

## Principles of Rational Pedagogy: An Insight on Kenya's Competence Based Curriculum (CBC)

Dr. Tom Destiny Namwambah  
Kenyatta University Nairobi Kenya

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**Abstract:** *The transformational role of education in human endeavor cannot be overemphasized. The basic function of education is to develop, in a holistic way a well-balanced, self-functioning and responsive individual who can spur development and transform the self and society. The emphasis on the intellectual and skill development of the human person is premised on the need to produce individuals capable of translating what is learnt into pragmatic programs as to be able to improve conditions under which humans live. To meet this transformational obligation, the government of the republic of Kenya through the Ministry for Education in 2011 established the Task Force under the stewardship of an eminent scholar Prof. Douglas Odhiambo with the sole mandate of rethinking and realigning education to the new Constitution 2010 and Vision 2030. As a consequence of Prof. Odhiambo's Task Force recommendations, the Kenya Institute of Curriculum Development (KICD) in consultation with the Ministry of Education in 2017 developed the current Kenya Competence Based Curriculum (CBC) as the best alternative to 8-4-4 system. In justifying the need for this change it was claimed that CBC emphasizes the importance of developing skills and knowledge by applying competences exhibited to real life situations. It was also supposed that central to CBC are some core competencies that it aims at infusing into the learners of which the key is the ability to think critically and creatively. Drawing parallels from the USA where the concept of critical thinking is emphasized in education, and by reflecting on the Kenya government preparedness in terms of overall cost, human and physical resource; and content development for effective rollout and transition, this article explores the necessity of education in the critical faculty as the best avenue to the inculcation of skills, dispositions and traits definitive of value creating education for holistic human development.*

**Key words:** *Pedagogy, value education, critical thinking, critical faculty, competences.*

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### I. Introduction

The value of education in human and societal development has been echoed and emphasized since the ancient times and continues to be central to human endeavors to-date. The leader of America's Civil Rights Movement Martin Luther Jr (1929 – 1968) once observed that: *"the function of education is to teach one to think intensively and to think critically. Intelligence plus character - that is the goal of true education"*. His emphasis on the centrality of education to human and societal development is also underscored in the wisdom of a renowned philosopher of the contemporary times - Bertrand Russell (1872 – 1970) who proclaimed that: *"education that transforms is the only education of which it can be truly said that it makes good citizens"*. A renowned American behavioural psychologist Burrhus Frederic Skinner (1904 – 1990) affirms that *"education is what survives when what has been learned has been forgotten"*. The icon of freedom in Africa and the greatest statesman of all the time Nelson Rolihlahla Mandela (1918 – 2013) asserted that *"education is the most powerful weapon you can use to change the world"*. The wisdom of these great thinkers and of many others before and after them cannot be undervalued. The role of education in transforming human society has been attested to and demonstrated in many circles of human endeavor.

Despite our knowledge of the key role education is supposed to serve in human endeavor, we are often hard-put to realize and net the best practices and avenues towards achieving that basic goal. Instead of mid-wiving knowledge, we often force content down the throat of its recipients, suffocating them in the process. Instead of treating the chronic illness of ignorance, we incessantly perpetuate it through spoon-feeding and proselytization. William Arthur Ward (1921–1994) a renowned American inspirational maxims writer once quipped: *"the mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires"*.

Socrates, the epitome of perfected pedagogy discovered that by a method of systematic probing questionings, people could not rationally justify their confident claims to knowledge. In our efforts to dispense knowledge in the critical sense, we are often imprisoned by our own egos, incessantly misconstruing appearances as reality. Our attempts to profess knowledge are curtailed by perpetual intellectual limbo occasioned by a mental

laxity that banishes our curiosity to unawakening dogmatic slumber. According to Socrates, this is often prompted by the fact that confused meanings, inadequate evidence and self-contradictory beliefs often prowl beneath our smooth and yet largely empty rhetoric. In his teaching, Socrates established the fact that we cannot always depend upon those in "authority" to have sound knowledge and insight, and that knowledge is best cultivated in a motivating and mutually cost-sharing and interactive environment. He demonstrated that persons may have power and high position, or even be highly qualified and yet be deeply confused and irrational. In his teaching, Socrates established the importance of asking deep questions that probe profoundly into thinking before any idea is accepted as worthy of knowledge and belief. He was cognizant of the three essential conditions for knowledge, namely: *i) the belief condition, ii) the truth condition; and iii) the justification condition.*

As a criteria for assisting his learners to cultivate knowledge, therefore, Socrates established the importance of seeking evidence, closely examining reasoning and assumptions, analyzing basic concepts, and tracing out implications of not only what is said but of what is done as well. Many centuries after him, Socratic questioning and/or teaching method still remains the best known teaching strategy not only for critical thinking but also for value creating education in human development. His method highlighted the need in thinking for criticality, clarity, precision and logical consistency.

In the contemporary world universities are the repositories of knowledge. When we join universities we are supposed to be matured in knowledge, understanding and intellectual etiquette. Universities are meant to be centres of excellence, research, innovation and dissemination of knowledge that transforms individuals from dependence to independence, individualism to individuality, mediocrity to excellence, latency to liberal ingeniousness, from meaninglessness to meaningfulness, from ignorance to awareness, and from mere consumers of knowledge to authors and dispensers of knowledge. University education is meant to add value, create a sensible global citizen and trigger self and national development. With this understanding, I am led to ponder over a number of critical questions:

- i) What are the epistemological indicators for value creating education?
- ii) How often do we at the university level take time to ponder on what education is, its significance, in what it consists and what value we need to achieve when we get to class?
- iii) How many of us understand the transformational worth of education in the critical faculty?
- iv) How many of us teach with a view of assisting the learner to discover and cultivate the inner hidden potentials?
- v) Beyond the need to impact content in our subject domains to the learners, how many of us are capable to think outside the box, be creative and trigger the mind into discovering new tides in our subject areas?
- vi) How committed are we to pursuing the best practices that education is supposed to serve?
- vii) How often do we encourage our learners to listen to their inner voices?
- viii) How often do we teach for knowledge-fusion away from exam-oriented drilling?
- ix) How often do we encourage our learners to ask deep probing questions without taking offence?
- x) What qualities do us, individually or collectively display in order to inspire, motivate and encourage our students to academic enterprise and virtuous citizenship– Are we our students' role models or dreaded despots?
- xi) What developmental value does your discipline contribute to the national development agenda?
- xii) Are we rationally disposed as dispensers of value creating knowledge or routine, yellow-paged armchair conveyors of information?
- xiii) Where, in terms of academic ingenuity, value creating education and professional etiquette do we stand as dispensers of knowledge?
- xiv) Why do we feel debased when our students correct us when we err?
- xv) How many of us can claim to be Socrates incarnate?
- xvi) When we leave our houses to go to work, what motivates us? Love for knowledge, love for the subject? Eagerness to keep the job? Fear of losing the job? Or a desire to transform society and add value to the worth of human and national development?
- xvii) How often do we teach our students to think critically through the content of our discipline?
- xviii) How interactive are our classes?

These questions are significant to us if we want to produce well developed, highly knowledgeable and competent citizens that the world can rely upon. We are not being compelled to provide conclusive responses to the above questions, but rather we can use the queries as a guide to our reflection on how we perceive education, its value and its overall contribution to our mental growth and national development. I am however inclined to believe that, were it a condition that we respond, most of us will miserably fail the test.

As earlier intimated, universities are meant to be centres of excellence where knowledge is generated and dispensed; and where research that informs inventions and national development is originated. Universities are supposed to be at the peak of thinking, creativity and innovation. And although this is supposed to be the reality, research in the field of universities' capacity to elucidate what education is supposed to serve attests the contrary. For example, the overall results of a research conducted by Dr. Richard Paul, Dr. Linda Elder and Dr. Ted Bartell in 1995 on 38 public universities and 28 private universities in U.S.A to determine the extent to which faculties put emphasis on critical thinking component in their instructions confirms my fear. The findings of the research were as discouraging and question-begging, indicating that most faculties:

- a) do not understand the connection between critical thinking and intellectual standards;
- b) are not able to clarify major intellectual criteria and standards;
- c) Inadvertently confuse the active involvement of students in classroom activities with critical thinking in those activities;
- d) are unable to give an elaborated articulation of their concept of critical thinking;
- e) cannot provide plausible examples of how they foster critical thinking in the classroom;
- f) are not able to name specific critical thinking skills they think are important for students to learn in their disciplines;
- g) are not able to plausibly explain how to reconcile covering content with fostering critical thinking for value creating education and human development;
- h) do not consider reasoning as a significant focus of critical thinking;
- i) do not think of reasoning within disciplines as a major focus of instruction;
- j) cannot specify basic structures essential to the analysis of reasoning;
- k) cannot give an intelligible explanation of basic abilities either in critical thinking or in reasoning and their bearing to human and national development;
- l) do not distinguish the psychological dimension of thought from the intellectual dimension;
- m) have had no involvement in research into critical thinking and have not attended any conferences on the subject;
- n) are unable to name a particular theory or theorist that has shaped their concept of critical thinking and its relevance to human and national development.

The overall score of the research was even more heartbreaking, indicating that although faculties think, only 28% amongst them think *almost* correctly, 72% think wrongly. So as faculties here in Kenya where are we?

My earlier fears and a span of over twenty years' experience as a faculty member still compels me to believe that we are not any better. In fact, I won't be surprised if we performed even worse than our counterparts in the United States of America. Most of our faculties, continuously pulled-down by the fatigue of a dismal income, a frustrating working environment, a disharmony occasioned by ethicized political spillovers at work-stations, never-ending support demands from extended families on the one hand; and the ever unending socio-economic constrains on the part of the students are some of the critical factors that impede our institutions to focus on, execute and promote their core values and mandate. These and many other unfavourable factors inherent in our education system have played a negative role on the motivation and aspiration to academic excellence in our institutions of learning; and the result of this is a demotivated lecturers' community which is uncaring, casual and with a cosmetic approach to an enterprise that ought to be serving and saving humanity and national aspirations. Our faculties have become a community of fatigued minds, less productive and dismally relevant. The words of Henry Ford (1863 –1947) an American industrialist and business magnet couldn't have been less true: "*anyone who stops learning is old - whether this happens at twenty or at eighty. Anyone who keeps on learning not only remains young but becomes constantly more valuable - regardless of physical capacity*". How successful has Kenya been in addressing the need for education in the critical faculty for human and societal development?

## II. Kenya's efforts to Value Creating Education

When Kenya gained independence in 1963, the first President Jomo Kenyatta pronounced three glaring impediment to national progress and development: diseases, poverty and ignorance. This pronouncement was informed by the fact that the colonial regime had put in place policies that were meant to impoverish and alienate the blacks from the mainstream modes of production. Most of the regions predominantly occupied by the blacks were deprived-off any meaningful development, medical facilities were limited and, given the scarcity of educational institutions access to education was restricted. And because the British believed in the superiority of their race over the blacks, movements to urban areas were restricted save for massive migrations by the Kenyans to work in British plantations and undertake artisan enterprises as their main sources of income. Those who were lucky to attain some level of academic education could only access clerical work under supervision of the white masters.

The three critical concerns that the first government identified to pursue were also made complex by some aspects of *divide-and rule* policy that had been adopted by the British. Among those issues were: the deeply rooted and systemically orchestrated ethnicity perpetuated to keep the colonial system afloat; skewed and differential development meant to deprived growth to some regions perceived hostile to the colonial administration; deprivation of access to quality education; and a host of social and economic problems, deliberately written to impoverish the local people such as unemployment, lack of skilled manpower, flight of capital and foreign-dominated economy.

As a result of the above conditions, coupled with the desire to bring the nation back on the rail of prosperity, it became necessary that the young and fragile Kenyatta government redefine the agenda of the nation. The *Harambee* rallying call was muted as a means to awakening the Kenyan people from the dogmatic slumber to which they had been condemned by the colonial government to a sense of self-conscious to the unification, reconstruction and development of the nation. Central to the quest for national development was the need to address issues of education such that the Kenyan people can be able to access quality and value creating education for national development. By value creating education is meant that kind of education that leads to a holistic and conscientious development of the human person.

In recognizing the centrality of education in societal transformation, six commissions and several task forces to revisit education system have been constituted in Kenya since independence. The Ominde Commission of 1964 was established to reform the colonial system of education and among its recommendations was that: i) English be the official language of instruction in schools; ii) radio service be used in the teaching in primary, secondary and tertiary colleges; iii) school going age for children be six years and; iv) more emphasis be put on science-based subjects at all levels. The Ominde Commission also served to mobilize human resources to help the government in achieving its national development and unity agenda. (Ominde, 1964). Other commissions that followed included the Gachathi commission (1976) which was instrumental in the redefining of vocational policies, cultural aspirations, socio-economic, and national unity; the Mackay commission (1981) which terminated A-Level system of education and led to the establishment of the 8-4-4 system of education, the commission for higher education and Moi University; the Kamunge commission (1985) which featured mostly on education quality, relevance, and financing; The Ndegwa Report (GoK, 1991); The Mungai Report (GoK, 1995); and The Koech Report (GoK, 1999) which advocated for Total Integrated Quality Education and Training among others. (Wanjohi2011)

The major system overhaul however was undertaken in 1984 when the previous 7-4-2-3 system was replaced with the 8-4-4 system of education. This was occasioned by an outcry from educationists that the previous system was a sham and totally irrelevant to the needs of Kenya as a nation. (Muya2000).

Focusing on equipping learners with prevocational skills and technical prowess requisite for self-sufficiency in a competitive global market, the 8-4-4 system was seen and praised by a section of society as a major leap to the development for the nation. Some section of the academia however saw the system as being overloaded, teacher-centric and too expensive and burdensome to pupils and parents in a young economy like Kenya. The system was also implicated as being catalytic to various and worst strikes that engulfed a number of schools in Kenya during the year 2001, and the general poor quality of education in the country. (Amutabi, 2003). Further, the system was also accused of having been engineered by politics with total disregard to professional and state-needs insights. As a result, the 8-4-4 system became subject of national debate since its inception. To address the lacunae, 8-4-4 system was severally reviewed to be more accommodative. Several commission were formed with the view of improving the system: The Kamunge Report (GoK, 1985), The Mungai Report (GoK, 1995); The Ndegwa Report (GoK, 1991) and The Koech Report (GoK, 1999). A majority of these reports were either rejected or partially implemented. For instance, The Kamunge Report (GoK, 1985) on Education and training which recommended the reduction of examination subjects under the 8-4-4, was implemented in secondary schools but ignored at the primary schools level; while President Moi blatantly rejected the Koech Report as misleading and not in reality with the needs of the nation. (Muya, 2000):

As a response to the challenges bedeviling the 8-4-4 system of education, the Ministry for Education in 2011 established the Task Force under the stewardship of Prof. Douglas Odhiambo with the sole mandate of rethinking and realigning education to the new Constitution 2010 and Vision 2030. The reference point for the Task Force was to analyze the implication of the new Constitution on education, training and research in relation to: i) relevance and responsiveness of education curriculum to Vision 2030; ii) access, equity, quality and transitional rates; iii) relevant structure of education system from kindergarten to university; iv) investment in education, institutional management of governance, and human capacity in education at all levels; v) the place of information communication technology and other technologies in education; vi) market relevance with reference to national, regional and international dynamics; and vii) best practices for academic mentorship.

In order to achieve the above mandate, the Task force was tasked to do a thorough analysis of the entire education sector by reviewing previous education commission reports, policy papers, and legal documents. It was also to undertake a review of education practices from countries with similar political structure with Kenya; operating two level of governance - national and county governments; and to establish gaps in curriculum delivery processes including relevance and responsiveness of the education curriculum to Vision 2030. In its report, the key recommendation of the Task Force was that the then 8-4-4 system of education be replaced with a 2-6-3-3-3 system of education with effect from September 2013.

As a consequence of Prof. Odhiambo's Task Force recommendations, the Kenya Institute of Curriculum Development (KICD) in consultation with the Ministry of Education in 2017 developed the Kenya's *Competence Based Curriculum (CBC)* as the best alternative to 8-4-4 system. In justifying the need to change, it was claimed that CBC emphasizes the significance of developing skills and knowledge by applying competences exhibited to real life situations. It was also supposed that fundamental to CBC are the core competencies that it aims at infusing into the learners and they include the ability to: i) effectively communicate and collaborate in life; ii) think critically and be good decision makers and problem solvers; iii) have the imaginative and creative prowess; iv) embrace the patriotic attitude of good citizenship both locally and globally; v) embrace learning as a continuous and life-long process; vi) develop, attain self-efficacy in service to self and to the society; and vii) acquire digital skills and competences through continuous digital literacy. In other word, it was envisioned that CBC will lead to the holistic development of the human person, inculcate value consciousness, trigger sensitivity, innovativeness, and productivity and spur national development.

The CBC, still in its formative stage also highlights some of the values it's supposed to inculcate into the learners, with the anticipation that by the end of the education circle they will have been matured into them: responsibility, integrity, love, respect, unity, peace and patriotism. These anticipated values are meant to ensure that the product of the new system is a person of virtue with capability to effectively contribute to the development of the nation and be cognizance of the worth of care for the self, others and nature; and importantly have the ability to think critically and creatively about the intrinsic value for human harmonious co-existence. As to whether these aspirations are tenable or not have been addressed in some part of this work.

### **Financial Implications of CBC**

Good things comes at a cost but as the wisdom of an American polymath and one of the Founding Fathers of the United States, Benjamin Franklin (1706 –1790) attests; "*an investment in knowledge pays the best interest*". Although at a colossal cost, some major tides have so far been made in the transitional phases of Kenya's education system. The financial cost and implication of the transition has however had an impact on Kenya's budgetary allocation and the entire spectrum of development. In order to actualize the transition from 8-4-4 to 2-6-3-3-3 system of education, the Government was to provide free learning in public institutions from early childhood to senior secondary school level which collectively constitutes basic education. As a consequence, the government required Kshs360 billion (\$4.2 billion) in the 2012/13 financial year for infrastructure, buying new textbooks and employing new teachers; and Kshs1.4 trillion (\$16.5 billion) between 2012 and 2015 in order to implement the new education system. (GoK, 2011)

This financial implication of the transition can only be weighed against the anticipated outcome and government's preparedness to handle and embrace the components of the new education system. Many educationists have argued that cost is a major hurdle for the success of Prof. Douglas Odhiambo's task force proposed 2-6-3-3-3 system. They observe that the new structure of education alone are expected to cost Sh362 billion per each year. The cost implication it has been asserted, erodes the recommendations made by Gachathi Commission Report of 1976 which was formed specifically with the objective of reducing education financing from 15% to 7%. As a consequence, many academia have observed that sooner this burden might be transferred to the parents through a cost-sharing mode or it might trigger the initiation of yet another commission or task force to relook at the entire structure of and possible cost-cutting measures for the 2-6-3-3-3 education system.

Besides financial implications, there are other factors that will contribute to the success of the new system, among them: i) government's commitment to rid the nation of corruption and channel the appropriated resources into education and other domains of development; ii) government's readiness to create enabling

environment for the flow of and sharing of ideas; iii) ministry's capacity to bankroll in-service and teacher training programs appropriate to infusing criticality and value creating components within instructions; iv) universities and tertiary colleges preparedness to enhancing and emphasizing the values that inform the curriculum at primary and secondary levels of education;; and v) understanding, support and appreciation of the worth of critical thinking for value creating education.in human development by other stakeholders.

The efforts to infuse critical thinking for value creating education at Kenya's universities is no better than it is at the lower levels of our education system; very little is being done to marry and embrace this ideal within the academic programs. Some efforts have however been made to include critical and creative thinking as a mandatory subject within the curriculum. This positive effort, pioneered by Kenyatta University from 1987 however seems to have been premised on a wrong assumption: that taking students through some writings baring a critical outlook is sufficient to transform them into critical and creative spirits (Wambari, 1992). And although the subject of critical and creative thinking is being taught, its recipients still manifest dormancy, mediocrity and unreflective outlook on many of the issues that affect society. To the knowledge of my basic wisdom, I believe this is because the interlocutors of this thought, completely missing the point were convinced that being critical is both logically and empirically associated with being in possession of certain facts about criticism.

To address this glaring misreading, Namwambah in his book *Elements and Pedagogy of Critical Thinking* (2007), observes that fundamental to value creating education and the inculcation of critical and creative thinking skills, the process must proceed from the ability of the lecturers' understanding of the concept of critical and creative thinking on the one hand, and of what the subject of critical and creative thinking consists on the other. He further argues that the enterprise of critical and creative thinking is central to the entire spectrum of educational enterprise, and university professors and lecturers will need to undergo refresher courses in order to be able to infuse the concept and its valuable skills within their subjects' domain. He concludes by recommending that critical and creative thinking will make more sense if it's taught within subject domains rather than as a distinct discipline. (Namwambah, 2007). It is now commendable that Namwambah's envisioned approach eventually found its rightful place in Kenya's new *Competence Based Curriculum* (CBC) which emphasizes the essential role of critical thinking in building valuable competences through education.

From the above understanding, it is evident that Kenya's new system of education is meant to develop competencies and transform its citizens into responsible, innovate and global citizens with skills requisite for the ever changing world. Kenya's new CBC lays emphasis on the need to enculturate the learners into value based education with a view of cultivating their potentials. As a result, central to this endeavor is the emphasis on critical thinking as a central component within the curriculum. This emphasis is occasioned by the need to shift the educational paradigm as to be able to nurture the mind through the infusion of critical thinking within the curriculum in order to produce a holistic global citizen and spur national development. This effort is in line with what Alvin Toffler (1928 –2016) an American writer, futurist and businessman envisaged when he claimed that: *"the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn"*.

### **Education in the Critical Faculty and Development**

The need to emphasize the essentiality of critical thinking as a prime goal of education in the current age is not in doubt. According to an American philosopher, psychologist and educational reformer John Dewey (1859 -1952), *"education is not preparation for life; education is life itself"*. But what exactly is this education, and what is its relationship to development? Education is basically the means through which a person's state of mind is optimized regardless of the situation as to be able to perceive accurately, think clearly and critically, and act effectively in order to achieve self-selected goals and aspirations instrumental to self-actualization and societal advancement; education is the process of human growth aimed at nurturing mental abilities and acquisition of skills requisite for rational existence. Education plays the role of liberating individuals from ignorance to rationality and self-understanding; transforming individuals from individualism to autonomy and individuality; integrating one with the self, nature and society; and spurring development and positive social change. Value creating education is a means to self-actualization, self-discovery and self-realization; it is a lever to human emancipation from the shackles of self-mis-definition, self-misconception and self-deception.

Education is in every sense a fundamental factor for development. No country in the world can attain sustainable economic development without substantial investment in human capital. Education enriches people's understanding of themselves and the world; it improves the quality of people's lives and leads to broader social benefits to both the individual and society. Value creating education raises people's productivity and creativity, promotes entrepreneurship and technological advancement and spurs national development; and more importantly education plays the crucial role of securing economic and social progress of a nation and improving income distribution.

Education gives us the ability to think beyond routine conventional level, its instrumental to the pursuance of dreams and aspiration in life and equips us with skills for productivity, enabling us to live respectable

lives. Education defines our destiny and the ultimate goal for existence by equipping us with principles requisite for rational existence. It frees our minds from the prejudices and biases which might play self-deceptively in our lives and motivates us to think with logic and reason. It is the essential overall component of development for the human mind and brain and a central determinant for prosperity and economic health of the nation. Further, the role of education in development is not only crucial or elucidating research and discoveries which are central to the development of technology and communication, but its also of great significance in creating awareness, belief in values of modernity, progress and development.

In line with the above, the objectives of value creating education should include but not be limited to the full development of human personality in its physical, mental, emotional, and spiritual aspects; inculcation of decorum, responsible and cooperative attitudes; inculcation and development of respect for the dignity of the individual and society; inculcation of patriotism, national pride and integration; development of and widening of individuals' democratic ways of thinking and living; development of tolerance, understanding and appreciation towards different ways of life; development and inculcation of a sense of brotherhood and coexistence at social, national and international levels; instrumental to the development of self-confidence and of the belief that situations may be difficult but not impossible to navigate; development of skills requisite for sound decision making and problem solving, and ability to formulate sound moral principles; but should transcend this level to being a crucible and catalyst to national development and social cohesion

Our effort to define education, highlight its basic roles and underscore its objectives is not simplistic, nor is it a naïve attempt to circumvent the importance of value creating education. The words of Barnes (1992) on the nature of the human person and the caution to us from Carl Sagan help in the rethinking on the necessity of value creating education for human and national development. According to Barnes' (1992);

*"...the human being is the only animal that uses meanings- ideas, concepts, analogies, metaphors, models, theories, and explanations- to make sense of things and to understand, predict, and control things. But again to the contrary she is also the only creature that uses meanings to negate, contradict, and deceive themselves, to misconceive, distort, and stereotype, and to be dogmatic, prejudiced, and narrow-minded. Further, humans are the only animals whose thinking can be characterized as clear, precise, accurate, relevant, consistent, profound, and fair; but at the same time, they are also the only animals whose thinking is often imprecise, vague, inaccurate, irrelevant, superficial, trivial, and biased".* (Barnes, 1992)

In relation to critical thinking, human beings are both thinking and unthinking. The human paradoxical dichotomies conjecture has genuine implications to the kind of education requisite for human and national development. Education in the critical faculty requires that we do not simply trust our instincts, emotionally informed "knowledge or our sense-derived 'knowledge' without subjecting it to the scrutiny of reason; we need not to unquestioningly believe what spontaneously occurs or is thrown at us as "knowledge"; we need not accept as true everything that is taught or passed to us by those in authority as true; we need not assume that the experiences of others are unbiased and so worthy of consumption; we also need to be cognizant that our folly and naivety, pride, prejudices and biases distort and often lead us into self-misconception, deceit and thereby garbles our thinking and our ability to access true justified knowledge. At the very best, education ought to assist us in acquiring positive attitudes in the formulation of intellectually sound standards for belief, truth and validity. This in turn will help us in cultivating habits and traits that will eventually integrate the requisite standards into our lives and help us in the elimination of those obstacles that stand between clear thinking and value creating education.

The value of education in skills, character and human development has already been underscored. Various seasoned scholars attest to the importance of education and emphasize the many roles education play in shaping character and transforming individuals and society. Value creating education involves the impacting of a complex set of skills, dispositions and attitudes. These skills, dispositions and attitudes, together characterize a virtue which has both intellectual and moral aspects, and which serves to prevent the emergence of numerous vices, including mental laxity, dogmatism, intellectual slumber and prejudice. The cardinal purpose of value creating education to this end is to empower the recipient with the ability requisite for thinking critically and making rational judgements on controversial issues or questions to which they are likely to have to act.

As stated above, there is a complex set of skills, dispositions and attitudes which characterized value education in the critical faculty. In addition to providing access to impartial supplies of knowledge as the tradition has been, education also needs to offer effective training in judicial habits of thought. To ensure that the knowledge acquired does not produce individuals who passively accept the teacher's wisdom or the creed which is dominant in their own society, the recipients need to develop certain *skills* far beyond mere access to knowledge; they need to acquire intelligence and not just mere internalized information. This will indicate certain critical abilities education is supposed to impact. Such critical skills grounded in knowledge include: i) *the ability to form an opinion for oneself*: being able to recognize what is intended to mislead, being capable of listening to rhetoric without being carried away, and becoming adept at asking and determining if there is any reason to think that our beliefs are more true than those of our adversaries; ii) *the ability to find an impartial solution*: learning to recognize

and control our own biases, coming to view our own beliefs with the same rigor and detachment with which we view the beliefs of others, ability to judge issues on their merits, making efforts to ascertain the relevant facts, and having the power of weighing arguments; iii) *the ability to identify and question assumptions*: learning not to be credulous, applying constructive doubt in order to test unexamined beliefs, and resisting the notion that some authority, a teacher or politician perhaps, has captured the whole truth and therefore should not be questioned.

In nurturing these skills, it's important to remember that our most unquestioned convictions may be as mistaken as those of our opponents. Our account of critical thinking skills should therefore cover grounds highlighted under the dimensions of thought, namely: the purpose for our thinking; the issue, problem or question that need to be addressed; the assumptions on which the issue at hand is founded; the points of view(s) that inform the process of thinking and decision making; the data, information and evidence on which both the assumptions and points of view are derived; the concepts and ideas that are available for reference and application; the inferences or interpretations that can be inferred and or confuted against the issue at stake; and the implications and consequences of our thought. This is necessary because our actions are informed by our thinking, which subsequently determines how we are judged.

From the foregoing, we can deduce three critical insights of value creating education: i) the emphasis on *judgement*, suggesting that critical skills cannot be reduced to a mere formula to be routinely applied but rather, requires that one has to *weigh* evidence and arguments, and estimate approximate truth. ii) that as an enterprise critical thinking requires being critical *about our own attempts at criticism*. For example, we need to recognize that refutations are usually preludes to further thinking and refinement and not final products of thought; and that purposive wonder and curiosity is necessary to effective thinking. Critical thinking must include critical reflection on what passes for critical thinking, and iii) critical thinking is not essentially a negative enterprise; our emphasis on *constructive* doubt, and warning against practices which lead to children becoming *destructively* critical is positive skepticism. It is important that the kind of criticism aimed at is not just that which seeks to reject, but that which considers apparent knowledge on its merits, retaining whatever survives critical scrutiny.

Secondly, the mere possession of critical skills is not sufficient to make one a critical thinker or full developed individual. There are certain *dispositions* which guarantee that the relevant skills acquired are actually exercised. These *dispositions, habits or practice* suggest the actual translation of skills into human behaviour. In this respect education can be understood as *the formation, by means of instruction, of certain mental habits and a certain outlook on life and the world*. Of great importance among these dispositions are: i) *the habit of impartial inquiry*: entails the necessity of not admitting or taking at face value one-sided opinions if we are committed to arriving at conclusions which do not depend solely on time and place of our education, often doused with bias and prejudice; ii) *the habit of weighing evidence*, coupled with the practice of not giving full assent to propositions which there is no reason to believe as true; *methodic or systemic doubt, also called deliberate skepticism*; iii) *the habit of attempting to see things truly*, which contrasts with the practice of merely collecting whatever reinforces existing prejudice; and iv) *the habit of living from one's own centre*, a kind of self-direction, a certain independence in the will, with caution of not falling victim or prisoner of prejudice. If the latter manifest as the case then there is need for a *critical* habit of mind to be cultivated

And because these dispositions are not simply automatic responses in which one has been drilled, such intellectual habits in effect reflect a person's willingness or *readiness*, to act and respond in various ways, which include: i) *the readiness to admit new evidence against previous beliefs*, which involves an open-minded acceptance of whatever a critical examination has revealed; ii) *the readiness to discard hypotheses which have proved inadequate*, where the test is whether or not one is prepared in fact to abandon beliefs which once seemed promising; and iii) *the readiness to adapt oneself to the facts of the world*, as opposed to merely going along with whatever happens.

Beyond the skills and dispositions outlined above, a certain set of *attitudes* characterize the outlook of a critical person. By critical attitude we mean a temper of mind central to which a certain stance with respect to knowledge, understanding and opinion; it involves: i) *a realization of human fallibility*, a sense of the uncertainty of many things commonly regarded as indubitable, bringing with it humility; ii) *an open-minded outlook with respect to our beliefs*, an "inward readiness" to give weight to the other side, where every question is regarded as open and where it is recognized that what passes for knowledge is sure to require correction; iii) *a refusal to think that our own desires and wishes provide a key to understanding the world*, recognizing that what we should like has no bearing whatsoever on what is; iii) *being tentative, without falling into a lazy scepticism* (or dogmatic doubt), but holding one's beliefs with the degree of conviction warranted by the evidence. This entails having a strong desire to know combined with great caution in believing that what one knows must meet the test of certainty and proof and an assurance that open-mindedness does not degenerate into being mindless.

As a consequence of the above, the critical outlook of value creating education reflects an epistemological and ethical perspective which emphasizes how beliefs are held i.e. not dogmatically; criteria for doubting beliefs, and the belief that transformative knowledge for the freedom of the will, opinion, truthfulness, and tolerance in the critical faculty is possible.



And in order to overcome the lacunae currently inherent in Kenya's new education system and ensure that the intended goals are achievable, there is need for the following nine critical issues to be given continuous attention, namely: i) baseline studies on teachers' ability to infuse, emphasize and implement with practical examples, critical and creative thinking component within instruction; ii) benchmarking study tours to countries with similar educational orientation with a view to measuring success and bottlenecks; iii) development of training modules for critical and creative thinking in education, together with best practices guideline material for inculcation of critical and creative thinking within content and instructions; iv) mentorship and training of teachers college tutors on critical and creative thinking in education and how to infuse it into instructions; v) in-service training of serving teachers on critical and creative thinking; vi) review of the curriculum and teaching material to ensure compliance with the requisite standards for the inculcation of critical and creative thinking skills; vii) development of curriculum and mandatory training in critical and creative thinking to all students in all Kenyan universities; viii) training of quality assurance (QA) personnel on the indicators of education in the critical faculty and value creating education norms; and ix) monitoring and evaluation of the implementation of value creating education in learning institutions.

### III. Conclusion

We have attempted to underscore the centrality of critical thinking to value creating education for individual and national development. By drawing parallels from studies in the USA and the dismal efforts some universities in Kenya have made, together with highlighting efforts being initiated by Kenya to embrace certain ideals for value creating education in the critical faculty, we have argued for the need to understand the complexities that characterize human life and how these challenges can be effectively addressed through effective instructions in education. We have also demonstrated that critical thinking is a pace-setter for value and transformative education. The need to infuse critical thinking component in Kenya's educational system with an aim of producing men and women that can redirect the world to sanity, awaken human virtue consciousness; trigger awareness and spur development have been underscored. The ability to nurture individuals who believe in the supremacy of reason as the beacon for existence, who have the willingness to spend time reflecting on the ideas presented; with the ability to evaluate and solve problems as they arise, who are logical and sequential in thinking without appealing to void emotion, diligent in seeking out and committing to the truth, eager to express their thoughts on issues without fear or regret; who exercises the highest level of patience, with ability to tolerate ambiguity on understanding that knowledge is tenable has been made evident. We have also demonstrated that value creating education helps in the inculcation of skills requisite for tolerance, ability to seek alternative views on emerging issues; ability to persevere and endure with a view of attaining truth; it nurtures individuals who embodies intellectual courage as to pursue issues to their conclusive end; open to new ideas that may not necessarily agree with their previous thought on a topic or issue and are able to base their judgments on ideas and evidence; a breed of individuals who are able to recognize errors in thought and persuasion, with the ability to recognize good from bad and fallacious arguments; those men and women with the ability to take in criticism without turning personal and myopic; and individuals driven by the passion for leaving the world better than they found it, and more importantly, individuals who pioneer innovation, creativity, productivity and spur the world to the next level of development.

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