

Africentric Epistemologies and Ontologies Directing Research on African Issues for Authentic Outcomes.

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Abstract

The focus of research in Africa has often been limited only to areas where funding exists, accordingly failing to address the all-important issue of Africentrism (Sawyer, 2004). Such research outcomes impacting policy respond to narrowly defined objectives of the funding agencies thus missing out in documenting the held ideals and values of the people and culture. Studies of this nature use research methods built on Eurocentric theories, not well equipped to handle typical contextual issues relevant in understanding African epistemologies as valid frames of reference for addressing African reality. People's philosophy and psychology depict their mind theory in the way they think, feel, and function, given the relational nature of the culture. This paper, therefore, advocates for more reflections on research methodological approaches in the conduct of research that takes into consideration the relevance of Africentric epistemologies and ontologies. The responsiveness of research is of value to what constitutes a people's behaviours; how these behaviours patterns are acquired, represented and the purpose these serve in human existence. Africentric epistemological experiences are deeply rooted in the logical processes of induction whereby knowledge is socially constructed from specific observations and interdependent behaviours to broader generalizations and theories. This paper advocates the adoption of an inductive approach to understand the reality of the context before subjection to deductive methodologies for scientific rigour.

Key Concepts: Afrocentric, Eurocentric, Epistemology, Ontology, Research, Policy, Induction and Deduction

Resume*

L'accent de la recherche en Afrique a souvent été limité aux seuls domaines où le financement existe, échouant par conséquent à aborder la question primordiale de l'Africentrisme (Sawyer, 2004). De tels résultats de recherche ayant un impact sur la politique répondent à des objectifs étroitement définis des agences de financement, manquant ainsi de documenter les idéaux et les valeurs du peuple et de la culture. Les études de cette nature utilisent des méthodes de recherche fondées sur des théories eurocentriques, mal équipées pour traiter les problèmes contextuels typiques et pertinents pour comprendre les épistémologies africaines en tant que cadres de référence valables pour aborder la réalité africaine. La philosophie et la psychologie des gens décrivent leur théorie de l'esprit dans la façon dont ils pensent, ressentent et fonctionnent, compte tenu de la nature relationnelle de la culture. Cet article plaide donc pour plus de réflexions sur les approches méthodologiques de recherche qui prennent en considération la pertinence des épistémologies et ontologies africentriques. La réactivité de la recherche est importante pour ce qui constitue les comportements d'un peuple ; comment ces modèles de comportements sont

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acquis, représentés et le but qu'ils servent dans l'existence humaine. Les expériences épistémologiques africentriques sont profondément enracinées dans les processus logiques d'induction par lesquels la connaissance est socialement construite à partir d'observations spécifiques et de comportements interdépendants vers des généralisations et des théories plus larges. Cet article prône l'adoption d'une approche inductive pour appréhender la réalité du contexte avant de s'assujettir à des méthodologies déductives de rigueur scientifique.

Mots clés: africentrique, eurocentrique, épistémologie, ontologie, recherche, politique, induction et deduction

**This Abstract was translated From English to French using Google Translate and revised by Editor-in-Chief.*

Introduction

In the 21st century, it is important to develop people's research skills that are essential to the production of useful knowledge that can lead to sustainable development. Critical creation and dissemination of knowledge are vital for economic competitiveness and community development. More important, it informs better on strategies for social cohesion. Even though Africa is home to 12% of the global population, it is claimed that the continent accounts only for just 1% of scientific research contribution (Ameenah, 2015). There is therefore the need not only to improve the volume of scientific research in Africa, but to highlight the fact that research in Africa should be underpinned by Africentric epistemologies that form the bases of knowledge creation that lies at the very core of all political, economic, environmental, cultural, and social development that is relevant to African societies. The relationship between a people's epistemology, ontology, and research is crucial because "for research to play a significant part in development, it must be relevant to the problems unique to the society. In addition, the researchers must be provided with tools to effectively design their models, conduct the research, and successfully disseminate their results" (Nsamenang and Tchombe, 2011. p. 415). According to Aluma (2004), the African indigenous knowledge base has always been viewed as problematic. It is misunderstood, misrepresented, and sometimes overlooked (Aluma, 2004). Oburu (2011) goes on to explain that indigenous African research

inquiry approaches, are often devalued as lacking scientific validation. Thus, most of what constitutes scientific research in Africa is underpinned by Eurocentric epistemologies, methodologies, and theories that are alien to Africa and most of the time does not address the real contextual and developmental needs of the continent. Hence, the problem of the slow pace of developmental outcomes in most African countries is a pointer to people's lack of access to quality relevant knowledge from relevant research that addresses real needs perhaps with insistence on a bottom-up approach. Quality research demands critical reflection on the epistemological and ontological foundations of the creation, dissemination, transmission, validation, and use of knowledge.

To address research gaps in Africa, there is a need to seek valid answers to key epistemological and ontological questions like,

- What are Africentric content and source of knowledge?
- How is Knowledge produced within African cultures?
- What does knowledge say about the African worldview?
- What are the best Africentric methods of inquiry that can lead to effective acquisition, validation, and dissemination of knowledge?

Achieving sustainable development in Africa entails that research should be guided by the philosophical principles (induction, social constructivism) of African epistemology and

ontology. Research can be defined as the search for knowledge, or any systematic effort designed to discover, establish, or ascertain facts. Scientific research relies on the application of scientific methods to address curiosity or uncertainty (Amin, 2005). The scientific method is a way to ask and answer scientific questions by making observations and doing experiments or designing through substantive research endeavours (Tchombe, 2011) based on certain relevant theoretical foundations. According to Narh (2013), the assumptions that underlie the creation and dissemination of knowledge and research on Africa, should be informed by universal scientific processes but should be adapted to Africans' own conception of epistemology (the ways by which knowledge is acquired and used) and ontology (the nature of reality and knowledge) (Wirdze, Sahfeh, Likie & Bongwong, 2011).

Epistemic Decolonization of Research in Africa

There is a need to be aware of the deep histories of colonialism and the long-term prejudices that compromise solutions to present-day research predicament in Africa. Research needs to respect the dignity of people, particularly those seeking social protection and well-being in a society that is becoming increasingly exclusive and discriminatory (Bauventura, 2016). Colonialism is a system of naturalising differences in such a way that the hierarchies that justify domination, oppression, and so on are considered the product of the inferiority of certain peoples and not the cause of their so-called inferiority. Their inferiority is 'natural', and because it is natural, they 'have' to be treated; accordingly, that is, they ought to be dominated. Colonial domination involves the deliberate destruction of other cultures and their knowledge systems (Bauventura, 2016). Today, western ways of thinking, believing, acting even valuing to an

extent dominate Africans' perceptions in education, research, and policy.

This paper addresses the epistemology and ontology of Africa and how these can direct research issues. This involves an engagement with the ways of knowing from the perspectives of those who have systematically suffered the injustices, dominations, and oppressions caused by colonialism. In this regard, an epistemological transformation is required to reinvent social emancipation on a global scale. These evoke plural forms of emancipation not simply based on a Western understanding of the world, but equally on how Africans themselves view their world and the world at large.

Decolonisation of research requires that universal knowledge production and methods of inquiry should be sensitive to the epistemologies and ontology of the people it seeks to address. In this regard, Hountondji (1990) noted the scientific dependence of Africa and the inevitable and structural shortcomings of scientific activity in Africa. Accordingly, scientific, and technological activities, as practiced in Africa today, are just as extraverted, as externally oriented, as economic activity (Hountondji, 1990). Africa's scientific shortcomings are not cognate or consubstantial with its systems of knowledge; on the contrary, they derive from the historical integration and subordination of these systems to the world system of knowledge through colonialism. Political independence has brought about an increase in the number of research facilities, universities, research institutes, libraries, scientific journals, and publishing houses. But these new potentialities are yet to create a substantial outcome in research that is sensitive to the epistemologies and ontologies of the African people. Scientific activity in Africa tends to remain basically dependent on an international division of labour, making scientific invention a monopoly

of the West, while confining African countries to continue to import and apply these inventions (Hountondji, 1990).

Epistemic decolonisation of research in Africa requires a much broader understanding of the world. This means that the progressive transformation of the world may also occur in ways not foreseen by Western thinking. As Bauventura (2016) states, the diversity of the world is infinite. It is a diversity that encompasses very distinct modes of being, thinking, and feeling; ways of conceiving of time and the relations among human beings and between humans and non-humans, ways of facing the past and the future and of collectively organising life, the production of goods and services, as well as leisure. This immensity of alternatives of life, conviviality, and interaction with the world is largely wasted because the theories and concepts developed in the West and employed in the entire academic world do not identify such alternatives as they exist in Africa. The epistemologies of Africa are misconstrued not to address the idea of what the West considers as relevant knowledge per se. Africentric epistemologies are viewed as superstitions, opinions, subjectivities, and common sense. They are not rigorous, they are not monumental and therefore they are discounted (Bauventura, 2016). There is just an urgent need to decolonise the normative foundation of critical theory by rethinking thinking itself and learning to unlearn in order to relearn (Ndlovu-Gatsheni, 2018). Essentially, a critical examination of the epistemologies and ontologies of African worldviews would help eradicate colonial misconceptions affecting research on African issues for authentic outcomes.

African Epistemology and Ontology

The bases of generating knowledge in research lie in a firm grip on the epistemologies and ontologies that shape a particular group of people.

Epistemology is derived from the Greek *epistēmē* (“knowledge”) and *logos* (“reason”), and accordingly, the field is sometimes referred to as the theory of knowledge. Ontology comes from two Greek words: *on*, which means “being” and *logia*, which means “study”. So, ontology is the study of being alive and existing (Wirdze, et al. 2011).

African epistemology

African epistemology is the African theory of knowledge, which includes Africentric methods of acquisition, dissemination, and use of knowledge (Mutombo, 2007). This implies that Africans are conscious of the nature of knowledge; the means used to gain knowledge; the criteria for the assessment of the validity of knowledge; the purpose of the pursuit of knowledge; and the role that knowledge plays in human existence and development. (Mutombo, 2007). African epistemology is therefore the ways by which Africans conceptualise, interpret, and apprehend reality within the context of African cultural values or collective experiences (Anyanwu, 1983). This is based on the understanding that such concepts as knowledge, truth, and rationality for example can be interpreted using African categories as provided by the African cultural experiences without recourse to a Eurocentric conceptual framework. It follows those African traditions, which entail African religions, root culture, oral literature, traditional arts, fables, proverbs, idioms, rituals, music, dance, folklores, and myths, which are the content of African epistemology (Amaechi, 2014). Tchombe, Nsamenang, Lah Lo-oh (2013) could be used for data collection. These constitute the basis also for the establishment of interpersonal relationships, harmony with one another, cooperation, communalism, and spirituality. The authors (Amaechi, 2014, Tchombe, Nsamenang, Lah Lo-oh (2013) argued that from a research perspective, the community

is an important source for discovering processes related to the production of African knowledge and its systems. Accordingly, the crucial epistemological problem is whether Africans who supply cross-cultural data and are privileged to read the published reports can identify with the literature. African epistemology as a science must be well reflected in research arenas.

African ontology

The concept of “being” is attached to the principle of the “Vital Force”, a spiritual power that brings together a harmonious relationship between the physical, human, and spiritual dimensions of existence in a hierarchical fashion (Wirdze et al, 2011). The content or subject matter of Africentric ontology emanates from the physical, human/social, and spiritual situations of indigenous African societies. We must however note that these three indigenous contents do not exist in isolation. Within the context of African cultures, they are psychologically and philosophically connected in such a way that one cannot construe one without the other.

The physical environment influenced the content of indigenous ontology in that the natural environment is meant to assist humans to adjust and adapt to the environment to exploit and derive benefit from it in a harmonious relationship (Castle, 1966). The human/social environment is embedded in a communal lifestyle whereby living together, working together, feeling for one another and collective judgments are key elements of the social order. Parents and other adults in the community ceaselessly socialise their children to etiquettes that upheld reciprocal ties. Other significant values are respect for elders and social hierarchy, sustenance of good friendships, conflict management, caution towards strangers, appreciation of social obligations and responsibilities, and above all, subordinating their individual interests to those of the wider community (Tiberondwa, 1978). As concerns the

value of spirituality, Africans are notoriously religious, with beliefs in the Supernatural God, deities, and ancestors, having a strong influence on physical and human environments. African Traditional Religious (ATR) plays a key role in the life of children and adults alike: it provides a rallying point for the community and backed up socially accepted values and norms such as honesty, generosity, diligence, and hospitality (Ocitti, 1971).

As already highlighted above, the human, the natural, and the spiritual worlds are intricately linked. The natural world provides the habitat for the spirits and sends messages from the spiritual world to the human world. The spiritual world provides guidance, punishment, and blessing to the human world. People therefore must relate to both the natural and the spiritual worlds. (Millar, 1999). From the discussions above Eurocentric approach to research with its supporting explanatory theories would find it difficult to capture these realities depicting a people and their basic life’s philosophy and psychology. Figure 1 illustrates the relationship between the physical, human, and spiritual spheres of African ontology.

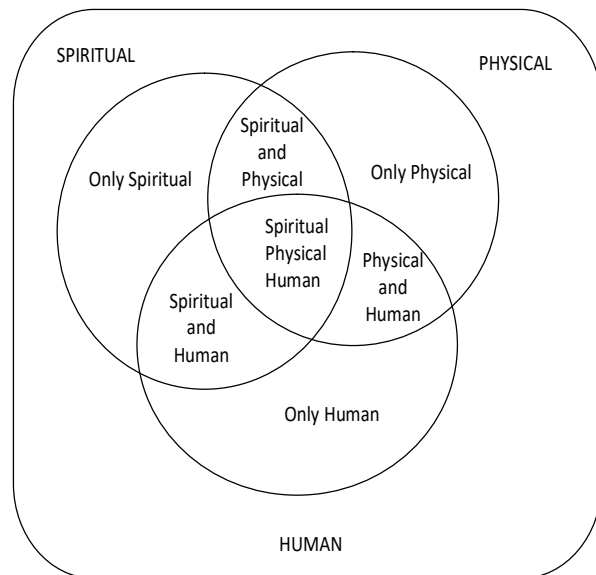


Figure 1 The three circles depict African ontology.

Source: Wirdze, L., Safeh, P., Bonwong, B., Likie, P., (2011). *A Comprehensive Guide to Advanced Level Philosophy*. Unique Printers. Bamenda

Universal Approaches to Scientific Research

Universal scientific research approaches depict how humans generate, acquire, and use knowledge without paying particular attention to cultural diversities. In research, we often refer to the two broad methods as the *deductive* and *inductive* approaches (Wirdze, et al. 2011). The deductive approach works from the more general to the more specific. Sometimes this is informally called a “top-down” approach. We might begin by thinking up a theory about our topic of interest. We then narrow that down into more specific hypotheses that we can test. We narrow down even further when we observations to address hypotheses. This ultimately leads us to be able to test the hypotheses with specific data, that leads to a confirmation (or not) of our original theories.

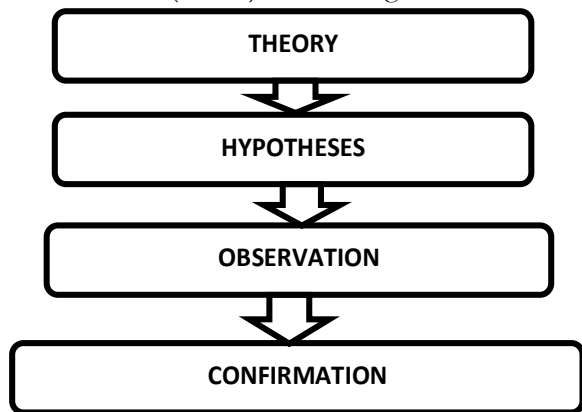


Figure 2 *Deductive Research Process*

Source: Adapted from Streefkerk, R (2019). Inductive vs. Deductive Research Approach | Steps & Examples. <https://www.scribbr.com/methodology/inductive-deductive-reasoning/>

Inductive reasoning works the other way, moving from specific observations to broader generalisations. Informally, we sometimes call this a “bottom-up” approach. By inductive reasoning, we begin with specific observations and measures, detect patterns and regularities, formulate some tentative questions that we can explore, and finally end up developing some general conclusions or theories.

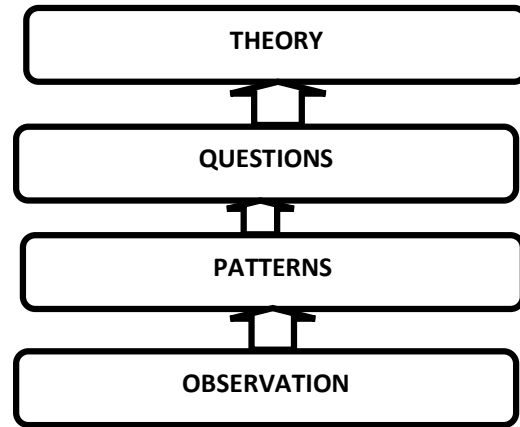


Figure 3 *Inductive Research Process*

Source: Adapted from Streefkerk, R (2019). Inductive vs. Deductive Research Approach | Steps & Examples. <https://www.scribbr.com/methodology/inductive-deductive-reasoning/>

These two methods of reasoning have very different “feel” to them when conducting research. Inductive reasoning, by its very nature, is more open-ended and exploratory, especially at the beginning. Deductive reasoning is narrower in nature and is concerned with testing or confirming hypotheses. It is important to understand the epistemological and ontological underpinnings of different cultures as the bases for adopting research approaches. The next section examines aspects of cultural orientations and how scientific research processes can be applied to various contexts.

The two approaches above are both acceptable requiring appropriate psychological rigour. As observed, the inductive bottom-up approach favours the establishment of grounded theories more so than the deductive top-bottom approach that sets out to test theories. This paper argues that the inductive approach is considered more relevant to Africa while allowing for more theories to be generated from very sensitive and reliable data providing authentic information that can further be subjected to deductive verifications. This covers the current gap in the literature, and

avoid us from using theories, models, and approaches that do not promote African values.

Applying Scientific Research Approaches in Different Cultural Orientations

Cross-cultural studies have unveiled the fact that peoples from different cultural backgrounds have alternative ontological orientations, and this can influence the modes in which research is carried out in order for authentic outcomes to be realised. From our knowledge of African ontology, it can be inferred that cultures in Africa posit a harmonious environmental conception, oral modes of communication, and collective social patterns. These orientations have an influence on how scientific research is conducted in different contexts from deductive and inductive epistemological premises.

Environmental conception

Accordingly, in African cultures, humankind is part of nature, as opposed to the Western conception (exemplified by Christianity and by Islam religion,) in which humankind is above nature and is thus allowed to conquer and control it (Dasen, 2011). This leads to two types of reasoning, global and symbolic on the one hand, based on inductive experience and geared to explaining the final goal of events, and analytical and experimental on the other hand, geared towards a deductive explanation of causal effects (Dasen, 2011).

African epistemologies (unlike Eurocentric epistemologies) are therefore deeply rooted in the logical processes of induction whereby knowledge is socially constructed from specific observations and interdependent behaviours to broader generalisations and theories. This is so because, within African cultures, the harmonious relationship between the different spheres of existence as seen above, blurs the distinction between the subject and object of knowledge

(Tape, 1994). The African sees himself or herself as part of nature, which guides the methodology by which the study of nature is supposed to be approached. This line of thought permits the integration of diverse ethnocultural realities and disparate theoretical threads into a common conceptual system. The embedded knowledge, skills, and values are massed together as integral to social interaction, cultural life, economic activities, and daily routines (Nsamenang, 2005).

Mode of communication

In African cultures, members tend to be related to each other in relatively long-lasting relationships (Hall, 1976). The oral mode of communication patterns of these cultures is conceptually associated with the cognitive abilities of concrete experience, leaving from observed realities to general theories (Inductive approach). These cultures require their members to become sensitive to immediate environments through feelings. For their effective communication, its members need to be situated in a specific surrounding circumstance, which results in the production of tacit knowledge that serves to distinguish covert cues. This kind of knowledge relies on concrete experience and abilities. In addition, interpersonal relationships are crucial in cognitive styles (Tape, 1976).

On the other hand, in Western cultures, information is conveyed in explicit and written codes; thereby, explicit communicative styles in logical forms are valued to a high degree. Interpersonal relationships in these cultures last for a relatively shorter period. Communication patterns of these cultures are conceptually associated with the deductive cognitive abilities of abstract conceptualisation, to the extent that abstract and symbolic presentation in logical forms performs as central methods of communicating with others.

Social patterns

In relation to collective (interdependent) and independent cultures Markus and Kitayama (1991) examined different people across cultures in Africa and proposed interdependent-self and independent-self, each of whose attributes differs among cultures. The interdependent self is viewed as connected to the surrounding social contexts where the self and others are concretely situated. Experience of interdependence with others makes people see themselves not as detached from the social context but as part of an encompassing social context with its concomitant personal relations. Hence, research on groups of people requires naturalistic and participant observations that follow an inductive process. People here are required to watch and listen to others with great carefulness and to reflect upon their observations in their minds. They tend to spend time reflecting on subtle observations before acting and expressing themselves to others.

In contrast, the independent self, being the American and western European notion of self, is seen as an entity that contains important characteristic attributes and as that which is separate from context. There is a belief that people are inherently detached and distinct in American and many western European cultures where the cultural norm is internal control of reinforcement to become independent from others and to express one’s uniqueness. Although people with independent self must be responsive to surrounding social circumstances, their social responsiveness arises relative to their need to determine the best way to display the deductive and inner attributes of the self (Markus and Kitayama, 1991).

The above cultural orientations and how they apply to research are illustrated in figure 4.

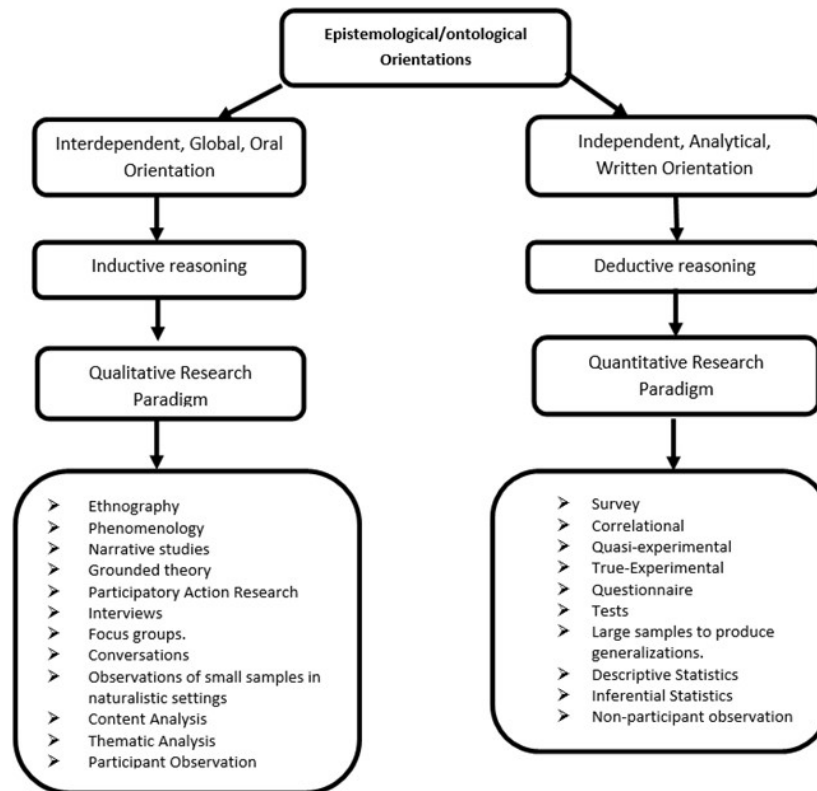


Figure 4 Cultural orientations depicting different modes of reasoning and research paradigms.

Source: Derived from current paper

Figure 4 above illustrates the two arms of cultural orientations. On the one hand, we have interdependent, global, and oral orientations (common to African cultures). Induction is mostly used as a form of reasoning, thereby giving rise to more of a qualitative research paradigm, exemplified by ethnography, phenomenology, grounded theory, interviews, content analysis, and participant observation. On the other hand, we have an independent, analytical, and written orientation (common to Europe and American cultures). The deduction is mostly used as a form of reasoning; hence, quantitative research paradigm is outstanding, with typical examples like survey, quasi-experimental, true-experimental, questionnaire, descriptive and inferential statistics, and non-participant observation.

From Inductive (Qualitative) to Deductive (Quantitative) Methods: Innovative Research Approach for Authentic Outcomes

The qualitative approach to research is closely linked to the process of induction and is characterised by its aims, which relate to understanding some aspects of social life like people's experiences, perceptions, attitudes, emotions, and beliefs. In such cases, its methods will generate words, rather than numbers, as data for analysis. In situations (like in Africa) where little is known, it is often better to start with qualitative methods (interviews, focus groups, observations, narratives, conversations, analyzing figures, pictures, infrastructure, etc). It can help with generating hypotheses that can then be tested by quantitative methods.

The quantitative approach is underpinned by the process of deduction. Quantitative methods are used to examine the relationship between variables with the primary goal being to analyze and represent that relationship mathematically through statistical analysis. Quantitative methods emphasize objective measurements and the

statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, tests, and surveys, or by manipulating pre-existing statistical data using computational techniques. Quantitative research focuses on gathering numerical data and generalizing it across groups of people or explaining a particular phenomenon. While the primary aim of the qualitative approach is to generate a theory (induction) the primary focus of the quantitative approach is to test and confirm a theory (deduction). Nonetheless, social science researchers use mixed methods (both quantitative and qualitative) depending on the nature of the inquiry and the expected findings and results. This paper advocates the adoption of an inductive approach to understanding the reality of the context before subjection it to deductive methodologies.

- **Principles of Inductive (Qualitative) Research**

Bryman and Bell (2011) suggest four principles of qualitative research, which have an important link to the type of knowledge inductive research can produce. These are:

- **Naturalism:** Seeks to understand social reality ('as it really is') and provides rich descriptions of people and interactions in natural settings. This is the most used tradition.
- **Ethnomethodology/Participant Observation:** Seeks to understand how social order is created through talk, interaction, and conversation analysis needs to be conducted.
- **Emotionalism:** Seeks to understand the inner reality ('inside' experience) of people. This tradition has not been used in a significant stream of research but, it can be included in innovative research methodologies.
- **Postmodernism:** Seeks to understand the different ways social reality can be constructed. The impact of culture for example can be included in innovative research methodologies.

• **Creativity and Innovation in Inductive (Qualitative) Research**

Qualitative researchers often aim to produce original and useful knowledge from the subjective meaning of social action. Creativity, therefore, seems to play an important role in the knowledge management process. Torrance (cited in (Afolabi, Dionne & Lewis, 2009) observed that creativity is “a successful step into the unknown, getting away from the main track, breaking out of the mould, being opened to experience and permitting one thing to lead to another, recombining ideas or seeing new relationships among ideas” (p.2). Innovation is the process of both generating and applying creative ideas in some specific research. In other words, innovation involves the introduction of something new and valuable – an artefact or a method – into a functioning production, marketing, or management system according to Cropley (2008). Innovation in social research can be categorised into three levels of novelty according to Wiles, Crow, and Pain (2011), namely:

- The lowest level of innovation relates to adoption where established methods are taken and applied, or methods are combined; or where established methods are taken into a new discipline or sphere of study.
- The mid-level of innovation relates to adaptations. The research method is adapted or changed to improve the method or to meet the needs of a specific research context.
- The highest level of novelty relates to inception where researchers claim to be using a new or novel method.

The State of Research in Africa: Issues and Challenges

With the claim that Africa is contributing just 1% of the world’s total research outcomes (Ameenah, 2015), it is important to highlight the state of research in Africa and the challenges faced by African researchers especially in generating

knowledge that is relevant and contextual for Africa. Progress for Research in Africa, therefore, remains a challenging phenomenon that requires attention for eventual growth and development. We shall examine these challenges.

• **The Gap between Research, Policy, and Practice**

It should be noted that global agendas for development (EFA, MDGs, SDGs) have not explicitly posited the relevance of research towards development and the path which Africa must take towards acquisition, dissemination, and use of its continental body of knowledge. Africa’s Agenda 2063 aspires that by 2063, millions of Africans will have been trained, educated, and skilled with special emphasis on science, technology, research, and innovation, as well as vocational training in every sector (AUC, 2015a). The Continental Education Strategy for Africa (CESA, 2016-2025) equally states in one of its principles that “quality and relevant education, training and research are core for scientific and technological innovation, creativity and entrepreneurship” (AUC, 2015b). p.7). Nonetheless, little is spelled out in the agenda and strategy as to how research should be galvanised for the growth of Africa’s knowledge content. While acknowledging that tertiary education supports economic development directly by generating new knowledge, building capacity to access the global storehouse of knowledge, and adapting knowledge for local use is a critical concern, the 2063 agenda points out a major limitation of African tertiary education by stating that tertiary education is the backbone of research and development, an area of significant gaps. Although South Africa and Nigeria can act as global players in technology development, including aero-spatial research, many African countries have less advanced research and development capacities, which are also male, dominated. Research and development as a

percentage of GDP range from 0.3 percent to 1 percent in most African countries, as compared to European countries (Finland 3.5 percent, Sweden 3.9 percent), USA (2.7 percent), as well as Japan, Singapore, and Korea (2-3 percent) (AUC, 2063a). However, in 2003, African Ministers of Science and Technology were committed to raising research and development (R&D) to at least 1 percent in five years, demonstrating that African policymakers are fully cognizant of the challenge. (AUC, 2063a).

There is a dichotomy between the content of policies and the realities that are found in the field. This is due to inadequate contextually relevant research to inform policy formation and implementation. There tends to be a lack of communication between researchers and policymakers. Policymakers are not always informed about ongoing research and researchers often lack knowledge of the most pressing policy questions that they would need to make their research more relevant. There is the absence of a multidisciplinary approach with emphasis on the social science sub-disciplines of education and inadequate strategies of implementation. The nature of the policy framework for higher education and other research institutes should provide orientations for issues of interdisciplinary research, participatory research, action research, and collaborative research which are the Afrocentric content of knowledge acquisition and dissemination (Nsamenang 2005; Rogoff, 2003).

• Institutionalized Based Research

One of the challenges faced by research in Africa is the limited amount of research that is mostly done by individuals and small groups focused on university studies and professional advancements. The typical projects are still discipline-oriented, university-based, and funded by the university or under its auspices. This type of research is undertaken essentially as part of the academic

career of the researcher who decides what to study and whether and how to disseminate the results (Sawyer, 2004). While this seems to increase the body of university research, there is a downside to this trend toward increasing the institutionalisation of research.

The acquisition, production, and dissemination of knowledge end within institutional boundaries. The results and findings obtained from this kind of research end up in university libraries. Little is published for external consumption and recommendations hardly reach the various stakeholders that were of significance to the research process. The indifferent quality of research support staff reflecting the low priority attached to training and specialization in research management and administration create negative conditions for conducting open research and building holistic research competencies (Sawyer, 2004). Thus, most formal institutions in Africa follow western curricula and methodologies; hence, research conducted may not reflect African epistemologies and ontologies for relevant development (Callaghan, 1998; Ogbu, 1994).

• Funding Research

Another challenge is the availability and adequacy of the means for undertaking research. The underfunding of research and research institutions in Africa is common. Most funding is dominated by Eurocentric donors who dictate alien hypotheses, methodologies, and possible findings that are illusive of the contextual realities in Africa. In most cases, the communities are not aware of this research in their communities. So, African researchers and governments to an extent have allowed the ownership of generating Africentric knowledge and values in the hands of international donors, who dictate research outcomes to their favour. Thus, authenticity and reality may not be assured. As the typical African economy has become more outward-looking, its

leading edges have locked more firmly into external knowledge sources while local producers of knowledge rely on foreign-based parent companies for research. Under such conditions, local knowledge generation becomes increasingly uneconomic, and the market forces direct resources away from support for the local production of modern knowledge (Sawyerr, 2004).

The problem of funding is further viewed in the environmental conditions for successful research focused on the institutional provision of infrastructure within which research is conducted. The key elements here are a minimum

of research infrastructure, such as laboratories, equipment, libraries, and an effective system of information storage, retrieval, and utilisation, as appropriate management systems that recognize and reward high-caliber research (Sawyerr, 2004). All of these have implications for productive research endeavours that are compounded by challenges in access to publish in reputable journals, given that most journals' requirements are Eurocentrically oriented because of their position as gatekeepers of knowledge dissemination.

Figure 5 illustrates the challenges and issues of the current state of research in Africa.

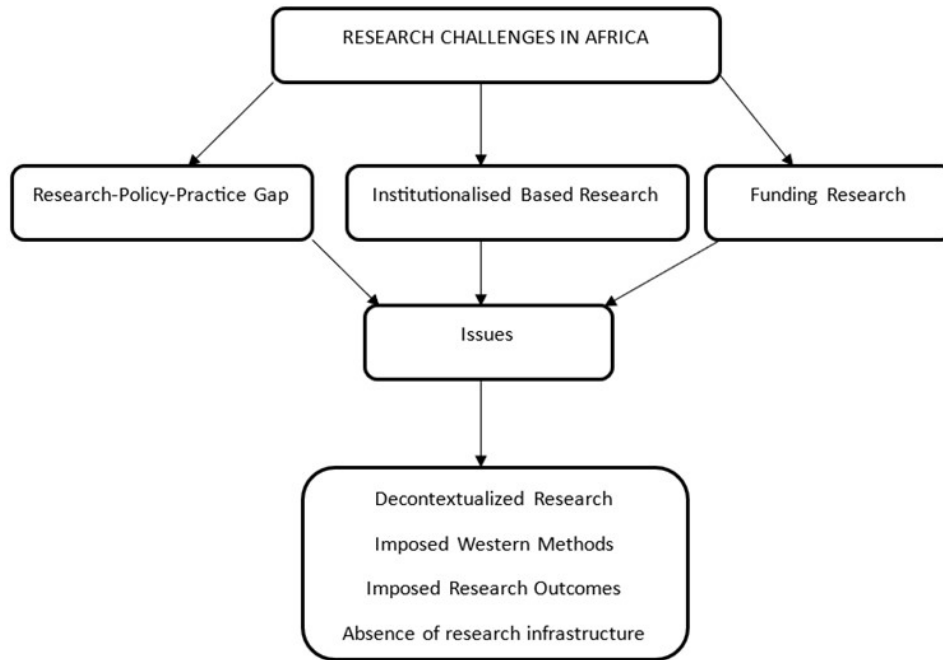


Figure 5 *Challenges and Issues of Research in Africa*

Source: Derived from current paper

Achievements and Contributions of African Research and Development

Despite the challenges and issues of research in Africa, it is worthy to note that Africa has largely contributed to world research, though these contributions are not acknowledged due to misconceptions that can be attributed to a lack of knowledge or appropriate information about persons, events, or situation (Tchombe, 2016). Africa's research output is continuously being

compromised in favour of writings that do not reinforce Africa's values, actions, customs, culture, and identity; writings about Africa that are untrue; writing about Africa, which are negative (Smith, 2003). The goal of this section is to explain Africa's greatness and its contributions to education, science, and spirituality, which the western world sought to eradicate. Table 1 illustrates African achievements in research, science, technology, engineering, mathematics, and humanities.

Table 1 *African Research and Development*

| S/N | Research Field | Research Output |
|-----|---|--|
| 1 | Birthplace of Humanity and Cradle of Civilisation | Discovery of skeletal remains of modern man (6th stage) and stone tools specific at Herto Bouri in Ethiopia 55000 years ago; Egyptian civilisation, 3000bc. |
| 2 | African Scripts | African scripts found in about 800 texts, discovered in French museums. |
| 3 | Metallurgy/Mining/Tools | Production carbon steel; technological supplication; greater fuel economy; advances in metallurgy and tool making. In Tanzania, Uganda, Rwanda |
| 4 | Astronomy | Discoveries of movement around the sun, the constellations, the cycles of the moon, detailed astronomical observations by Egyptians and Dogon people of Mali. |
| 5 | Medicine | The use of plants to heal pain, diarrhoea and malaria etc. Performance of medical procedures like vaccination, autopsy, brain surgery, skin grafting, filling of dental cavities and Caesarean section. The African multigenius Imphotep is considered as the first physician in history. Furthermore, there have been African achievements in modern times eg vaccination against smallpox was practised in Africa long before Edward Jenna introduced in in the UK and Europe. |
| 6 | Mathematics | Scripted textbooks that included division, multiplication, geometry, trigonometry, and Algebra developed in Egypt, Nigeria and Zaire. |
| 7 | Architecture/Engineering | Egypt and its pyramids; Immense construction site and cities in Great Zimbabwe, Mozambique, Timbuktu; Ancient Africans sailed to South America and Asia, hundreds of years before Europeans. |
| 8 | Writing | The Egyptian hieroglyphic system. This earliest form of writing was a syllabic system that included hundreds of phonetic signs, shortened, and used as an alphabet by the Egyptians 5000 years ago. |
| 9 | Economic and Political Development | Civilisations of the Nile, Mali, and Great Zimbabwe etc. Timbuktu was a major economic and university centre for about three centuries, from the 13 th up to the middle of the 16th centuries. The gold from the great empires of West Africa, such as Ghana, Mali and Songhai, provided the means for Europe's economy to take off in the 13 th and 14th centuries. Other kingdoms and empires were in Ethiopia in the east which was in many ways exceptional rather than typical. |

Source: Adapted from Tchombe, M. S. T. (2016). Shifting the Paradigm from misconceptions about Africa's non-productivity to new narratives on its achievements and contributions: Implications for Research: *Journal of Educational Research in Africa* (JERA) No. 8, 2016 –pp-13-29

The continuous decontextualisation of research in Africa, imposed by western methods and outcomes calls for new ways of conducting research that is sensitive to Africentric epistemologies and ontologies, with the adoption of an inductive approach to understand the reality of the context before subjection to deductive methodologies. Africa has ecological, humanistic, and spiritual capacities embedded in traditional education that can form the bases of research in Africa (Tchombe, 2016). We complain about the universality of research approaches, but the concepts of validity and reliability are western concepts (Chilisa, 2014 & Reviere, 2001). Yet, these are considered and applied with different concepts in African-centered research achieving the same results using five elements such as truth, justice, harmony, community, and commitment (Reviere, 2001, p.725)

The Importance of African Traditional Education in Developing Research Capacity

Despite the view held by western philosophers (Georg Wilhelm Friedrich Hegel, David Hume, Levy Bruhl) that African traditional education is pre-logical and not scientific, Ogunniyi (1988), ascertained that scientific and traditional ways of viewing nature are the two systems of thought that are not completely incompatible. African traditional education refers to a teaching and learning process by which indigenous knowledge transmitted responds to different physical, agricultural, ecological, political, and sociocultural challenges (Merriam, 2007). It is valuable because it is holistic, and “addresses the intellectual, physical, and attitudinal aspects of life. It encourages the development of critical thinking, imagination, creativity, and action skills. African education foresaw the era of globalisation and its need for the development of problem-solving skills” (Tchombe, 2016, p.19). Rogoff (2003) argues that human development must be understood as a cultural process. Individuals

develop as participants in their cultural communities, engaging with others in shared endeavours and building on cultural practices of prior generations. Onwauchi (1972), argues that if the educational process is to be functionally relevant for the African people, it must be structured to maintain a dynamic pattern of continuity with the family and the cultural life patterns of the people. For research to be effective in Africa, there is a need for it to reflect the ecological, humanistic, and spiritual dimensions of African traditional education as illustrated in figure 6.

Reflecting on the African philosophies, we observe they inform on values, ethics, and principles (Chilisa, Major, & Khudu-Petersen, 2017). The characteristics that we could draw from and that would inform how research in Africa should be conducted reminds us that Africans have a relational spirit, thus actions and activities engage more participatory and collaborative approaches. Employing these approaches is very inclusive and does devalue African knowledge systems. The holistic approach governs practices considering the environment, spiritual, historical, political, social, cultural, and psychological, and a holistic view of human development. Research endeavours will value African ethics to ensure the consideration of peoples’ opinions and views as central to research (Chilisa, Major, & Khudu-Petersen, (2017). Ubuntu-driven research like the Ujama’a is ontological, co-creational, theoretically, humane like the MMR (Tchombe, 2019), and methodologically collaborative (Mugumbate, & Chereni, 2020).

Vision for Research in Africa

The research vision is conceptualised here as constituting a programme and set of approaches that are situated within the decolonisation politics of the indigenous peoples’ movement. The agenda is focused strategically on the goal of self-

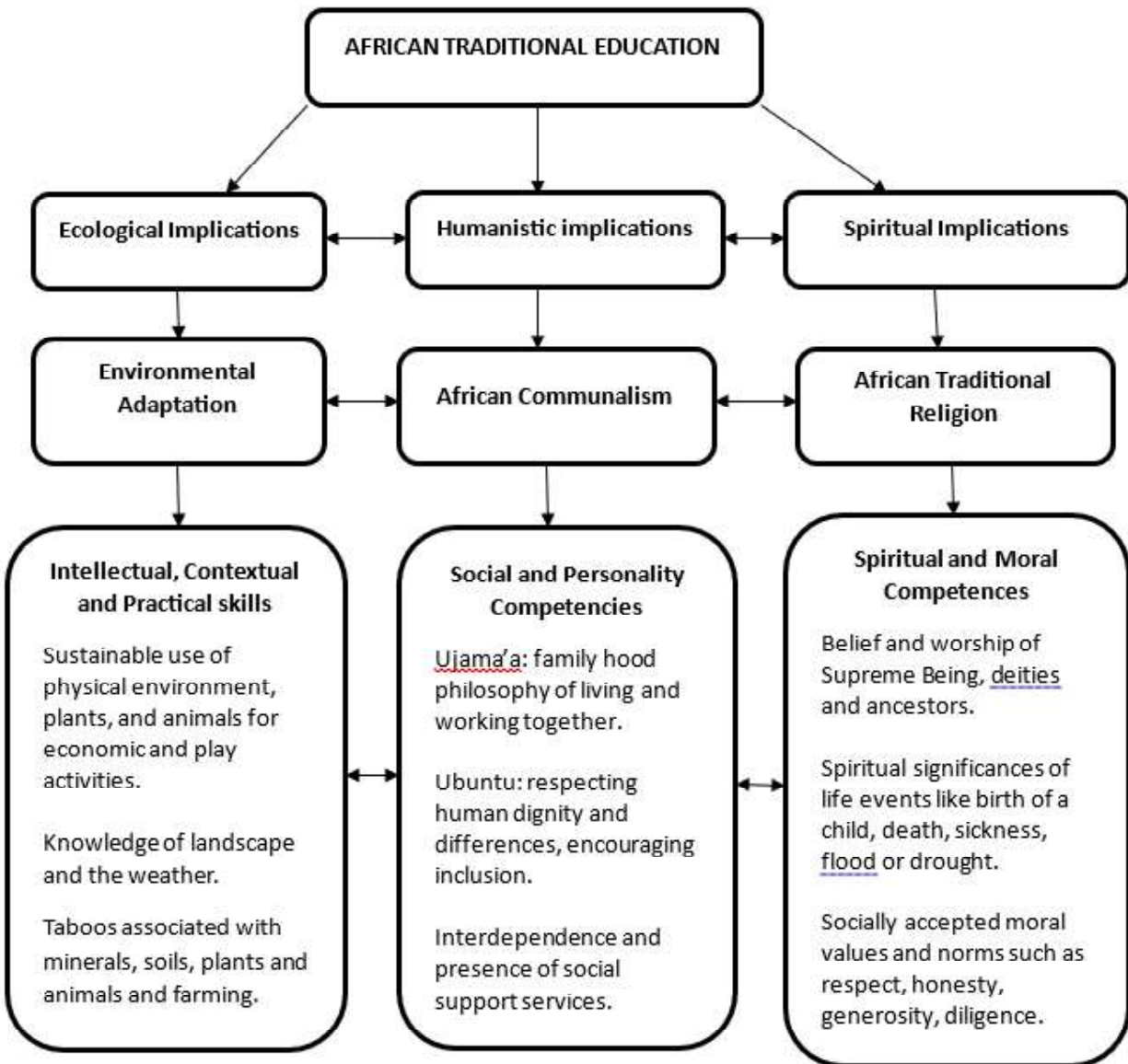


Figure 6 Traditional Education in Developing Holistic Research Capacity

Source: Adapted from Tchombe, M. S. T. (2016). Shifting the Paradigm from misconceptions about Africa’s non-productivity to new narratives on its achievements and contributions: Implications for Research: *Journal of Educational Research in Africa* (JERA) No. 8, 2016 –pp-13-29

determination of indigenous peoples. Self-determination in a research agenda becomes something more than a political goal to embrace the goal of social justice which is expressed through and across a wide range of psychological, social, cultural, and economic terrains (Smith, 2003). This is illustrated in figure 7.

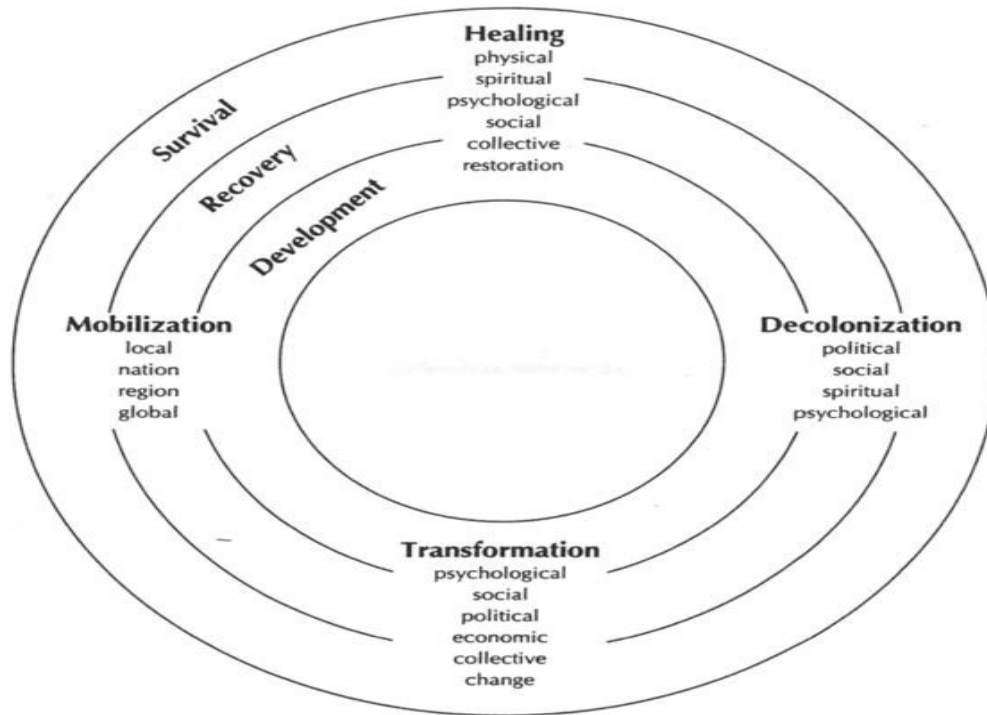


Figure 7 *The indigenous Research Agenda*

Source: Smith, L. T. (2003). *Decolonizing methodologies: Research and Indigenous Peoples*: London New York Otago Press

The four directions named here are decolonisation, healing, transformation, and mobilisation. They are processes that connect, inform, and clarify the tensions between the local, the regional, and the global. They are processes that can be incorporated into practices and methodologies. Four major tides are represented in the chart survival, recovery, development, and self-determination. They are the conditions and states of being through which indigenous communities are moving (Smith, 2003).

Conclusion and Recommendations

Whether conducted for specific purposes (action research) or as an academic pursuit by policymakers or academics, research has an impact on all areas, especially in the context of human and social development. However, there is a growing need to question the paradigms of knowledge and innovation that inform the research carried out in Africa. Harnessing local knowledge is important in prioritising the local community as the object of development

(Teasdale and Rhea, 2000). To achieve this, we must start by using our oral approach for data collection which should lead us to decolonise literature (Chilisa, 2019) by identifying its explanatory strength in addressing African issues. We should be able to comment on the weaknesses and adopt or search for relevant literature.

This challenge is at the doorstep of all African scholars to adopt and use appropriate research designs, approaches, and techniques to obtain authentic knowledge. With the increased recognition of the social role of higher education in development (Bok 1984), universities are called upon to conduct projects and programmes aimed at local communities (and the world) and provide services to local people. There is a need to promote stronger integration of training and research and closer interaction with stakeholders in the development process. There is also an urgent need for African Universities to create a South and South and even North-South network not only for collaborative research but also to put in place

a mechanism to enhance publications and the valorisation of the outcomes of research in Africa to inform others and enrich their knowledge and understanding of African scholarship.

The quality of research is not measured by how much we copy methods from outside Africa but by how relevant, contextual, and decolonial our methods are. Our position does not discount or misappropriate research or scientific approaches based on their universal strategies, and methods for research analysis be it qualitative or quantitative follow similar procedures, discussions, and valorisation of research findings that are in no way different. The differences rest in adopting a decolonising approach to address relevance and authenticity.

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