

# COMPARATIVE ANALYSIS OF RATIONALISM AND CRITICAL RATIONALISM: IMPLICATIONS FOR GENERAL STUDIES AND NATIONAL DEVELOPMENT

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## **Abstract**

*Much has been said and written about the concept of national development in Nigeria: lectures, workshops, seminars and conferences have continued to be organized for the purposes of articulating justifiable foundation upon which the structures of the nation's development can be laid. National Development refers to an increase or expansion of the total volume of production of goods and service of a country accompanied by improvement in the scientific and social lives of the people. It is however a fact that no sustainable development will take place in any society until a change occurs in the fundamental constitution of the people's mode of thought. This paper holds that the individual is of first importance than any development plan. Thus, the most important task of tertiary education in developing countries today should be to produce graduates sound in reasoning. Rene Descartes and Karl Popper developed models that should aid the individual to attain reasonableness. The paper submits that for sustainable development to take root in the nation, the course content of philosophy and human existence in the general studies curriculum of Nigeria's tertiary institutions should be strengthened by providing the right and necessary environment to study that will reflect the importance of reason over matter.*

**Keywords:** Philosophy; Rationalism; Critical rationalism; General studies, National development

## **Introduction**

Questions about the status and extent of our knowledge of the world, of ourselves and other people including particular branches of knowledge such as history, mathematics and the sciences have occupied the attention of philosophers for nearly as long as philosophy itself. Samuel Stumpf (1994) captured it succinctly when he averred that 'philosophy began when human's curiosity caused them to ask – what are things really like? And how can we explain the process of change in things?' What prompted these questions according to Stumpf was the gradual recognition that things are not exactly what they seem to be; that appearance often differs from reality (p. 1). This is so because we often fall into error even with regard to things for which we claim certain knowledge. For example, various theories about the nature of the universe which were

once held to be established truths have today been discarded on account of being either inadequate or no longer tenable or completely misleading.

Such inadequate and misleading truths caused Rene Descartes (1997) to take another look at the knowledge claims of his day and declared that "...what I take to be gold and diamonds is perhaps no more than copper and glass" (p. 72). This kind of observation poses serious questions to claims to knowledge and questions the veracity of that which we think we know because even seeming obvious facts could possibly be illusions.

To overcome illusions in knowledge acquisition, Descartes embarked on a rigorous methodic doubt with the aim of constructing a firm foundation based on indubitable truth for the sciences and for social development. To achieve this objective, he decided for a whole-sale rejection of long held truths. According to Stumpf (1994) , *Since Descartes' system of truth would have to be derived from his own rational powers, he would no longer rely on previous philosophers for his ideas nor would he accept any ideas as true only because it was expressed by someone with authority. Neither the authority of Aristotle's great reputation nor the authority of the church could suffice to produce the kind of certainty he sought* (p. 238).

The outcome of this decision was rationalism. Rationalism is a theory that emphasizes reason as the basis for certain knowledge rather experience. Karl Popper (2002) on the other hand did not completely disagree with Descartes: for him reason is important in knowledge development but affirms that "there are no ultimate sources of knowledge; every source, every suggestion is welcome; and every source; every suggestion is open to criticism" (p. 35). This is the crux of his theory of critical rationalism. Critical rationalism advocates continuous criticism, falsification and refutation of our knowledge claims. The seeming differences between Descartes and Popper concerning the certainty or otherwise of our knowledge claims; and its implication as tools for sustainable development in the physical and social sciences informed the need for a comparative study of these theories. This paper believes that both theories are crucial for all-round development of the nation but argues that the method of impartation used in teaching Philosophy and Human Existence be strengthened to emphasize rationality/openness over and above indoctrination/dogmatism. And if the purpose of creating the general studies unit in the nations' universities would be achieved; then its usefulness in arousing curiosity and wonder which are essential ingredients for scientific and technological development of any nation should be emphasized. For, according to Uduigwomen (1992), "the aim of the general studies courses is to encourage broader knowledge as opposed to narrowness of knowledge in intellectual specialization" (p. IV). A broad-minded individual is therefore a potential agent for change and development because he/she is equipped to take dispassionate look at throbbing existential problems with logical reasonableness. The paper will argue that for sustainable development to take root in the nation; the course content of philosophy and logic, and the history and philosophy of science in the general studies curriculum of Nigerian universities should be strengthened by providing the right atmosphere and

necessary environment to study that will reflect the very importance of reason over matter.

### **Rationalism**

Dissatisfaction with current realities induces psychological restiveness that produces doubt, curiosity and inquisitiveness. Rationalism is a product of mental dissatisfaction and it holds that knowledge could be reached through 'logicomathematical' reasoning. Rationalists maintain that reason alone is capable of leading one to certain knowledge (Ozumba: 2000: 47).

The programme of rationalism according to Stumpf (1994) was to provide philosophy with the exactness of mathematics (p. 235). Rationalists believe that the mind of an individual is structured in such a way that simply by operating according to the appropriate method, it can discover the nature of the universe. They believe that reality has an intrinsically logical structure and because of this, they argue that certain truths exist and that the intellect can directly grasp these truths.

The initiator of modern rationalism is Rene Descartes. Having graduated from one of the best schools of his era and seeing himself among the class of the learned, he was embarrassed at the discovery of errors in things he had learned and subsequently became doubtful of their certainties. He came to the conclusion that he had advanced no farther in his attempt at learning than the discovery at every turn of his own ignorance (Descartes, 1997: p. 73). He thus embarked on a program of self-discovery through which he can establish a firm foundation for indubitable and certain knowledge especially in the sciences. The outcome was his system of doubt known as the methodic doubt.

Using this method, Descartes (1997) vowed to dispense with all his previous learning; arguing that the confusion in the sciences arose from the fact that they had been built up by many people over a long period of time. Insisting that there is usually no order or plan in houses or cities built by successive generations in contradistinction to those that are the work of one man. He therefore decided that the best way to start was to make a clean sweep of the old and begin anew. Asserting:

*But as regards all the opinions which up to this time I had embraced, I thought I could not do better than endeavor once for all to sweep them completely away, so that they might later on be replaced, either by others which were better, or by the same, when I had made them conform to the uniformity of a rational scheme. And I firmly believed that by this means I should succeed in directing my life much better than if I had only built on old foundations, and relied on principles of which I allowed myself to be in youth persuaded without having inquired into their truth (p. 79).*

Descartes' desire to build a new foundation made by himself had some implications which he was prepared to surmount. One of such implications was the method by which

to begin the construction of his foundation. But first, he outlined basic rules and maxims that should guide the enterprise. The rules include:

- 1, Never to accept anything as true if there is no evident knowledge of it being so.
- 2, To divide each difficulty under examination into as many parts possible as might be necessary for its adequate solution.
- 3, To conduct thoughts in such order that by commencing with simple and easy to know objects, one might ascend little by little to the knowledge of the more complex.
- 4, In every case, to make enumerations so complete and review so general that one is assured nothing was omitted.

For the maxims he vowed:

- 1, To obey the laws and customs of his country.
- 2, To be as firm and resolute in his actions.
- 3, To try always to conquer himself rather than fortune; and
- 4, To review the occupations of men and chose the best (Descartes, 1997: p. 85).

With these rules and maxims in place, Descartes averred that the chief ground of his satisfaction with this method was the assurance he had of thereby exercising his reason in all matters, if not with absolute perfection, at least with the greatest attainable by him. Besides, he was conscious that by its use, his mind was gradually being inured to clearer and more distinct conception of matter. Thus, with the methodic doubt and the rules guiding it, Descartes was sure of arriving at certain and indubitable truth in the sciences or any area of knowledge. Descartes' programme of philosophy 'revolutionized' the study of philosophy in the 17<sup>th</sup> century; leading to the birth of 'modern philosophy' and earned him the sobriquet - father of modern philosophy (Stumpf, 1994: p. 236).

### **Critical Rationalism**

Critical Rationalism is a theory developed by Karl Popper to answer the question 'how can we detect and eliminate error?' For him, the best way to answer this question is by criticizing the theories and guesses of others (Popper, 2002: p. 34). Critical rationalists hold that scientific theories or any claim to knowledge should be subjected to tests which may falsify them. Popper (1971) regards the critical attitude as the most important virtue those seeking knowledge could possess; calling criticism the life blood of all rational thought. He made the point that all criticism consists in pointing out contradictions or discrepancies; that scientific progress consists in pointing out contradictions wherever they may be found (p. 39).

### **Falsificationism**

Critical rationalism is hinged on the principle of falsification. Popper (2002) opines that if a theory is to be scientific, then it must be possible, in theory, for it to be falsified. The falsification principle operates by conjectures and refutations. By conjectures, Popper means unjustified anticipations, guesses and tentative solutions to problem. For him, Knowledge, especially the scientific knowledge progresses by

conjectures. These conjectures are then controlled by attempts to refute or falsify them (p. IX). According to Chalmers (1990: 38), in falsificationism, some theories can be shown to be false by an appeal to the results of observation and experiment. A theory is falsifiable if there exists a logically possible observation statement or set of observation statements that are inconsistent with it, that is, which if established as true would falsify the hypothesis. For example, the statement that 'it is raining' is liable to falsification if on observation it is discovered that it is not raining. The fact that it is not raining falsifies the initial statement that 'it is raining'.

### **Comparing Rationalism and Critical Rationalism**

The differences between Descartes' rationalism and Popper's critical rationalism are hinged on the certainty or otherwise of a given knowledge claim – old or new. While Descartes uses his own rational powers to derive his system of truth; Popper suspends judgment on any knowledge claim until it passes through severe critical examination. Also, while Descartes tries to achieve certainty of knowledge through the exactness of mathematics; Popper (1972) maintains that no one can be certain of any knowledge claim whether rational or empirical. He makes the point that the rationalists' quest for certainty 'is mistaken'. He believes that no particular theory may ever be regarded as absolutely certain nor is any scientific theory sacrosanct (p. 360).

Popper's position is particularly true of events in the sciences. The history of science shows that scientific knowledge grows rapidly with new theories replacing old ones. For example, Albert Einstein's relativity theory displaced Newtonian physics amongst many scientific and social dislocations brought about by fresh insight, logical and rational reasoning. Notwithstanding the differences in Descartes' and Popper's rationalism, both theories are however committed to the eradication of ignorance from those that should wear the toga of the learned. Both theories hold criticism as essential element to the growth and development of the individual and society. Both convey the message of never accepting any doctrine or idea without first subjecting it to rational and critical evaluation, hence their importance in the general studies courses taught in Nigerian universities.

### **Rationalism in General Studies**

General studies courses were introduced in Nigeria's universities in 1990 by the National Universities Commission to among other objectives encourage broader knowledge as opposed to narrowness of intellectual specialization (Uduigwomen, 1992: p. IV). The general studies course exposes students to courses of liberal education through which they can develop and expand their knowledge of their social, cultural and natural environment; increases their curiosity and ignite their rational, critical and analytic capabilities.

Descartes' Rationalism and Popper's critical rationalism are sub-themes in the course content of philosophy and human existence. The aim is to expose every undergraduate to the power of rational thinking and curiosity which incidentally is the

hallmark of philosophical studies. Before the introduction of General Studies courses to include philosophy courses, so much emphasis was laid on the study of science and technology to the detriment of the humanities. It took the concerted efforts of some Nigerian philosophers to point out the abnormality and dangers inherent in a society where philosophy is relegated to the background. According to Prof. Udoidem (2006), before the intervention of the National Universities Commission (NUC), “so much emphasis was led on science and technology without recourse to the foundation of science and technology.” For him, not to study philosophy which is the foundation of all knowledge is to remain perpetually ignorant even in the subject one claims to know (p. 66).

### **Rationalism and National Development**

National development is a composite of the words – national and development. National means that which pertains to a nation. A nation is a body of people inhabiting the same country. Development according to Caroline Thomas (2005) “is a structural transformation; the economic growth of national economies, coupled with a material improvement in the lives of their citizens evidenced in poverty reduction and increased equity” (p. 318). Thus, national development shall here be seen as the structural, economic, material and social transformation of a nation by those inhabiting it. It refers to an increase or expansion of the total volume of production of goods and services of a country accompanied by improvement in the scientific and social lives of the people. This means that for a nation to be seen as developed, it must be characterized by economic productivity, high standard of living, technological advancement, stable political order, the availability of basic necessities such as food, clothing, shelter and high level of literacy and education. The Nigerian nation is yet to achieve obvious success in any of the above developmental indices and this to a large extent, may be attributed to the neglect of philosophy and all other courses in the general studies curriculum of the nation's educational priorities.

The neglect of these courses, especially in the mode of impartation, bearing in mind that these courses are among the very first that fresh students are exposed to on admission into the university leaves much to be desired. First, students from one or two faculties are lumped together to take these courses with a population of between '200' and '400' and the lecture theaters for these courses are often too small to contain the large population of students. The second challenge is power supply to the universities; because of epileptic power supply, the Public Address System in lecture halls seldom functions and lecturers in most cases have to shout to be audible. Also, because of the large population of students attending these classes some of the lectures are held in open spaces within the school such as stadium, car parks or convocation arenas. The result of this mockery of teaching and learning is seen in the output of graduates produced over the years. It is no secret in Nigeria that 'some' young people go through university education and come out more confused and unlearned than they were before admission into the university. The Nigerian media calls them “half-baked graduates.” But they are simply the unfortunate byproduct of a nation's misplaced priorities. The Nigerian public

education system suffocates the fire capable of making proper cakes. No one bakes a perfect cake from a lukewarm oven. The question then is where lies the blame?

Chinua Achebe (1983) in his *The Trouble with Nigeria* had identified weak leadership as the trouble with Nigeria (p. 1). This weakness in leadership, in agreement with Achebe, comes as a result of ignorance; ignorance of the true nature of the common good and its relationship to private good. Here, the system of government or administration is not the cause of underdevelopment as some are wont to believe, rather, it is the kind of people that run the system and the type of knowledge they bring in running it. Krishnanmurti (1978) had hit the nail on the head when he averred that “the individual is of first importance, not the system, and as long as the individual does not understand the total process of himself, no system, whether of the left or of the right can bring order.... (p. 16)”

Order, peace and development are achievable when there is a fundamental change in the constitution of the individuals' mode of thought; a complete metamorphosis of the mind, soul and spirit. This has to do with changes in ideas, attitudes, values, policies, beliefs, traditions and so on that can stand the test of time. These are the challenges that rationalism and critical rationalism seek to address: the total liberation of the individuals' mind from the dark world of ignorance to the light of rational knowledge to comprehend reality for self and nation.

### **Implications for General Studies and National Development**

The general studies courses taught in tertiary institutions in Nigeria have the potential to transform the nation and exorcise it from the degrading class of 'third world' to the elite class of 'second' or even 'first world' nations. The myriad problems responsible for the nation's underdevelopment could be traced to irrational actions taken by those whose charge it was and is to take rational actions. An individual, no matter how highly placed can act only as much as he knows. Socrates was absolutely right when he averred that knowing the good will amount to doing the good. (See Plato, *The Apology 7<sup>a</sup> and Meno 87<sup>c</sup>*). No nation can develop above the intellectual capacity, capability and depth of its leadership's intellectual capacity. A nation is therefore a perfect reflection of its leadership.

Rationalism and Critical rationalism are theories taught in philosophy and human existence; as espoused in this paper, rationalism seeks to arouse and fine-tune the rational capacity of the one engaged in mental inquiry. Rationalism challenges ideas without been confrontational; analyzes and tests ideas in the light of evidence and argument. A rationalist does not accept an idea simply because 'that is the tradition' or because a charismatic leader has propounded the idea. He/she applies the rule of 'never to accept anything as true without evident knowledge; to divide difficulties under examination into many possible parts; to conduct his thoughts without bias; and to do proper review of every issue before taking a stand'. Critical rationalism, on the other hand promotes the idea that development of any sort should require the freedom to subject all ideas to rigorous scrutiny and criticism. It promotes the right of an individual to criticize administrative or traditional practices and in that way eliminate undesirable traditions, customs and practices that are inimical to development. Critical rationalism

smoothly resolves differences between people through discussion and argument rather than force. In other words, critical rationalism is a way of letting ideas, traditions, and taboos perish in the place of man.

From the foregoing, it should be obvious that both theories seek to liberate the mind of the individual thereby making one a potential change agent in any environment one may find oneself. By making philosophy and human existence a compulsory course in universities in Nigeria, the progenitors appreciate the transformative power of philosophical learning. Prof. Udoidem (2006) in a paper entitled "Philosophy and the Future of Higher Education in Africa", had reminded African policy makers that if they wanted science and technology in Africa, they should remember that Albert Einstein said that without the influence of his readings in philosophy, he would not have developed the special theory of relativity. He also cited the example of Karl Marx who abandoned his law programme to study philosophy which helped him to liberate his mind and thought process (p: 67).

The implication here is that those desirous for all-round development take the study of philosophy and its theories seriously. Even though it is now a compulsory course for all the universities in the country, the seriousness which it deserves is yet to be seen. Students merely pass the courses to graduate without the intellectual burden to know. And those that teach it are most often not committed because of the type of environment where they are made to teach; and the governments' inability to address educational challenges without engaging in political fisticuff with academic unions is a greater challenge.

But, despite these challenges, the teacher still has very important roles to play to realize the core objective of the general studies courses and to make them attractive to students especially the philosophy courses; first, the courses should be taught in the language the students can easily comprehend; in other words, philosophical verbosity should be minimized as much as practicable. Second, the teachers should stimulate the curiosity of students by analyzing prevailing existential themes of the society vis-à-vis philosophical concepts and third, make students realize that everyone is a philosopher provided they seek to know the how and why of all things in the universe. Curiosity has never failed to engineer all-round development.

## **Conclusion**

To achieve the aim for the introduction of general studies course in the nations' universities, those charged with the responsibility of developing the mental and rational abilities of Nigerian students should show commitment to their charge. School administrators should equally endeavour to employ more lecturers to teach these courses. A situation where one lecturer is made to teach crowds of students does not augur well for intellectual development of the students. The teacher is equally over-worked and stressed. The employment of more teachers for general studies courses will also solve the problem of space and overcrowding. The paper also advises that everything should be done to halt holding general studies courses in stadiums and open

spaces. Rationalism and critical rationalism are theories that demand intuitive and logical reasoning; these cannot be achieved in crowded, open and noisy spaces. If the nation must develop, its young people should be given the necessary privileges and opportunities to develop their rational capacities and capabilities and it can be done by providing them with the appropriate environments to think and study.

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