



EDUCATIONAL RESEARCH FOR INDIGENOUS KNOWLEDGE AND NEW DISCOVERIES FOR SUSTAINABLE DEVELOPMENT IN AFRICA

GIDEON, VICTOR OLORUNFEMI PhD

*Nigerian Institute of Social and Economic Research
(NISER) Ibadan-Nigeria*

ABSTRACT

Societies all over the world depends on their indigenous knowledge to solve their day-to-day socio-economic problems, address various environmental challenges, and adapt to change. In spite of the colonial administration and its associate viewing indigenous knowledge as being non-scientific, illogical and anti-development, the African indigenous

Introduction

Societies across the world depend on their indigenous knowledge to solve their day-to-day socio-economic problems, address various environmental challenges, and adapt to change. Indigenous as a term has been criticised particularly since the beginning of formal decolonisation projects across the globe such that it has now assumed a diversity of meanings by scholars such as Paulin Hountondji (1997) and David Turnball (2000), viewed it as pejorative and sneering when a group of people are referred to as “indigenous” or their ideas, beliefs, and practices as “indigenous knowledge”. For this reason, even the United Nations is hesitant to use it. Rather, the UN has developed what it calls a “modern understanding” of “indigenous” (and, by proxy, “indigenous knowledge”) based on the following tenets applied to a given person or group of people: self-identifying as indigenous and being accepted by the community as a member; demonstrating historical continuity with pre-colonial and/or pre-settler societies; evincing a strong link to territories and surrounding natural



resources; having distinct social, economic, and/or political systems; having a distinct language, culture, and/or beliefs; comprising a non-dominant part of society; and resolving to maintain and reproduce ancestral environments and systems as distinctive peoples and communities (United Nations Permanent Forum on Indigenous Issues n.d.: 1).

Statement of the Problem

African indigenous knowledge identifies the needs of its people and tailors its traditional and informal system of education to foster development. The imposition of the modern or western education on Africa brought with it both “positive” and “negative” implications. The primary objective of this paper is to direct attention to the

communities have always found value in their own local forms of knowledge. The status and importance of such indigenous knowledge changed in the wake of the landmark 1997 Global Knowledge Conference (GKC) in Toronto. The conference emphasized the urgency of learning, preservation and exchange of indigenous knowledge. Such emphasis was expected to guarantee maximum exploitation of indigenous knowledge for the common good of Africans. It therefore become necessary to discuss how African indigenous knowledge can be an important tool for enhancing teaching-learning process among the Africans in order to address any identified problem and to promote socio-economic development in Africa. African indigenous knowledge identifies the needs of its people and tailors its traditional and informal system of education to foster development. The imposition of the modern or western education on Africa brought with it both “positive” and “negative” implications. The primary objective of this paper is to direct attention to the continuing disconnect between Africa’s indigenous knowledge systems and those imported and superimposed on the region through the education curricula.

Keywords: Indigenous, Education, National. Development. Africa.



continuing disconnect between Africa's indigenous knowledge systems and those imported and superimposed on the region through the education curricula. What is the nature of African indigenous knowledge? What are the implications of Indigenous knowledge in the region's development? In what way will the understanding of Africa's indigenous knowledge systems enable Africa improve upon the models of development through the existing education system? How can the indigenous knowledge be integrated into the western education knowledge for the promotion of socio-economic development of Africa?

Theoretical Framework

This study anchored on Indigenous Theory which was propounded by Kim & Berry (1993). They defined Indigenous Theory as human behaviour or mind that is specific to a context or culture, not imported from other cultures and purposely designed for the people who live in that culture. Indigenous Theory incorporates all aspects of life such as spirituality, history, practices, social-interactions and the language of the people. Indigenous Theory is relevant to this discourse because it determines how a group of people applies their spirituality, historical background, practices, social-interactions and language to foster their socio-economic development.

LITERATURE REVIEW

Indigeneous Knowledge

Mawere (2014); Mapara 2009; Shizha 2013). emphasizing the different definitions of indigenous knowledge over the years, described indigenous knowledge as being synonymous with traditional, local knowledge that differentiates it from the "Western" system, which is generated through universities, government research centres, and private industry. This definition is limited in that when indigenous knowledge is described as traditional, it is presumed to be static. Hobsbawm and Ranger (1983) have argued that being "traditional" does not preclude something being innovative or changing up to a point as new tradition can be born out of an old one which was referred to as "invention of tradition". By contrast, this article refers to indigenous



knowledge as a set of ideas, beliefs, and practices of a specific people that has been used by to interact with their environment and other people over a long period of time.

Indigenous knowledge as a concept is as diverse as there are voices that utter the term. At the foundation of its several interpretations is an agreement that indigenous knowledge is an alternative to mainstream, Western styled, or “modern” understanding of knowledge. Indigenous knowledge explores the unique and shared knowledge of a population of people or community, which informs their collective worldview (Ellen and Harris 2000). Indigenous knowledge is based on communal understanding and is embedded and conditioned by the culture of the locality in question. The development of indigenous knowledge is a by-product of efforts to master the environment and has been a matter of survival to the communities. Indigenous knowledge has been further defined as ‘Culturally informed understanding inculcated into individuals from birth onwards, structuring how they interface with their environments’.

Greiner (1998) asserts that indigenous knowledge is “the unique, traditional, local knowledge existing within and developed around specific conditions of women and men indigenous to a particular geographic area.” Warren defines indigenous knowledge as “the local knowledge that is unique to a given culture or society; it contrasts with the international knowledge system which is generated through the global network of universities and research institutes” (Warren et al. 1995). Kiggundu (2007) defines the term indigenous knowledge as local knowledge that exists as a result of interactions with the environment by members of a community within a geographical area. Indigenous knowledge covers all fields of human endeavour including, but not limited to, agriculture, environment, pharmacology, health, trade and economics, political systems etc.

Indigenous knowledge is often said to be region specific and is often orally transmitted through experience and long-time intentional practice aimed at expertise and excellence and often transcends several generations. Indigenous knowledge is a by-product of the very lives of its adherents and does not subscribe to rigid interpretations due to the



changing nature of man's interaction with his environment. Historically, indigenous knowledge has been arrogated derogatory descriptions such as "primitive," "backward," "savage," "rural," and "unscientific." because non-western knowledge is often repudiated for its lack of "universality." (Kiggundu, 2007). Brush and Stabinsky (1996) describes indigenous knowledge as being culture-specific, whereas formal (Western scientific) knowledge is "de-cultured." In the academia and research, indigenous knowledge systems have been dismissed as archaic, old and backward. Indigenous people's way of life have in the academia and other research oriented and scholarly circles been tendered as simplistic, naïve and even primitive, "reflective of an earlier, and inferior stage in human cultural progress" and consequently of no relevance to the highly advanced and technologically oriented needs of modern society (Knudston and Suzuki 1992). The result is that the academia emphasizes western knowledge, and denigrates local knowledge.

Oftentimes, a comparison is made between indigenous knowledge and international scientific knowledge in a manner that favours the latter and ascribes to it the attribute of universality. The dichotomy that exists between indigenous knowledge and western scientific knowledge does not suggest that the western knowledge is in any way better than indigenous knowledge. According to Oguamanam (2006), scientific knowledge was constituted during the eighteenth and nineteenth centuries and absorbed certain European folk knowledge and practices. Owing to Westernization of knowledge, the term "scientific knowledge" has come to be more popular and acceptable. Such comparison places western science in a higher pedestal as a superior form of knowledge, which other knowledge forms must seek to measure up to. The comparison between western and indigenous knowledge is not necessary, as the baseline of universal reason exist in all traditions.

What exists between the western form of knowledge and indigenous knowledge is a difference in approach, which gives each a distinct identity of its kind, but does not justify the exclusive appropriation of validity to the western knowledge system. The differences are



philosophical in nature, arising from the discrepancies in socio-cultural processes and worldviews. Oguamanam (2006) provides insight into some of the differences, which are:

1. The transmission of indigenous knowledge is mostly orally based, that is, through folklores and legend, or through imitation and demonstrations while western science transmits knowledge through writing.
2. Indigenous knowledge is gained by observing and participating in simulations, real-life experiences and trial and error while western knowledge is taught and imbibed in abstraction.
3. Indigenous knowledge is founded on the spiritual; the notion that the world and its components have life force and are infused with spirit, and this includes both the animate and inanimate objects such as fire and trees while western knowledge severs the animate from the inanimate and treats all as physical entities.
4. Indigenous knowledge views the world as interrelated; it does not necessarily subordinate all other life forms to mankind as they are all interrelated and interdependent parts of one ecosystem while western science views mankind as superior to nature and “authorized” to exploit it maximally.
5. Indigenous knowledge is integrative and holistic in nature, rooted in a culture of kinship between the natural and supernatural while western science is “reductionist and fragmentary, reducing and delineating boundaries to the extent that every relationship is treated as a distinct whole.”
6. Indigenous knowledge values intuition, emphasizes emotional involvement and subjective certainty in perception while western science thrives on logic and analysis, abstracted from the observer, and the replication of measurement to determine results.
7. Indigenous knowledge is based on a long period of close interactions with the natural environment and phenomena while western knowledge thrives on the mathematical and quantitative analysis (Oguamanam, 2006).



Indigenous knowledge and education curriculum in Africa

For education to advance society, it must be relevant to the needs of the people concerned and be appropriate to the social and material environments in which it is pursued. Education must also be adaptive, cumulative and be made to respond to the exigencies of situations and be meaningful to members of the society, taking into account their aspirations and concepts of development. Highly developed human capital is a product of high-quality education. High-quality education empowers individuals within a society to explore the peculiarities of their environment that will lead to innovation and advancement. Education in Africa has fallen far short of fulfilling these aims because western intervention in Africa brought with it a repudiation of Africa's originality, and a belittling of the continent's authentic experiences, which meant that the Africans' environment, experiences, way of life, cultural values, belief systems, and educational structure and curriculum were considered backward, unscientificed, and barbaric.

Following this misconception was concerted effort aimed at a superimposition of the European psyche over that of the African, often strategically orchestrated through the colonially established, or post-colonially controlled education systems. Indigenous knowledge systems, which are a product of the environment and should ideally form the foundation upon which the formal education system of any society is constructed, has been consistently and intentionally relegated to an inferior position. Africa must produce intellectual insights into the nature of Africa's indigenous knowledge systems in order to assess the feasibility of their incorporation into the region's school curricula. This is because a major reason for the absence of widespread innovative research and development in Africa is the result of the foreign paradigm upon which the development efforts in the region is premised.

There is certainly a disconnection between education curriculum in Africa and the continent's indigenous knowledge systems. There is need to focus attention on the relationship between a society's education and knowledge, and the sustainable human development strategies which it may adopt. The difficulty of designing viable development strategies in Africa derives from the fact that the region's modern development



thinking is not the direct descendant nor an adaptation of the principles of the indigenous communities over which the new nation states have imposed their rule (Woodman and Bradford, 1987). It has been established that education must not only be relevant to the needs of the people concerned and be appropriate to the social and material environments in which it is pursued (Hanushek and Ludger 2007), it must also be adaptive and cumulative and respond to the exigencies of situations and be meaningful to the members of the society, taking into account their aspirations and concepts of development. Real development occurs when a people are free to define their development based on societal dynamics.

Role of Indigenous Knowledge in Educational Systems

Below are some important roles of indigenous knowledge in Africa's educational system that will enhance sustainable development:

Means for preserving, transmitting, and applying traditional knowledge in schools: A bilingual or multilingual education allows the full participation of all learners; it gives learners the opportunity to confront, in the positive sense, the knowledge of their community with knowledge from elsewhere. Rattray (1927) says "guard the national soul of your race and never be tempted to despise your past." Therein I believe lies the sure hope that your sons and daughters will one day make their own original contributions to knowledge and progress.

Promoting innovative thinking: It provides the basis for problem-solving strategies for local communities. "Traditional education sought to produce men and women who were not self-centred, who put the interest of the group above personal interest": men and women who were innovative and represented "think tanks" of the society. This means that the inclusion of students' prior knowledge into educational curricula promotes and enhances innovative thinking and constructivism in the learners. This is because learners will be afforded the chance to abstract understanding from their personal experiences, their understanding of the local conditions, and what they already know from their respective communities. This reinforces the point that indigenous education was practical and relevant to the needs of society. Learning



was by doing, which involved observation, imitation, and participation in all the individual's societal activities.

Evaluating the effectiveness of academic knowledge and indigenous knowledge: Intangible heritage, the part of indigenous knowledge that deals with belief and practices, could be used by learners in science classes to evaluate the effectiveness of indigenous knowledge and academic knowledge in real life. Through the inclusion of indigenous knowledge into the curriculum, students are afforded the opportunity to compare and contrast different forms of knowledge for their own good and that of the society of which they are part. In fact, upon careful analysis, one notices that many so-called “traditional” communities have the same content areas as those found in formal education. For instance, many communities teach their members about beliefs and practices related to plant growth, human nutrition, childbearing, pregnancy, food preparation and preservation, medicine, animal husbandry, and others. All these areas are also taught at school in science and agriculture, which means that indigenous knowledge represents an important component of the so-called “global knowledge” on different issues. With indigenous knowledge and academic knowledge in the curriculum, learners are, therefore, better empowered to make their own decisions, and chart their own destiny based on what they learn both at home and at school. Motivate and generate interest in learners: Since indigenous knowledge is knowledge that arises directly out of the children's real-life experiences, its incorporation into the school curriculum can motivate and bolster the intellectual fortunes and interests of the learners as students realise that recognition is given to what they already do, know, and say in their own communities. This resonates well with the adage “From the known to the unknown,” which suggests that indigenous knowledge, being knowledge that the learners have before they enter the academy, will no doubt inspire and stimulate their minds to abstract and even seek solutions to their daily problems using locally generated solutions. In western Mozambique, a traditional method of brewing beer (*tototo*) similar to the distillation system students learn in science at school, has also been invented. On realising that their fruit trees (mango, citrus, and banana) produce more than they can consume, the Mandau



people of Western Mozambique have devised a traditional beer-brewing system through which they make use of the over-ripe fruits: The fruits are put into a big clay pot, where they are then boiled, turning the contents' liquid into steam before the steam is condensed to form a colourless liquid. The liquid is a traditional beer with an alcohol content allegedly much higher than similar products manufactured commercially. Thus, in instances where students go into learning the science of distillation already understanding the *tototo* beer-brewing system, abstraction is much easier to achieve, and motivation and interest in technology and development issues is generated.

Teach language and instil a sense of self-consciousness and cultural identity: Indigenous knowledge could also be used to teach language, recount history, reclaim humanity and dignity, and promote a sense of self-consciousness and cultural identity in learners. This is critical, as people are people because of culture. In fact, we are distinguished from other ethnic groups through our distinct cultures. Even our learning will contribute more to our society if what we know and experience on a daily basis is incorporated into our school curricula. As Busia (1964) reports, there was a widespread expectation among many Africans before and after independence that “education should be rooted in Africa's own cultural heritage and values and have relevance to African societies.” Busia therefore felt that schools could only preserve and transmit this culture by maintaining African languages. This point was made even more forcefully by Moumouni (1968), who claims that “real literacy can only be taught in an African language and should extend to the entire population.” Woolman (2001) emphasises the same when he says that the cultivation of oral and written fluency in local African languages is important in building self-esteem, preserving culture, and advancing the literary output and identity of the Africans.

Woolman's assertion of the importance of African-language development is further underscored by the historical reality that early nation-building in Europe was closely linked to the cultivation of vernacular languages and literature. Under the broadened concept of inclusive curricula and teaching materials promoted by UNESCO (2005), the local community is encouraged to contribute to active learning that



responds to the cultural and physical environment of the school. Inclusive education also implies a relevant and responsive curriculum that takes into account indigenous languages along with other languages. As stated in a UNESCO Position Paper (2003), the requirements of global and national participation, and the specific needs of particular, culturally and linguistically distinct communities can only be addressed by multilingual education.

Through the study of African indigenous knowledge systems, learners can easily appreciate their language, cultural identity, and the wisdom and contribution to knowledge and technological advancement of their ancestors. In fact, the “re-evaluation of traditional education is part of a process of reclaiming cultural identity with deeper roots in authentic African traditions” (Woolman, 2001). The teaching of indigenous knowledge such as children's traditional games, for example, helps youths not only to be creative, morally sensitive, and innovative, but also to appreciate the contribution of forebears' creative genius and indigenous epistemologies in the world of language, games, and physical education. Reversing this situation in Africa is more urgent now than ever if the African people are to be mentally liberated. As Steve Biko (1970) notes, African cultures were “battered out of shape by settler-colonialists” through western education.

Promotion and dissemination of indigenous knowledge across cultures: The inclusion of indigenous knowledge in school curricula will no doubt help different cultures/societies to share their knowledge with each other. This is because people from different cultural backgrounds will be made to share and interact with indigenous knowledges from other cultures in a way that will allow them to appreciate and emulate them where necessary. A good example is that of the Washambaa people of the Usambara Mountains in Tanzania, who developed a land-use system emulating the climax vegetation of the deciduous natural forest through multi-story cropping, integrating annuals and perennials on the same plot. The principles were transferred to Nyabisindu, Rwanda, to be utilised in a project assisted by the Deutsche Gesellschaft for Internationale Zusammenarbeit; special multipurpose contour bunds with trees, shrubs, and grasses were added to the system and re-transferred to the Washambaa once dense population and demand for



firewood had depleted the soil cover (The World Bank 1998; Mawere 2014).

Promotion of cultural dimension of development: Culture is known for something distinctive and inimitable to it. The Mashayamombe, who are of the totem Mhara (impala), are well known for their leather-tanning skills and expertise in manufacturing dyes. As revealed by Chigwedere (1980; 1982), they would rustle cattle, slaughter them, and quickly dye the hides. The Chopi people of Mozambique are well known for their cultural dance, *timbila*. The Kalanga are well known for mat craft. All this knowledge is important in its own right. As emphasised by the World Bank's 1998/99 World Development Report, knowledge, not capital, is the key to sustainable social and economic development.

Building on local knowledge, the basic component of any country's knowledge system, is the first step to mobilising such capital. Moreover, there is a growing consensus that knowledge exchange must be a two-way street. Sharing indigenous knowledges such as those mentioned above would not only enhance cultural dimension of development but also help reduce poverty (World Bank 1998). For instance, instead of spending money on circumcision in the “modern” hospitals, one could opt for a traditional one, such as the one performed during *khomba* initiation rites.

Promotion of interpersonal relationships and reciprocal obligations: As noted by Woolman (2001), traditional education integrated character-building, intellectual training, manual activities, and physical education. The content included all of the activities, rituals, and skills required to sustain the culture and life of the family and community. This means that indigenous knowledge placed great importance on interpersonal relationships and reciprocal obligations. In Africa, the man who combined good character with a specific skill was adjudged to be a well-educated and well-integrated citizen of his community, as trades were learned by the apprenticeship system. This marks the distinction between western education, which emphasises competitive individualism as it eliminates students through failure of tests. This connotes that indigenous knowledge that emphasises interpersonal relationships and human values is more urgently needed in contemporary education than ever before.

Conclusion

Indigenous knowledge can contribute immensely to the learning process of the African people as long as value and respect are accorded to them. In fact, the relevance of indigenous knowledge to the learning process



of the African child cannot be underestimated. Yet, the full realisation of indigenous knowledge can only be recognised if it is fully implemented in education curricula and its importance popularised. This critique of colonial and postcolonial education together with a quest for identity has prompted some African intellectuals to re-examine the objectives, methods, and outcomes of so-called “traditional,” pre-colonial education. Such studies will no doubt offer valuable insights into postcolonial education that may become a guide for reformed and constructive education in Africa. Therefore, as long as indigenous knowledge fails to find full recognition within and real integration into curricula and the mainstream knowledge discourse, the lofty pan-African ideals of collective self-reliance, self-sustaining development, and economic growth will remain an unrealised dream.

Recommendations

1. Indigenous knowledge should be valued and respected in order to enhance development of Africa.
2. Indigenous knowledge should be fully implemented in education curricula
3. The importance of indigenous knowledge should be popularised.
4. The postcolonial education system should serve as a guide for the reformation of constructive and relevant education in Africa.
5. There should be proper integration of indigenous knowledge and the western knowledge into education curricula in Africa.

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