, ambiguity and meaninglessness that maybe prevalent in the said communication.

The epical and phenomenal focus on meaning, clarification and communication of meaning derive impetus from the fact that virtually all interactions and relationships that have triggered and promoted conflicts, crises, wars and retarded human relationships owe their roots to miscommunications, meaningless communications and on the revised side, communications that are precise and straight to the point are recipes for harmonious living, cooperation and sustainable growth and development of man and his institutions. The foregoing reveals that analysis is necessary for peaceful co-existence, harmonious human flourishing and the establishment of the right environment where order, effective communication, harmonious living and decorum can become norms. It is on account of the foundational potentials of analysis in peace building and national development that Nwaokugha and Moses (2025:446) write that:

> Any scholar who robustly and creatively embraces analysis in his study is consciously on trajectories where he lays foundations for peaceful and amicable resolution of conflicts and crises, is on a voyage and expedition where he guides humanity into developing and internalizing behavioural and attitudinal dispositions that are supportive of precision in expression, logical in presentation, and thoroughness of thoughts in thinking and all these individually and collectively are recipes for national development.

It is important we point out that analysis is a mark of intellectual sophistication (Nwaokugha & Wogonwu, 2020:180) and correspondingly a trending practice in scholarship and academic pursuit (Nwaokugha & Rotimi-Aina, 2025:115). What can be consider an inclusive and comprehensive advantage of analysis is provided by Nwaokugha (2021:160), when he writes that:

> The advantage of analysis is that through it, meanings are clarified and ambiguities are resolved and this clarification and resolution of ambiguities helps members of the society to amicably address, resolve and bring to the barest minimum the occurrence of conflicts, misunderstanding, disagreements, violent confrontations and instability-inducing behaviours that make peace elusive by threatening harmonious coexistence and progressive development of the society.

Analysis is of two types namely; conceptual analysis and linguistic analysis. Conceptual analysis focuses on establishing if the meanings that are associated with a concept are actually the meanings the concept stands for while linguistic analysis focuses on sentences with a view to ascertaining whether the meaning ascribed to a sentence is in reality the meaning such a sentence should convey.

Scholars and researchers who carry out researches share one thing in common namely; the ability to identify problems and proffer, suggest and recommend solutions for solving, resolving and addressing such identified problem(s). This means solving, resolving and addressing problems are at the heart of every research and scholars and researchers locate this section in researches in "the concluding section of any study or academic discourse where scholars and researchers focus exclusive attention in the form of suggesting and recommending remedies or solutions for addressing, solving and resolving identified problems" (Nwaokugha & Nwaogu 2024:64; Nwaokugha & Smith-Ogizeh, 2025:16) In fact, what prescription means in practice is laid bare by Oduor (2010:97), when he writes that "to prescribe is to recommend or set down as a rule or guide" and Nwaokugha (2021:102) says it differently when he writes that prescription:

Is achieved in research in the form of the researcher making autonomous value statements on how an issue that has been the focus or subject matter of a philosophical discussion can be resolved so that all the wrongs noticed in the course of the discussion can be harmoniously addressed.

True, prescription is foundational in every research, however, it is an article of faith without which some disciplines and scholars who major in social philosophy, political philosophy, ethics and aesthetics may not make much sense as they must prescribe and what guides them in what they prescribe is the phenomenon of change and its trends and manifestations in the society. In fact, prescription sharpens vision, raises new consciousness and lays foundations for new signpost for guiding future actions.

It can be said and said very strongly that the use of the philosophical research methodology is epically and phenomenally excellent for this study and this derives justification from the fact that as all human activities and engagements benefit from philosophical insights and rigorous inquiry, which philosophy is known for, the adoption of the philosophical research methodology can increase and expand the epistemological and axiological visions or worldviews of learners in secondary education institutions whereby they can record improvements in their investigative skills, develop curiosity, capacity for creative and critical insights whose consequences can result in their acquisition of capacity for becoming more productive and impactful in their quest and desire for acquiring education presently and in the future. The use of the philosophical research methodology for this study can challenge members of the intellectual community into exploring its multidisciplinary, interdisciplinary and cross disciplinary potentials to boost and promote cooperation and collaboration that can be supportive of conducting cutting edge researches and their concomitant revolutions that can ignite ground breaking breakthroughs in knowledge production, a development that can in addition to boosting the confidence levels of scholars and researchers, improve the general quality of life of mankind as well as the national development of states.

Studies or researches that use the philosophical research methodology are known for a common feature and that feature is a detailed and exclusive focus on key concepts in the study and to this we now turn.

Teaching

Countries of the world look up to education for social reforms, social transformations and the development of their human capital upon which radical, revolutionary and transformative developments of the citizens and their states depend. Education is so looked upon because it helps in reforming and transforming the individual from liability to asset through systematic development of the individual's rational and critical consciousness or capacity and this reformation and transformation the individual goes through empowers him into becoming instrument for positive change, and carrier of the genes that translate into development. Education in this context prioritizes or focuses on developing and fostering the ability of the individual to acquire skills, knowledge and dispositions that are supportive of enhancing the development of the individual's potentials of becoming a catalyst for his cognitive and general development, the development of his state and the development of humanity generally. True, education performs multi-dimensional roles for the individual and his state, the most pronounced and the most visible role of education for the individual and the state upon which other roles of education can manifest is human capital development and a conscious, systematic and professional practice that is foundational, critical and central in bringing about or translating human capital development into reality especially in ensuring that the moralizing, socializing, conscientizing, sensitizing, liberating, emancipating and empowering ideals of education is achieved is teaching.

Teaching as a systematic and professional practice that leads to learning and education is polymorphic in nature simply because it incorporates a lot of activities at the same time. The notion that teaching incorporates a lot of things can be noticed in the way scholars define it. Teaching according to Sequeira (2012) is a set of events of learning while Okoh (2003:71) defines teaching as the conscious and deliberate effort by a mature or experienced person to impart information, knowledge, skills and so on to an immature or less experienced person with the intention that the later will learn or come to believe what he is taught on good grounds.

Okoh (2003) provides clues for understanding teaching as a polymorphous concept when he writes that teaching refers to:

1. A profession
2. An enterprise
3. The art of teaching

Teaching as a profession invokes a meaning that revolves around a conscious activity or practice chosen by an individual or individuals either by choice or compelled by circumstances through which such individual or individuals make a living. Teaching as an enterprise is a network and a conglomerate of combination of professional actions and practices that can hardly stand alone or be separated from the multidimensional responsibilities of a teacher in the process of carrying out the duties and functions of a teacher. Such actions and activities that teachers

engage in across the world where teachers write lesson notes, mark attendance register, mark assignment and examination scripts, set and prepare the learning space (environment) for safety and greater productivity, maintain order and discipline in the classroom etc fall within the frame of reference of teaching as an enterprise. In reality, the art of teaching is the demonstration of relational, communicative, interactive and other professional skills and competences between a teacher and learners in the classroom where the teacher professionally, systematically and logically presents what he intends or wishes to teach to the learners (specific objectives and expect feedbacks evaluation from the learners).

It is important we clarify that teaching is a relational, communicative and interactive practice between a teacher and learner but the system of the relationship is lop-sided in the sense that the teacher is seen as the leader or a more superior person and his superiority is due to his intellectual maturity, experience and professional expertise. The above qualifies him as one who should impact information, knowledge and skills to the learner who unlike the teacher is less mature and less experienced. Teaching as a relational, communicative and interactive process is at the centre of any genuine effort of a people to bring about positive changes in the behaviour of citizens and in translating whatever vision a state has for the development of the state in reality. This is so because teaching leads to learning and education that are critical and central in shaping, changing and influencing the developmental trajectories of individuals and their states.

Across the world, leaders of states who are conscious or desirous of the development of their citizens and their states take into cognizance to the point of making it a norm, the initiation and integration of socially responsive actions and politically responsive policies that ensure that the cognitive development of the people is made a topmost priority and achieving the above is usually done through careful selection of objectives and corresponding pedagogies for their delivery. It can be said differently that leaders of states carefully select the subject matter, that is; topics and concepts to be taught to learners with emphasis on those that are supportive of positive changes in the society. In fact, teaching and learning as a serious business has inherent indexes for determining if any teacher who initiates it is on the right track or not. A proof that teaching has taken place and learning has equally occurred is the extent in which learners demonstrate positive changes in their day-to-day activities. True, the demonstration of positive changes is a fundamental condition to prove that teaching and learning has taken place, however a trajectory that is equally fundamental as proof that teaching has taken place and learning has occurred in the life of a learner is highlighted by Nwaokugha and Moses (2025:442), when they write that such positive changes may include ability to resolve conflicts, make quality contributions to ideas that can lead to human development and the ability to indulge in creative and critical thinking.

Teaching is latently and manifestly unique and its uniqueness is deeply rooted in the fact that notwithstanding the level of expertise of a teacher, the level or degree in which he has prepared and the number of years he has spent as a teacher in the teaching job, the effort of the teacher to effectively deliver especially when focus is on higher order cognitive concepts such as creativity and critical thinking can be impacted negatively by environmental forces. How supportive, conducive, comfortable or how challenging and difficult and how cooperative and collaborative learners are or the availability of incentives at the right time and in the right quantity have a lot of influence in determining how productive a teacher as well as learners can be. What has been pointed out above about teaching is a serious reminder that teaching does not take place in a vacuum rather takes place in a classroom that can best be described as a microcosm of the larger society. An idea which pops up when the classroom which is an instructional space where teaching and learning takes place is mentioned is that the classroom is a place (an instructional space) where people who have different backgrounds, people who have different beliefs, people who have different value systems, different expectations from education and people who come from different socio- economic backgrounds meet for purposes of teaching for teachers and learning for learners. The above graphic description of the classroom is revealing and part of what it reveals is that in addition to being an instructional space, the classroom is equally a multi- complex setting or space where learners demonstrate different behaviors, have different learning abilities, where learner try to bring in and super impose on other learners their idiosyncratic value systems already acquired from their individual homes and are prone or inclined to pursuing different objectives and because of this, there is no stakeholder in the teaching and learning process that can say with certainty that he has a full control of events that go on in the classroom in the course of teaching and learning. It is important we point out that events that occur in the classroom in the process of teaching and learning occur in ways that are not predictable, in ways that are not predetermined, are always occurring simultaneously and all such happenings require immediate and instant judgement and resolution from the teacher. This feature of the classroom expands the roles and responsibilities of the teacher to the point of placing him in positions where apart from his knowledge of subject matter and pedagogy, he is expected to be knowledge in human relations, be a role model, a moral counselor, a right advocate and an arbitrator of justice.

Stakeholders in education are supposed to bear all the above at the back of their minds or make them flashpoints, especially one to focus exclusive attention on or made topmost priority in the course of educating teachers in teacher education institutions. The point is that all the above are inevitable phenomena in teaching and learning in the classroom and the earlier practicing and would be teachers know about them, the better their professional practice.

Discussions that are focused on teaching also involve the teacher as it is the teacher who initiates actions, who manipulates the environment or to use the words of Nwaokugha (2014:14), the teacher is "the man who sits in the driver's seat and creates the necessary environment that facilitates teaching and learning". It is important we point out that it is the teacher who initiates and who explores all the professional intrigues, tricks, actions, use body language, eye contact, comic displays and other maneuverable skills and techniques that individually and collectively trigger in learners the curiosity, zeal and enthusiasm to learn. The teacher is so critical in teaching and learning and by extension human capital development and national development of states so much that all policies of whatever configurations and colourations put up by any state for purposes of introducing innovations, reforms and transformations of the citizens and the state to any levels of the dreams and aspirations of the state must end up on the table of the teacher for final implementation. It is a fact and the fact is as glaring as day and night that well planned educational policies and programmes and national educational policies and programmes that target radically and revolutionally repositioning states and their citizens can be said to be destined to fail irrespective of financial backings, persons and institutions that support such policies and programmes if teachers do not take up the responsibility of ensuring the success of such policies and programmes. The centrality of teachers in the successful implementation of education policies and programmes is highlighted by Nwaokugha and Moses (2025:442), when they write that:

> It is upon his (teacher's) commitment and dedication to duty that any meaningful and impactful success can be achieved in education and on the other hand, any compromise on issues that revolve around him such as lack of dedication, not being committed, not adequate in number, not adequately taken care of in terms of payment of salaries and other incentives and lack of basic and foundational qualifications are direct invitations for failure irrespective of any personality or institution backing such policies, programmes, changes and innovations.

The exalted position and place of honour that is accorded to teachers in education, human capital development and national development has been acknowledge by many states across the globe including Nigeria so much that the Federal Republic of Nigeria (2004) writes that "no education system can rise above the quality of its teachers". It is possible the acknowledged centrality of the teacher in national development discourse can be a deception or at best a subject matter that strongly belongs to rhetorics as in reality, teachers suffer the highest forms of frustration, demotivation and general disenchantment so much that their social status in the society is nothing anyone can be happy about. In what can be described as an idealistic outlook, many persons and institutions sarcastically mock teachers by reminding them that their rewards are in heaven and not here on earth. The full implication of the remark is that teachers do not deserve any form of fair treatment for the work they do and this has been instilled into the psyche of many persons in the society including teachers. The high regard people have for education and the lip service that education faces in reality is worrisome. Nwaokugha and Moses (2025:443) highlight these in these words:

> Teaching is acknowledged as being the noblest profession but reality from history and in contemporary times situate teaching and its practitioners in the category of the most looked down profession and its practitioners among the poorest of the poor, who equally demonstrate and manifest the highest form of powerlessness and general professional disenchantment so much that many teachers continuously look for other employments and those who persist to remain in the profession cannot come closer to those learners they taught in terms of accumulation of wealth, property affluence and influence in the society.

The foregoing situations that teachers face have their consequences and such consequences range from teachers not wanting or allowing their loved ones to become teachers, teaching is systematically becoming a profession where the practitioners are in reverse gear and correspondingly not in tune with progressive value systems, teaching is fast becoming a profession that one can opt for only when one has failed to secure employment in choice and juicy professions, teaching is seriously becoming a profession where ambitious and serious minded practitioners leave in their large numbers, with quacks easily occupying spaces and their impressions are visible on the quality of human

capital that is available in the states, a development that retrogresses quality human capital production and the national development of states.

Learning

Across the world, states that are desirous of sustainable development make learning a topmost priority among the social services that such states provide for their citizens and the attention such states give to learning makes learning a focal flashpoint and an area of focus among scholars. Sociologists, psychologists, educators and philosophers are among scholars who invest resources and devote a lot of attention to issues that border on learning. The attention that the above scholars devote to learning simply derives justification from the premises that human beings by nature have innate ability to adapt, master, understand, cope and control any environment they are in or any environment they find themselves. As obvious as the fact that human beings have innate ability and capacity to learn, the curiosity of scholars from several disciplines as indicated above to show interests in learning heavily lean on the fact that learning is one concept that different variables and different conditions easily affect and influence. That different conditions and different variables easily influence and easily affect learning can be attested to by the attitudes of learners. Learners respond to learning very differently and knowledge of what determines learners' attitudes towards learning can be arrived at after thorough examination of learner's individual and general environment. This is necessary because the economic, social, political, cultural, psychological, emotional and axiological outlooks of a people directly and indirectly affect and influence their attitudinal dispositions towards learning and that the attitude of a people towards learning are indexes or scales for determining and predicting the quality of life of a people and the levels of progress and development that can take place in such environment or vicinity.

Some societies or states have mix attitudes towards learning and this is demonstrated in the way some areas of learning are exclusively reserved for the ruling and upper classes. In such states and societies, some areas of learning especially those that have potentials to sensitize the people against marginalization, injustice, abuse of human rights and proper acquisition of skills that can bring about emancipation, empowerment and general awareness that can enable people to launch a challenge for their liberation and restoration are epically discouraged so much that the masses hardly have access to them. In such states and societies, the commoners are merely provided learning that only socializes them into doing the bidding of the ruling class and advancing the route for their systematic exploitation and enslavement.

Ideally, learning as a concept should be one concept that has potential to bring about liberation, empowerment and emancipation to a people without discrimination. The manifestation of learning in ways that distance it from translating the above virtues into reality can be pointing in direction that learning is fluid and polymorphous in nature and correspondingly a concept that is likely to be defined differently by the different scholars who show interests in it. There have been revelations in the polymorphous nature of the concept of learning and such revelations point in directions where efforts to define learning have resulted to semantic situation where what one scholars prioritizes in his definition of the concept may not be what another scholar can prioritize. In fact, some scholars discuss learning without precisely defining it but give clues that can guide learners and interested members of the learning and knowledge community towards understanding the meaning of the concept. One scholar who approaches learning from the above point of view is Tabacaru (2019), who says that the meaning of learning can be deeply rooted in signaling and invoking dual meanings namely "one to understand the past and one to predict the future".

Apart from the above, there are scholars who associate learning with identifiable attribute and specific developments which learners can manifest as a proof and indication that learning has taken place in them and one of the scholars in this category is Woodworth (1945), who maintains that learning is a consciously initiated action and activity that develops a learner or learners in a way that the learner starts to manifest behaviours and experiences that are different from what he or she would have otherwise have been. The above is similar to the position of Skinner (1957) who writes and associates learning with the formation of new behaviours. A scholar who can be said to be more explicit and precise in his definition of learning is Gagne (1974), who writes that learning invokes a meaning that resolves around visible and observable changes in the life of learners that can be sustainably maintained and repeated over time that however is not linked or associated with growth or maturational process. From another perspective, Nwaokugha and Moses (2025:443) write that "at any point in time the efforts of man to master, control, adapt and understand his environment translates into reality or results to sustainable, superlative and qualitative improvement, what has resulted is learning", a position they slightly modified when they write that " the meaning of learning revolves around one central focus namely "observable, intentional and purposeful change in the behavior of an individual after an experience". The above pops up one revelation that is at the heart of the meaning of learning namely; "a relatively permanent change in the life of an individual that is traceable to experience and not to growth or maturational process" (Nwaokugha & Moses, 2025:444).

It has to be said and said very strongly that learning leads to the acquisition of knowledge and education and is associated with some identifiable attributes that can stratify members of the society in the form of singling out who has it or who has gone through the process of acquiring it from who does not have or who has not gone through the process of acquiring it. Learning has inherent features that commits he who is desirous of acquiring it or who is interested in the pursuit to correspond such ambition with a demonstration of some commitment to its pursuit. What is implied here is that anyone who is desirous of learning must demonstrate and make the seal of curiosity, active engagement, readiness, creativity and critical consciousness visible in any experience he goes through and the individual must be capable of providing space where change, reforms and transformations that can add value to the life of the individual and the affairs of the society can be visible. Such a person must actively participate, actively cooperate, actively collaborate with others who equally are desirous of learning and above all own up responsibility for learning. It has to be stated in clear and precise terms that learning is the responsibility of the learner.

As learning is the responsibility of the learner, every learner who wants to explore the opportunity for learning to its fullest must be open to building up, adding and relating whatever experiences that comes his way into co-creating and co-constructing some new learning experiences and making this a norm in the life of a learner demand him to constantly fix or place himself in a state of mind where he becomes receptive to actions and behaviors that in addition to promoting learning are supportive and conducive of learning. What this translates into is that one who is desirous of learning can constantly identify himself with experiences that can stimulate or challenge him to learn or be in environments that can stimulates his curiosity for learning and not the other way round. We must bear in mind that learning is an axiological pursuit that is the foundation upon which the survival and development of the individual and the state is based. In fact, learning is recognized as a lifelong endeavour that keeps adding mainly positive values to the life of he who shows commitment, dedication, capacity and willingness to learn and one enigma that is associated with learning is that there must be new experiences to be learnt from relationships and interactions with people and institutions and because of these, learning can never be exhausted. True, learning is abstract in nature and keeps producing responses and reactions that divide scholars in terms of identifying and determining indexes for establishing who has learnt and who has not learnt. In fact, identifying and determining who has learnt is one issue that scholars hardly agree on a one size fits all or uniform parameters for establishing it. Be this as it may, clues and guides for resolving this are provided by Nwaokugha and Moses (2025:444), when they write that:

> The index for determining if a learner has actually gone through the process of learning is the extend in which he can receptively indulge in habits and behaviors as well as his development of cognitive capacities that are supportive of the ability to think autonomously, including the demonstration of creative and critical thinking abilities.

Discussions that focused on learning always involve learners and teachers. Learners are unique in every educational institution and society as they are a section and a proportion of the population of a state that are consciously and systematically invested upon and are looked at as the vessel and instrument for the reformation and transformation of the state as they are looked upon for translating and bringing into reality all the dreams, visions, aspirations and transformative ideologies and philosophies that a state and her people wish to achieve. What this means is that learners are critical, curious and creative army of persons, who ideally undergo and are undergoing reforms and transformations in educational institutions or other designated institutions that can enable them possess or acquire the requisite and necessary epistemological, critical and creative capital and resources with which they can rewrite the narratives where there is need, redrive, reinvent, polish, and reposition the state on trajectories and structure or lanes that can bring about positive changes in the economic, social, political, religious, moral, cultural, agricultural, environmental, scientific and technological space so that there can be quality improvement in the life of the members of the state. It can be said and said very strongly that learners are looked upon for straightening, sustaining and translating the plans of the founding fathers of states and societies into reality, especially when the mantle of leadership is transferred to them. The whole idea of providing learning and investing heavily in institutions whose core mandate is the provision of learning for learners in a state is to empower the citizens of the state in all ramifications, a development that in reality is in the best interest of the state. The simplest translation of what has been said above is that the focus and target of all the investments on learners by the state, institutions and individuals is targeted at raising a generation of people who can sustain the sustainable development of a people and their state. The foregoing is revealing and part of what it reveals is that states that are conscious of their development and states that are commanding influence globally are those states that have invested in their learners and possibly those states that are underdogs and may continue to be underdogs are those states that have not taken investments in their learners very seriously.

Teachers on the other hand are the educators of the learners and the ability of the dreams of the founding fathers or leaders of states to translate into reality in terms of having curious committed and development conscious learners

who can deliver and not disappoint on the development stake depends on the number of teachers, commitment of the teachers and the devotion of the teachers to the task of human capital development. This means the teacher is a key stakeholder in any meaningful discussion that borders on human capital development upon which the development of a state and its people depend. It is correct to say that the learners who are the carriers of the genes that trigger developments are the products of the teacher. Equally states that have made their marks on the development space are those states that have made the right investments in their teachers, teacher education and education generally while those states that perpetually remain developing and under developed are those states that do not make the right investments in their teachers, teacher education and education generally.

The attitude of a people and their state towards learners, teachers, teacher education and education, generally can influence decisions concerning the curriculum, and the selection of what should be taught. In the same way, it can produce good and bad effects on learning and the learner and this is a reminder that learning, the learner and the ability of the teacher to initiate actions that can be supportive of learning and conducive for learners can be affected and influenced by many factors.

Secondary Education

Ensuring that quality human capital for the development of a state and quality education is provided for the citizens of a state is one cardinal responsibility that can be used in determining how responsible and accountable leaders of states are to their people. Responsible states and responsible leaders ensure that there are comprehensive blue prints and inclusive frameworks for education so much that there can be no layer of the population of the state or society that cannot be covered in the educational arrangements of states for their citizens. This outlook that ensures a comprehensive blue print and an inclusive approach to education is deeply rooted in moral rationality that recognizes education as a fundamental human right, which every citizen must enjoy on grounds of his humanity without restrictions on the basis of religion, social economic status, nationality, level of education, religion, political ideology or circumstances of birth. In a way, the moral sermon of education as a fundamental human right is that on no account should anyone be denied education and educational opportunity. In fact, education as a human right is premise on the principle that education is a social good and it is foundational and should be taken as a foundational responsibility of any responsible parent and any responsible state to provide it as a building block as well as a strategy for the effective empowerment that can enhance the effective functioning of any individual. The guiding belief is that whoever has been provided with education at least to a given threshold has been empowered with intellectual and cognitive skills that can enable the individual to fit in, adjust, respond and explore opportunities in the society.

On the basis of this, states structure their education along lines where there is early childhood care and education, primary education, secondary education and tertiary education and reference and focus can be made to any of the levels above base on the interests of a scholar or institution. Secondary education according to Federal Republic of Nigeria (2004:18) is the education children receive after primary education and before tertiary education. Without any iota of doubt, this level of education is very critical in influencing and determining the chances of survival of the individual and the general developmental trajectories of any state. This is so because learners who graduate from this level of education have some options either to engage in other activities like learning trade, engage in commercial or entrepreneurial activities or to proceed further to the tertiary education levels. The above dual or multiple trajectories of secondary education is highlighted by the Federal Republic of Nigeria (2004:18), when it writes that the broad goals of secondary education shall be to prepare the individual for:

a. Useful living within the society, and
b. Higher education

The Federal Republic of Nigeria (2004: 18) however elaborates in specific terms the target of secondary education to include:

a. Provide all primary school leavers with the opportunity for education of higher level, irrespective of sex, social status, religious or ethnic background.
b. Offer diversified curriculum to cater for the differences in talents, opportunities and future roles.
c. Provide trained manpower in the applied science, technology and commerce at sub-professional grades.
d. Develop and promote Nigerian languages, art and culture in the context of world's cultural heritage.
e. Inspire students with a desire for self-improvement and achievement of excellence.
f. Foster national unity with an emphasis on the common ties that unite us in our diversity.
g. Raise a generation of people who can think for themselves, respect the views and feelings of others, respect the dignity of labor, appreciate those values specified under our broad national goals and live as good citizens.
h. Provide technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development.

It is important we emphasis that whichever option the individual chooses as a learner at the secondary education level; either to opt for useful living within the society or to transition to higher education, there is one cognitive and intellectual development that is sure, namely, the development of the learner's ability and capacity along lines where the learners think critically or more technically where they indulge in critical thinking.

Critical thinking

Human beings are naturally endowed with innate potentials and innate abilities that trigger in them the curiosity to strive or thirst for development, which robustly and phenomenally is a value- laden concept. Development as a value-laden concept is multifaceted and multidimensional and its multifaceted and multidimensional nature is deep rooted in the fact that many individuals and states recognize and acknowledge many indexes and variables for discussing development. It can be said differently that development as a value-laden concept revolves around the fact that the recognition, respect and honor that states enjoy in comity of states is deep rooted in the availability of human capital and infrastructural facilities that the states are able to put in place, which on their own are reflections of the commitments of the leaders of states in terms of demonstrating priorities that occupy space in the policy trajectories of the state. Priority on the development of human capital in the development plans of states derives justifications from the premise that human beings are the carriers of the genes that translate into development and emphasis on the provision of infrastructure is to promote a welfare policy that targets adding value to the quality of lives of the citizens of the state. In reality, a combination of human capital and infrastructure in the right number determines the rhythm and speed with which development can take place in a state and consequently the basis for determining the label or description such as developed, developing and underdeveloped that a state can be identified with. In all of these, one denominator that is a sure bet for promoting and triggering development from where development has become a norm is the ability of the citizens of a state to indulge in critical thinking.

Critical thinking as a concept is unique and its uniqueness stems from the fact that all curious actions and activities of man and his institutions that result in quality and superlative breakthroughs, progress, development and advancement must bow to the superior power of critical thinking. On the basis of this, critical thinking is fundamental and foundational for development in all ramifications. An acknowledgement of the fundamental and foundational underpinning of critical thinking in human and institutional development and survival has resulted in an overwhelming popularity of critical thinking especially as an academic and philosophical pursuit in which scholars and disciplines focus exclusive attention.

As an area of academic and philosophical pursuit, the epistemological territory or constituency of critical thinking has become epically and phenomenally inclusive and comprehensive, a development Nwaokugha (2018:120), hints at when he writes that:

> There is hardly any area of human endeavour ranging from the simplest to the most complex that does not appeal to critical thinking for resolving the ever- present conflicts and crises that characterize human actions and activities especially in the 21st century.

The above is revealing and part of what it reveals is that critical thinking has vast areas of application and as an area in the pursuit of knowledge that has vast areas of application, critical thinking can naturally be a complex subject matter that has the capacity to attract attention of scholars and disciplines and at the same time insight and trigger disagreements amongst scholars and disciplines in the form of scholars and disciplines developing and showing phenomenal interests in discussing one concept and at the same time not agreeing on a one size fits all definition of the same concept. Part of what accounts for the complexity in defining of critical thinking is the recognition that there are philosophical and psychological approaches to defining critical thinking. According to Nwaokugha (2018), the philosophical approach to defining critical thinking pays extensive attention to those features which an ideal critical thinker should possess while psychological approach stresses behavioural attitudes and skills that a critical thinker should have.

The complexity in not having a one size fits all definition of critical thinking may be associated with an aura of optimism. It can be said and said very clearly that rather than the plethora of definitions of critical thinking to be a springboard and a pathway to limiting its overwhelming influence in the world of knowledge, such multifaceted and multidimensional approaches to defining and redefining critical thinking can be said to steadily and continuously widen, strengthen and beam searchlights in new epistemological territories and constituencies in the knowledge world that works for the improvements of man and his institutions. In fact, such endeavors at defining and redefining critical thinking according to Nwaokugha and Abiakwu (2017:107), highlight the ability of man to use his natural thinking faculty in directions that can provide effective clues and remedies to the numerous problems of man and his society. This is fundamentally and foundationally true as despite the epical and phenomenal interests on critical thinking by disciplines, scholars and institutions, critical thinking as a concept lacks a univocal or a one size

fits all definition and in place of a univocal or a one size fits all definition for critical thinking, there is a plethora and avalanche of definitions of critical thinking.

According to Klooster (2001:2), critical thinking is simply independent thinking and this is close to the position put forward by Nwaokugha (2018:121), who writes that critical thinking is analytic thinking and Karakoc (2016:81), who also writes that critical thinking "is sometimes referred to as critic -creative thinking". In his own remark on the concept of critical thinking, Chance (1986), writes that critical thinking is the ability to analyze facts, generate or organize ideas, defend opinions, make comparison, draw inferences, evaluate arguments and solve problems while Lai (2011:2) writes that "critical thinking includes skills of analysis, argument, making inferences using inductive and deductive reasoning, judging or evaluating and making decisions or solving problems. According to Enis (1992), critical thinking is a reasonable, logical, rational and reflective thinking that is focused on deciding what to believe or do while Bailin, Case, Combs, and Daniels (1999:285) write that "critical thinking is a normative enterprise in which to a greater or lesser degree, we apply appropriate criteria and standard to what we or others say, do or write". To Siegel (1988:23), critical thinking is made up of two components which are "the ability to assess reason properly" and "the willingness, desire and disposition to base one's actions and belief on reason" while Tama (1989) writes that critical thinking is a way or method of reasoning that demands adequate support for one's beliefs and unwillingness to be persuaded unless support is forthcoming.

According to Halpern (1998, 1999) critical thinking is a kind of purposeful, reasoned and goal-directed thinking that one needs in order to solve problems, make decisions, formulate inference and calculate likelihoods. A more detailed, inclusive and comprehensive discussion and definition of critical thinking is provided by Nwaokugha (2018:121), when he writes that:

> Critical thinking can be conceived as an exploration, adventure or expedition that maintains a cyclical relationship, starting with an identified subject matter upon which analytic speculations are made that target generating knowledge and using knowledge and facts generated to recreate ideas and suppositions that can be employed to further explain the fact that was the subject matter of the process of the reflective speculation and more importantly all such efforts are geared towards either illuminating a particular subject matter or solving real problems.

Any incisive observer of the various definitions of critical thinking can notice that the act of critical thinking is inclusive as it incorporates many scholarly dispositions and demands from anyone who is interested in the act of critical thinking the rejection of memorization of facts in its totality but is supportive of behavioural dispositions where individuals initiate the process of thinking by themselves, develop attitudes of questioning assumptions, learn to analyze and synthesize issues and arrive at new conclusions that can be used in resolving issues or conflicts base on available facts. These point in the direction that generation of ideas for the resolution of issues and conscious initiation of blueprints for the advancement of man and his institutions are the target and destination of critical thinking.

To this end, whosoever is interested in critical thinking must have unique charismas, some of which include willingness to show curiosity in the search and advancement of knowledge, which the individual can demonstrate through developing abilities and capabilities for questioning some deep seated dogmatic and retrogressive assumptions, learn to be less emotional but make the virtues of open-mindedness a norm and a guiding philosophy in his day to day activities, especially developing behavioral dispositions that accommodate the ideas and opinions of other people without compromising and undermining one's ability to be skeptical. In the same way, individuals whose behaviours are receptive to critical thinking must be persuasive through arguments, precise in presentations and expressions, reflect, illuminate and make sense of abstract ideas and more importantly bow to ideas that are superior to one's own. Such individual must bear at the back of his mind that critical thinking is a-do-it-yourself cognitive, reflective and rational exercise, which means that critical thinking is autonomous independent thinking on an identifiable subject matter or issue that can be relied upon in bringing about change, address and resolve moral, social, economic, political, scientific, technological and general problems of the individual or humanity generally.

From the above, it is obvious that indulgence in the act of critical thinking brings about some benefits especially to learners and other members of the society in many ways: critical thinking improves individual's and learners' ability to learn language, to be articulate as well as precise on how to make presentations especially in expression of ideas. The ability to indulge in critical thinking is a sure and fundamental foundation for finding solutions to the ever-present and ever complex problems of man. Critical thinking is a necessary foundation and practice for `stimulating and triggering in man the dispositions for philosophical reflections in the forms of self- reflections and self-examinations, developments that have potentials for conscientizing and sensitizing man into habits of regularly evaluating his daily decisions, practices, actions and values. In fact, such behavioural dispositions can sharpen and

can activate one's consciousness such that one learns to guide oneself from external interference and intrusion. That this is the case is a pointer that critical thinking supports orderliness, peace, decorum, social stability and progress. Ability of individuals especially learners to indulge in critical thinking is a quality assurance mechanism that educational institutions, their products and stakeholders are meeting up what the society expects from them and this is a portrayal and an indication that educational institutions, their products and stakeholders can identify, address, handle and resolve their challenges, the challenges of other institutions and this in all honesty and sincerity is a big plus for humanity generally.

From the revelation above, critical thinking can be said to be fundamental and foundational in the policy direction of any people or state that is conscious and desirous of human capital development and national development and correspondingly its teaching and learning ought to be a priority area and a focal flashpoint in the education that states provide for their citizens. However, a regret that stares all of us on the face is that as obvious as the teaching and learning of critical thinking is fundamental and foundational for human capital development and national development, there has not been commensurate attention from stakeholders and educational institutions to ensure that the teaching and learning of critical thinking, receive its rightful place in the education of learners. It is an open secret that the curriculum and the pedagogy of its delivery in educational institutions in Nigeria discourages critical thinking and its development in learners in addition to being epically and phenomenally shallow on systematic strategies for the development of critical thinking abilities and capabilities in learners, even when behaviours, events, policies, happenings and actions in the Nigerian state can be direct invitation and robust sources of motivation for the teaching and learning of critical thinking in Nigeria. These not-too-good-attitudes to the teaching and learning of critical thinking can be linked to some impediments in the Nigerian society. The next section of the study exclusively addresses the impediments to the effective teaching and learning of critical thinking in secondary education institutions in Nigeria.

Critical thinking: Basic impediments to its effective teaching and learning at secondary education institutions in Nigeria.

Education is regarded as a social good and a social provision that humanity without exception to levels of developmental sophistication or lack of it looks up to for guidance, reforms and general transformation of the people and their state. Ideally, the reforms and transformations that education brings about are those that stimulate positive developments through influencing and promoting human behaviours that add value to the quality of life of the citizens on one hand and on the other providing and generating conducive environments which institutions in the state can explore for improving their visibility and productivity. Naturally, education is dynamic and its inherent, dynamic features enables it to continuously revive, reinvent and overhaul itself so much that there are always rooms for the inclusion or addition of new contents and instructional objectives and the removal of contents and instructional objectives that have outlived their usefulness or have become obsolete. In all of these, critical thinking remains one instructional content and instructional objective that is the heartbeat of any worthwhile educational provision but any curious observer can notice that it continuously faces impediments that affects its effective teaching and learning particularly at secondary education institutions in Nigeria.

One major impediment to the effective teaching and learning of critical thinking at secondary education institutions in Nigeria is the nature of critical thinking itself. Anyone who takes a careful look at the definitions of critical thinking can notice that its inclusive and comprehensive outlooks cover vast areas of epistemological spaces that in reality have potentials to make its teaching and learning very difficult for the teacher and the learners at the secondary education level to pinpoint exactly the epistemological focus of critical thinking or what studying critical thinking requires from the learners. True, critical thinking can be credited with being foundational and fundamental assets for prosperity, growth, empowerment, improved academic achievement and better professional practice, however, stressing the teaching of the basics or fundamentals of critical thinking such as ensuring that learners learn how to conceptualize, how to apply, how to analyze, how to synthesize and how to evaluate without stepping it down to the level of learners at the secondary education level can become obstacles due to the impressionable minds of the learners at this level of education. It needs to be pointed out that critical thinking is a mental and higher order cognitive process and teaching it to learners at secondary education institutions requires taking into cognizance the age of the learners.

Taking into cognizance the age of the learners means leaving the teacher with the task of fragmenting and providing fragmented interpretation of concepts and situations that can stimulate critical thinking in learners. In doing this, there are possibilities that the teacher who may have not been exposed to critical thinking in the course of his teacher education programme or who manifests epical and phenomenal critical thinking deficits can make things more difficult for the learner. This means that a fragmented and developmentally appropriate approach may be used by teachers in teaching critical thinking at this level of education and this is not without consequences. In fact, for the

simple reason that fragmentation can be allowed or is the norm in the process of teaching and learning critical thinking at the secondary education level, just to accommodate the level of learners may be revealing the prevalence of compromise that can undermine the selection of what to teach the learners, what level of interpretation to provide for learners and there may be fears and uncertainties on the possibilities of teaching learners concepts that can be above their mental age. These are dilemmas for the teacher that can stimulate or produce mixed feelings in him. The foregoing points fingers at the difficulties of teaching critical thinking at the secondary education level and this is highlighted by Changwong, Sikkamart and Sisan (2018:40), when they write that "teaching critical thinking is one of the most important, if not the most difficult burdens in the classroom, and it can be so because most learners at the primary and secondary schools are not provided with the right foundations for mastering it. Fajri, Grinting and Simanjuntak (2023), are on point when they write that this conventional learning applied by teachers in schools cannot form students' critical and creative thinking skills properly". In fact, it has been established that one impediment that is associated with the way teacher teach critical thinking is that it multiplies learners' difficulties especially when associating a concept with one another (Fijri et al 2023).

In situations where critical thinking is taught to learners at the secondary education level, teacher and examination bodies find it extremely difficult to measure and evaluate it either autonomously as a subject or in the various school subjects that stakeholders claim are the trajectories for teaching critical thinking. A question that this development pops up is: why teach an aspect of knowledge that cannot be measured or evaluated? This deficit can be blamed mainly on teachers as noted by Ganapathy and Kaur (2014), who write that teachers lack pedagogical knowledge and expertise to initiate pedagogical actions that are supportive of integrating critical thinking skills in their lessons and the result of this deficit has been the inability of teachers to provide the right answers to foundational critical thinking skills in their lessons and the result of this deficit has been the inability of learners to apply critical thinking skills in addressing, solving and resolving their day to day crises. The inability of learners to master the skills of critical thinking has equally been blamed on the teacher. According to Celik (2021:195), teachers showed a significant deficiency in behaviours that are supportive of developing critical thinking skills in learners in the classroom, a development he tries to locate the source when he says that "there is no material in the training programmes of teacher training institutions nor an in-service training by the ministry of national education in KPI that addresses behaviours teachers can adopt to support critical thinking". The foregoing is revealing and at the centre of the revelation is that teachers and the methods of their teacher education programme as structured and mounted by states constitute major fundamental impediments to the teaching and learning of critical thinking at the secondary education level.

The environment any individual is born into, the type of culture, economic, political and social arrangements that exist in such environment have a lot of influence on the cognitive development of that individual and his society and it can be correct to say that the labels today that have polarized the world into developed, developing and under-developed states of the world may be traced to the environment individuals find themselves. Environments that afford citizens the opportunity to express themselves, explore opportunities, initiate ideas and meaningfully contribute to the development of the self and humanity can be said to produce citizens who can existentially manifest autonomous traits and other features for survival than those citizens who live in environments where people are not free to existentially and autonomously express themselves, explore opportunities and initiate ideas that can lead to self-development and the development of humanity. It is equally correct to say that institutions in the state mirror, sustain and pass over all the prevailing practices and ways of life of the members of the society to the future generations and attitudes that derive from the environment have potentials to constitute impediments to the effective teaching and learning of critical thinking especially in cultures and societies where status quo is celebrated.

A practice that is common in cultures and societies where status quo is celebrated is the use of dogmatic traditional institutions for the socialization of the citizens and this practice hardly allows the citizens the opportunity to think out of that which is prescribed by the traditional institution and whoever thinks outside that which is prescribed by the traditional institution is accused of not conforming with the cultural ethos of the society even when it is obvious that the cultural practice is illogical, irrational and is a cover up for some members of the society to take undue advantage of other members of the same culture and society. Any society or culture where fundamental dogmatism is a norm and a normal way of life cannot lay foundations for the development of critical thinking skills in its young one or citizens and institutions in such a society and culture are likely to uphold the prevailing dogmatic norms of that society.

In most Nigerian cultures and societies, some young ones who demonstrate exceptional creative, critical and cognitive intelligence that are receptive and conducive for the development of critical thinking skills are suspected to be the reincarnate of Satan and demonic spirits and therefore must be surprised, stigmatized, intimidated and marginalized in a manner that such individuals must not be allowed to develop such critical thinking abilities. Such societies and cultures sometimes go extra-mile to dedicate such persons to deities and in extreme cases "waste" such

individuals. What sustains this anti-intellectual and anti-critical thinking behaviours in most Nigerian societies and cultures is the prevalence of an order where the status quo must not be challenged even when such practices that derive from the status quo are deeply steeped and deeply rooted in ignorance, which can be a direct invitation for challenging such practices. In fact, practices in most Nigerian cultures and societies are still super dependent on the culture and tradition of the people and are the basis for the cultural socialization of the young ones even when they have no logical and rational basis. One thing that needs to be noted is that the prevalence of culture and tradition promotes behavioural dispositions that undermine and prohibits the development and demonstration of critical thinking skills in any of its ramifications. It can be stated and stated very unequivocally that the continuous reliance on illogical and irrational fundamental tradition and cultural dogmatism for the socialization of learners terribly undermines the development of critical thinking skills and is detrimental to the learner and global citizenship as it only promotes the interests of the status quo and more dangerously creates curricular and pedagogical clash in the personalities of the learner and the teacher concerning where to pay allegiance to, namely should the teacher and the learner, maintain what tradition and culture prescribes or should the teacher teach the learners the globally accepted standards for developing the abilities and capabilities for critical thinking in learners. This clash constitutes a great impediment to the effective teaching and learning of critical thinking.

The roles of culture and tradition in constituting impediments to the effective teaching and learning of critical thinking is a global phenomenon. Highlighting this, Ng (2001) writes that "in Asia, creative and critical thinking is culturally limited as Asians place a great emphasis on obedience and conforming to group expectations". It can be said and said very strongly that conditioning a people to obey and conform to group expectations in any environment is a systematic creation that provides robust opportunities for the exploitation of the masses by the status quo whose grip on the environment instills in the people a consciousness that the prevailing oligarchy, human rights abuse and their various associated injustices are normal in nature, a development that under normal circumstances citizens who have critical thinking abilities can challenge. It is important we state the inability of the citizens to develop their critical thinking abilities instills in them the acceptance of all the condition prescribed and super imposed on them by the status quo so much that anything to the contrary makes the people develop feelings of "losing face as a result of appearing different".

CONCLUSION

Societies are yet to find any sustainable replacement for education in terms of any social provision that is supportive of revolutionary reforms and transformations that prioritize human capital upon which the national development of states depend. The high regard societies hold for education is deep rooted in the fact that education is instrumental for initiating revolutions for radical and revolutionary reforms and transformations at all sphere of human endeavors and education is equally responsible for driving and dictating the directions of progress and development both in the present and in the future.

One inherent feature that makes education a unique pursuit is that it has dynamic mechanisms for reshaping and correcting itself in readiness for addressing and meeting up the needs of the people. This mainly happens in states where stakeholders in education are receptive to change in addition to being visionary.

Of all the qualities that education develops in human beings, the development of the capacity for critical thinking stands out. Ability to think critically is the engine block hub, foundation and wheel that drives the success of education and efforts at developing the capacity for critical thinking in human beings are best achieved in the tender age of learners presumably during the secondary education phase of learners. The justification for this is that secondary education is that phase in the educational pursuit of the learner where the learner makes critical decisions about his future in term of possible career lines or prospects upon which his survival in the future can depend. At this level the learner decides whether to go for a trade or to further his education and these critical decisions that learners make at this level of their education make the teaching and learning of critical thinking a foundational and fundamental necessity for learners at this level of education.

It can be noted that the ability of learners at the secondary educational institutions to effectively indulge in critical thinking can be a guide for assessing the quality of education a state provides to its citizens a foundation to determine the quality of products of the education system as well as the litmus for determining the possible direction of the development of the state and its people. Regrettably, the development of the capacity for critical thinking in learners at the secondary education institutions particularly in Nigeria has not been rosy as there are mountainous impediments that militate against the effective teaching and learning of critical thinking.

The method of socialization of the younger ones is one in which the norm upholds the maintenance of the status quo as well as one where it is an unpardonable taboo for the young ones to indulge in critical thinking by resorting to question some deep-seated assumptions. To be expected, education generally and the formal education system in particular can be influenced by the norms in the environment in which it takes place and the implication of this for

critical thinking is that the development of critical thinking skills in learners may be played down or not emphasized as a key component in the curriculum of teacher education institutions that produce teachers for secondary education institutions and the curriculum used by secondary education institutions in Nigeria. This is a double barrel tragedy for critical thinking and learners in secondary education institutions on one hand and the national development of the Nigerian state on the other and like the saying goes, one cannot give what he does not have as a teacher who is without knowledge of critical thinking cannot teach it effectively to learners and learners who have not been taught the skills of critical thinking can hardly practice what they have not been taught or exposed to.

A paradox in the foregoing is that a fundamental responsibility of education is to develop the critical thinking abilities of the learners and where this does not occur, education can be said to have failed or put slightly different, human capital development and national development of a state can be said to have been put in a reverse gear where critical thinking is not a priority particularly among secondary school students.

True, there are obvious impediments to the effective teaching and learning of critical thinking and such impediments to the effective teaching and learning of critical thinking in secondary educational institutions in Nigeria are resolvable and may be addressed through systematic and well-planned actions especially conscious actions by all the stakeholders in education. The ministry of education through the various units that are in charge of curriculum development can work out modalities for developing and establishing critical thinking as an autonomous school subjects in the school system in view of the foundational roles of critical thinking in helping to define and provide guidelines for evaluating and accessing the education system, its products as well as serving as yardstick for predicting the developmental trajectories of the state rather than claim that critical thinking and systematic ways of teaching it is incorporated in all the existing school subjects. A move in the direction as said above can reflect or illuminate some advantages. It has potentials to widen the curricular and pedagogical spaces in education in the form of making available more areas of specialization for teachers and reading materials on critical thinking that can take into cognizance developmentally appropriate levels of the various learners in secondary educational institutions in Nigeria. Making the teaching and learning of critical thinking a top-most priority among secondary education students can help to rejig the human capital base of a state and through this way fast track the national development of such a state.

In the new narrative of prioritizing the teaching and learning of critical thinking, focus can be on educating learners along trajectories where emphasis can be on ensuring that learners demonstrate skills of critical thinking in all their day-to-day endeavors. A quicker way of ensuring that this comes to friction can be to develop systematic pedagogical strategies of examining, testing and evaluating learners in skills of critical thinking.

Teacher education institutions can leverage on the challenges exposed by the lackadaisical handling of critical thinking in secondary educational institutions in Nigeria as a wake-up call for repositioning themselves in readiness for quality service delivery to humanity that targets addressing critical issues in human capital and national development in Nigeria and beyond. Situations where teacher education institutions assume that some school subjects and concepts can be taught in the process of teaching other school subjects is an epical and phenomenal deception that should not be promoted by teacher education institutions, rather teacher education institutions should discard the excessive conservatism they are known for and replace them with intellectual revolution and curiosity where desire and drive for continuous experimentations and breakthroughs that target innovations that align with contemporary realities become norms. Guiding the society and the entire humanity along lines where epistemological revolutions, reforms and transformations especially the pursuit of the knowledge of critical thinking becomes norms should be made the priority of teacher education institutions. It is a fact that cannot be doubted that where teacher education institutions reposition in readiness for embracing epistemological revolutions, reforms and transformations, teacher education programmes can realistically help to change the image of the teaching profession as well as skyrocket the quality of practice by its practitioners that in turn may impact positively on the quality of human capital that is the foundation for facilitating and promoting the national development of the Nigeria state.

Teacher education institutions can resolve to make the knowledge of critical thinking compulsory for every would-be teacher, a development that can boil down to developing courses in critical thinking and making the teaching and learning of critical thinking a topmost priority in secondary educational institutions.

As environment, culture and tradition of a people exert influences on the ability of a people to think critically or not to think critically, conscious efforts can be made to conscientize and sensitize learners on the critical roles of the environment, culture and tradition in either promoting critical thinking or undermining the development of critical thinking skills and abilities. Such efforts can be deep rooted in providing learners robust opportunities to reflect on culture and tradition with emphasis on learners establishing and determining for themselves the possibilities of the environment, culture and tradition constituting impediments to the development of critical thinking skills especially in developing and underdeveloped countries on one hand and also identify strategies for exploring culture and tradition as trajectories for developing critical thinking skills in society where culture and tradition promotes critical

thinking. Such efforts can be the beginning and turning point for initiating learners in secondary educational institutions into the act of critical thinking.

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