The Role of Indigenous Knowledge Systems in Decolonising African School Curricula: A Zambian Perspective

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ABSTRACT

This study critically examines the integration of Indigenous Knowledge Systems (IKS) within Zambian primary and secondary school curricula as a decolonisation strategy. Despite mounting global recognition of IKS value in addressing contemporary educational and developmental challenges, African curricula continue to privilege Western epistemologies, marginalising local knowledge systems and culturally grounded pedagogies. Employing a concurrent embedded mixed-methods design, this research engaged 61 participants including teachers, university lecturers, curriculum specialists, traditional leaders, and community members across Eastern and Lusaka provinces of Zambia. Data were collected through focus group discussions, semi-structured interviews, and structured questionnaires, subsequently analysed thematically and through descriptive statistics. Findings reveal a pronounced disconnect between policy rhetoric acknowledging IKS and its substantive curricular integration, with 72.7% of respondents indicating inadequate IKS representation in formal education. While participants overwhelmingly recognised IKS relevance in cultivating practical skills, preserving cultural heritage, and addressing localised challenges particularly in agriculture, environmental management, and traditional medicine significant barriers persist. These include entrenched colonial mindsets, insufficient teacher preparation, limited community engagement, and the paucity of documented IKS resources. The study proposes a comprehensive decolonisation framework integrating five key IKS domains (agriculture, environmental management, traditional medicine, cultural heritage, and indigenous technologies) with complementary aspects of Western scientific knowledge. This hybridised approach, grounded in preparationism, functionalism, and communalism philosophies, aims to produce holistic, contextually relevant education fostering self-reliance and cultural continuity. The research contributes to ongoing discourses on epistemological diversity, culturally responsive pedagogy, and sustainable development in postcolonial African education systems.

Keywords: Indigenous Knowledge Systems, decolonisation, curriculum reform, Zambian education, culturally responsive pedagogy, epistemological diversity

INTRODUCTION

The architecture of contemporary African education systems bears indelible imprints of colonial legacy, manifesting in curricula that systematically privilege Western epistemologies whilst marginalising indigenous ways of knowing (Breidlid, 2013; Higgs, 2016). As Kim (2017, p. 606) rightly observed that, "despite the existence of multiple worldviews, cultures and sciences with which learners enter school, curricula worldwide have become standardised with western science worldview." This epistemological hegemony engenders what Breidlid (2013, p. 55) terms "epistemological shock" in African classrooms, where learners' lived realities and indigenous knowledge remain evidently absent from formal educational discourse.

Zambia's educational trajectory exemplifies this phenomenon. Following British colonisation initiated in 1888 through Cecil Rhodes' British South African Company (Roberts, 1976), missionary-led education deliberately sought to displace African knowledge systems. Snelson (1974, p. v) critically noted that missionary education aimed not merely at evangelisation but at "replacing African traditional culture and mores with what they regarded as the more civilised standards and ways of living of the Western world," effectively producing individuals who were "Africans in blood and colour but English in tastes, opinion, morals and intellect." This

cultural subjugation through education represents what Ngugi wa Thiong'o (1986) termed the "colonisation of the mind" arguably more pernicious than political colonisation itself.

As Chambers (1997) persuasively argued, authentic education must emanate from understanding the lived experiences and knowledge systems of communities. Contrary to missionary perceptions, Africans possessed sophisticated educational systems predating colonial contact, systems that ensured intergenerational knowledge transfer, community cohesion, and contextual problem-solving (Kelly, 1999; Mushi, 2009). These Indigenous Knowledge Systems (IKS) defined by Hiwasaki et al., (2014a) as "understandings, skills, and philosophies developed by local communities with long histories and experiences of interaction with their natural surroundings" remain relevant for contemporary challenges, particularly climate change adaptation, agricultural innovation, and sustainable resource management (Filho et al., 2022; Trisos et al., 2022).

Despite this recognised value, substantive IKS integration within formal curricula remains elusive. Postcolonial African education systems persist in mirroring colonial paradigms, negating indigenous voices and perpetuating epistemic injustice (Higgs, 2016). This study interrogated this paradox within the Zambian context, examining stakeholder perceptions of IKS relevance, identifying integration barriers, and proposing pragmatic pathways for curricular decolonisation.

Statement of the Problem

While Indigenous Knowledge Systems offer demonstrated efficacy in addressing localised challenges including climate adaptation, agricultural sustainability, traditional healthcare, and cultural preservation, Zambian primary and secondary curricula maintain their colonial architecture, systematically marginalising these knowledge forms. This epistemic violence perpetuates several interconnected crises: escalating youth unemployment stemming from education-employment misalignment, erosion of cultural identity and values, inadequate responses to climate-induced agricultural challenges, and underutilisation of traditional ecological knowledge and medicinal resources. The absence of systematic IKS integration represents not merely pedagogical oversight but a continuation of colonial knowledge hierarchies that position Western epistemologies as inherently superior whilst denigrating indigenous knowledge as "primitive" or "unscientific" (Odora Hoppers, 2002).

The urgency of addressing this lacuna is underscored by mounting evidence that IKS provides cost-effective, culturally appropriate solutions to contemporary challenges (Mapedza et al., 2022; Thakur et al., 2020). Yet, without deliberate decolonisation efforts interrogating curriculum content, pedagogical approaches, and underlying epistemological assumptions, Zambian education risks producing graduates alienated from their cultural heritage and ill-equipped to address community-specific challenges. This study therefore investigated: How do key education stakeholders perceive IKS relevance? What barriers impede IKS integration? What frameworks might facilitate meaningful curricular decolonisation?

LITERATURE REVIEW

Indigenous Knowledge Systems: Conceptualisation and Characteristics

Indigenous Knowledge Systems constitute comprehensive epistemological frameworks encompassing localised understandings, skills, practices, and philosophies developed through sustained community-environment interactions (Ellen & Harris, 1996; Battiste, 2002). Unlike Western scientific paradigms privileging abstraction and universality, IKS emphasises contextuality, relationality, and holistic understanding, recognising spiritual, cultural, and ecological knowledge dimensions (Dei et al., 2000; Semali & Stambach, 1997).

Trisos et al., (2022) illuminated IKS richness, noting that over 30% of global indigenous languages originate from Africa, each encoding "ecosystem-specific knowledge on biodiversity, soil systems and water." This linguistic diversity represents an invaluable repository of environmental knowledge, agricultural innovations, and sustainable resource management practices evolved over millennia. Filho et al., (2022) catalogued key IKS domains: crop farming, livestock husbandry, resource management, conflict resolution, risk management, traditional healthcare and medicine, community development, and indigenous plant utilisation each offering pragmatic solutions to contemporary challenges when appropriately integrated with modern scientific approaches.

Philosophies Underpinning African Indigenous Education

African indigenous education rested upon distinct philosophical foundations fundamentally differing from Western educational paradigms (Mushi, 2009; Ocitti, 1971). Five core philosophies structured indigenous pedagogical practices are discussed in this section.

Traditional African education as earlier indicated was underpinned by a set of interrelated philosophies that positioned learning within the practical, social, and cultural contexts of the community. Preparationism was central to this framework, as education explicitly aimed to prepare learners for clearly defined societal roles. Skill transmission was often gendered, ensuring that both men and women acquired competencies necessary for the functioning of their communities. Unlike abstract and decontextualised Western curricula, this purposeful approach ensured that education was directly aligned with communal needs and expectations.

Complementing this, the philosophy of functionalism emphasised the immediate utility of knowledge, skills, and attitudes. Learning was designed to have practical applicability, directly contributing to socio-economic activities. Education was not intended merely as preparation for distant futures but was inherently functional in the present, thereby bridging the modern disconnect often observed between education and employment (Ogbo & Ndubisi, 2021).

Communalism further defined traditional African education, prioritising collective achievement over individual success. Learners were encouraged to embrace community responsibility, participate in intergenerational knowledge transfer, and engage in shared child-rearing practices. This communal orientation stood in stark contrast to the competitive individualism commonly associated with Western education systems.

A holistic approach to learning was also central, promoting multiple competencies rather than narrow specialisation. Learners acquired skills across diverse domains such as farming, hunting, construction, and food preparation, ensuring adaptability and comprehensive contribution to community life. Such breadth in learning cultivated individuals who were versatile, capable, and fully integrated into the social fabric.

Finally, perennialism played a key role in preserving cultural heritage. By transmitting valuable practices, norms, and values across generations, education ensured continuity and reinforced culturally embedded wisdom. While potentially conservative, this philosophy provided a foundation for stability and the intergenerational transmission of community knowledge.

Together, these educational philosophies produced what Kelly (1999, p. 10) described as an education that was "meaningful; unifying; holistic; effective; practical; relevant… strongly person-centred," with no separation between learning and the world of work. Traditional African education, therefore, was not merely a process of skill acquisition but a comprehensive system that cultivated responsible, competent, and socially embedded individuals.

Indigenous Pedagogies: Contemporary Relevance

Contemporary scholarship on indigenous pedagogies offers a range of approaches that are pivotal for the decolonisation of curricula, foregrounding learners' cultural realities while sustaining academic rigor (Ogbo & Ndubisi, 2021; Garcia, 2013). Culturally Relevant Pedagogy, as articulated by Lim (2019), underscores the importance of designing curricula that are responsive to learners' cultural contexts. Such curricula actively engage students in the pursuit of academic success, foster cultural competence, and cultivate critical consciousness, enabling learners to interrogate and challenge structural inequalities.

Critical Indigenous Pedagogy, described by Garcia (2013), adopts a resistance-oriented framework that privileges indigenous knowledge systems and affirms indigenous sovereignty. This approach extends beyond conventional instruction by developing learners' critical awareness of social injustices and empowering them as transformative agents within their communities.

Land-Based Pedagogy addresses the historical and ongoing dispossession resulting from colonisation by reconnecting indigenous peoples with their ancestral territories and the social relations embedded within them.

This pedagogical orientation promotes ecological literacy, strengthens cultural identity, and situates learning within relational understandings of land and community (Garcia, 2013).

Community-Based Pedagogy foregrounds the role of local communities in educational processes. May (1999) emphasises that active community participation enhances parent-teacher collaboration, strengthens learner engagement, dismantles prevailing stereotypes, and cultivates collective self-respect and political agency among learners.

Finally, Culturally Sustaining and Revitalising Pedagogy, as proposed by McCarty (2014), performs a triple function: it challenges and transforms enduring colonial legacies, facilitates the reclamation of displaced indigenous knowledge, and reinforces accountability to community stakeholders in educational processes.

Collectively, these pedagogical frameworks provide actionable pathways for implementing decolonised curricula that are culturally resonant, socially transformative, and academically robust. By centering learners' cultural realities, they offer a means to reconcile educational rigor with indigenous epistemologies, ensuring that education contributes meaningfully to both personal development and community empowerment.

Decolonisation Discourse in African Education

Decolonisation transcends superficial curriculum adjustments, requiring fundamental interrogation of epistemological assumptions undergirding educational structures (Breidlid, 2013; Letsekha, 2013). Chisholm (2018) noted that South African curricula face persistent criticism for colonial roots and insufficient diversity, critique applicable across postcolonial Africa. Africanisation, as articulated by Letsekha (2013), necessitates pedagogies responsive to African learners' cultural and physical realities, challenging Eurocentric knowledge hierarchies.

However, scholars including Agrawal (1995), Briggs (2005), and Sillitoe (1998) cautioned against romanticising IKS, acknowledging its limitations when employed in isolation from scientific knowledge. The imperative lies not in replacing Western knowledge with IKS but in achieving epistemological pluralism what Cheong (2002) conceptualised through his "theory of a tree," wherein education roots itself in local values whilst absorbing beneficial global knowledge, fostering hybrid systems producing locally grounded yet globally competent citizens. This is similar to Seehawer and Bredlid's (2021) contention who explained that integration of IKS with Western knowledge aims not at mere knowledge coexistence but at mutual enrichment, with learners accessing expanded solution repertoires transcending either system's individual limitations.

IKS Integration Challenges

Despite recognised benefits, systematic IKS integration faces multifaceted challenges, namely: inadequate documentation of primarily oral traditions, insufficient teacher preparation in IKS content and pedagogy, assessment structures incompatible with IKS evaluation, limited community involvement in curriculum development, and persistent colonial mindsets denigrating indigenous knowledge (Msila, 2016; May & Aikman, 2003). Addressing these requires comprehensive reforms spanning policy frameworks, teacher education, community engagement mechanisms, and fundamental reconceptualisation of knowledge validity.

METHODOLOGY

Research Design

This study employed a concurrent embedded mixed-methods design, privileging qualitative approaches whilst incorporating quantitative data for triangulation and complementarity (Creswell, 2009). This design facilitated comprehensive understanding by capturing diverse perspectives across data types and analytical levels, aligning with the study's aim to examine complex socio-cultural phenomena surrounding IKS integration.

Study Setting and Sampling

Research was conducted in Eastern Province (Lumezi District) and Lusaka Province, Zambia, selected for their contrasting urban-rural dynamics and ethnic diversity. Purposive sampling identified information-rich

participants possessing extensive IKS and educational system familiarity, whilst simple random sampling ensured broader representativeness and minimised selection bias.

The sample comprised 61 participants: 30 teachers from primary and secondary schools, 5 university lecturers specialising in education and curriculum studies, 1 curriculum specialist from the Directorate of Curriculum Development, 10 traditional leaders (group headmen) representing indigenous knowledge custodianship, and 15 community members (parents) actively engaged in children's education. This diverse stakeholder representation enabled multi-perspectival analysis of IKS integration dynamics.

Data Collection Instruments

A triangulated, mixed-methods approach was employed to ensure robust and comprehensive data capture. Focus group discussions with teachers and community members facilitated rich, interactive dialogues, revealing collective perspectives, experiential knowledge, and divergent views on the integration of Indigenous Knowledge Systems (IKS). Semi-structured interviews with traditional leaders, lecturers, and a curriculum specialist elicited nuanced, in-depth insights into IKS conceptualisations, perceived relevance, barriers to integration, and strategies for curricular decolonisation. Structured questionnaires, employing a five-point Likert scale, quantitatively assessed stakeholder perceptions of the extent of IKS integration, level of engagement, and readiness for collaborative curriculum reform, thereby enabling the identification of statistical trends that complemented and triangulated the qualitative findings.

Data Analysis

Data was analysed thematically as well as by using descriptive statistics. The themes were established from the main ideas that frequently appeared in the collected data.

RESEARCH FINDINGS

The study findings presented were the views of 30 teachers, 15 parents who were members of the community, 1 curriculum specialist, 5 university lecturers and 10 group headmen. Verbatim of the respondents were used as much as possible. Besides, the five point Likert scale was used to supplement on the qualitative data.

Relevance of Indigenous Knowledge System

When asked to explain about the relevance of Indigenous Knowledge System in today's modern education, all the respondents provided insightful responses of course some responses were similar. For instance, one parent stated that 'Indigenous Knowledge System is very relevant because it helps to keep our culture and have it preserved and it also provides real life experiences.' This response was shared by other 6 parents and 8 group headmen.

When the same question was posed to teachers, one teacher who by then was Head of Department for Social Sciences explained that;

It is relevant because it incorporates the environment where learning takes place and it is capable of producing learners who are job creators and not job seekers. Thus, indigenous knowledge system in our modern education would make our education system very practical and relevant to our day-to-day activities.

One university lecturer who shared similar views with other interviewed lecturers as well as with 5 other group headmen narrated that;

Indigenous Knowledge System is very important as it promotes cultural heritage, traditional skills and community values thereby enriching modern education with diverse perspectives and holistic learning experiences. In all I have said, it is clear that most of the problems that we have can be effectively solved locally because Indigenous Knowledge System offers a rich source of wisdom and understanding about the natural world, including traditional practices related to agriculture, medicine and conservation of our natural environment.

Methods of Integrating Indigenous Knowledge System with Modern Education

When asked to explain how the Indigenous Knowledge System and the Western modern science can be integrated in the 21st century to address several problems affecting humanity, different views came up. For instance, one of the parents explained that 'the integration of the two education systems can be effectively done by firstly involving members of the society with rich indigenous knowledge in conducting experiments in modern laboratories for them to also appreciate the relevance of modern science.'

Besides, one of the teachers also explained that;

One of the ways could be bringing on board some selection criteria to select from indigenous science only that which matters most because it is not everything in indigenous science that is still relevant in today's Western science. Those relevant content can be integrated in the school curriculum. Teachers would also invite members of the community such as learners' parents with skills to help in the teaching of practical skills such as bricklaying, carpentry and many more others.

One group headman stated that 'modern education has suppressed indigenous science, the very moment we shall treat the two to be equal that will be the day education will start addressing African problems.' Similarly, another respondent who was a teacher explained that 'integration of both the indigenous science and the modern science would work out very well when there is mutual respect, openness and willingness to learn from one another.'

To clearly investigate the extent to which the Zambian education system could be decolonised, one teacher stated that 'the decolonisation needed to be done at a large extent because the world has become a global village thus common solutions are inevitable.' This view was supported by 6 parents who were members of the community. In addition, one group headman explained that;

There is need to completely decolonise the current education system. Almost everything that is in our curriculum is targeted to colonise the African mind set so that they could continue depending on developed countries. For instance, Africans are rich in minerals but only a small percentage in Zambian Geography syllabus is taught regarding mining. I am of the view that Westerners extensively teach mining in their education system to prepare themselves to come and explore and manage African minerals.

One curriculum specialist who was interviewed also added that 'the extent of decolonising the Zambian education system need to be extensive but something that must be done methodically and practically right from early childhood education up to tertiary level.'

Table 1: Perception of Respondents on the Extent of Integrating Indigenous Knowledge System in Modern Education

The researcher used a likert scale to find out the perceptions of respondents on the extent of integrating IKS in modern education. The table below shows the responses of the respondents.

Statements		**Total Positives**	**Strongly Agree**	**Agree**	**Undecided**	**Disagreed**	**Strongly Disagree**	**Total Negatives**
Indigenous Knowledge System is adequately integrated in Modern Education system.	N %	11 20.0	5 9.1	6 10.9	4 7.3	25 45.5	15 27.3	40 72.7
The integration of Indigenous Knowledge System in Modern Education is partially done.	N %	22 40.0	16 29.1	6 10.9	4 7.3	19 34.5	10 18.2	29 52.7
There are gaps that need to be filled by integrating	N	39	20	19	5	4	7	11

Indigenous Knowledge System in the Modern Education System	%	71.0	36.4	34.5	9.1	7.3	12.7	20.0
Members of the society with rich Indigenous Knowledge System are highly involved in the teaching and learning in modern schools.	N %	5 9.1	2 3.6	3 5.5	1 1.8	30 54.5	19 34.5	49 89.1
The Ministry of Education and Curriculum Development Centre officials view community leaders and members with rich IKS as stakeholders who do not understand modern education.	N %	27 49.1	16 29.1	11 20	6 10.9	12 21.8	10 18.2	22 40.0
Members of the society with IKS have taken a low profile in the implementation of Modern System of Education.	N %	29 52.7	17 30.9	12 21.8	8 14.5	11 20	7 12.7	18 32.7
Members of the society with rich IKS have a special role in improving the quality of education in the 21st century.	N %	42 76.4	25 45.5	17 30.9	2 3.6	8 14.5	3 5.5	11 20.0
Teachers are ready to collaborate with members of the society to integrate IKS into the Modern Education System.	N %	18 32.7	6 10.9	12 21.8	2 3.6	25 45.5	10 18.2	35 63.6

Table 1 shows that the majority of the respondents (72.7%) were not of the view that Indigenous Knowledge System was adequately integrated in the modern education system. 40.0 % of the respondents either strongly agreed or agreed that the integration of Indigenous Knowledge System in modern education was partially done while 52.7% either strongly disagreed or disagreed that the partial integration of Indigenous Knowledge System in modern education was partially attended to. Besides, the majority of the respondents (71.0%) indicated that there were some gaps that needed to be filled by integrating Indigenous Knowledge System in the modern education system. This was confirmed by a lot of respondents (89.1%) who either strongly disagreed or disagreed that members of the society with rich Indigenous Knowledge System were highly involved in the teaching and learning in modern schools.

Many respondents (76.4%) either strongly agreed or agreed that members of the society with rich IKS had a special role to play in improving the quality of education in the 21st century although 49.1% of the respondents were of the view that the Ministry of Education and Curriculum Development Centre officials regarded community leaders and members with rich IKS as stakeholders who could not understand modern education. Also 63.6% of respondents either strongly disagreed or disagreed that teachers in Zambian schools were ready to collaborate with members of the society to integrate IKS into the modern education system.

Significance of Blending the Indigenous Science and Western Science

Blending the indigenous science and the Western science cannot be understated because of the value that is unquestionably be added to the body of knowledge. In addressing the question on the relevance of blending the indigenous science and the Western science, one parent from the community explained that 'both the Western science and the indigenous science are inseparable because the two balances up the knowledge one acquires and eventually promotes finding common solutions to the global problems.' In addition, one of the lecturers narrated that;

Blending the two system of education would make Zambian education to firstly appreciate our own science and secondly to become more practical and relevant to human society which in turn would play a key role in alleviating lack of employment among the youths. Appropriate blending would also instigate potential to foster a more holistic inclusive and sustainable approach to scientific inquiry and problem solving while at the same time empowering indigenous communities and promoting the diversity of knowledge system.

One of the teachers whose view was shared with three headmen stated that;

Indigenous science and Western science each offer unique perspectives and knowledge systems. For instance, in terms of promoting holistic understanding, indigenous science often emphasises interconnectedness, relationships as well as balance with nature as it recognises the spiritual, cultural and ecological dimensions of knowledge. Western science on the other hand focuses on empirical evidence, experimentation and system analysis. Thus, by blending the two, we gain a more holistic understanding of the world that integrates both empirical data and traditional wisdom.

Availability of Indigenous Knowledge System in the School and University Curricula

Despite having noted the relevance of blending Indigenous Knowledge System and Western Education System, the researchers wanted to determine how much Indigenous Knowledge System was housed in the Zambian school and university curricula. 20 teachers and 3 university lecturers stated that there was nothing much about the indigenous knowledge system that was included in the Zambian school and university curricula. One of the outstanding reasons was 'there is nothing much that is included in the school and university curricula because of the colonisation of the African mind where we tend to think that everything about indigenous education or knowledge is outdated and primitive.'

Besides, one of the parents stated that 'maybe 60% has been included in the curricula on paper but in practice slightly 20% or less has been included in the school and university curricula.' One headman narrated that 'very little I feel of IKS has been incorporated into the school and university curricula, indigenous knowledge and cultural heritage is still being erased.' At one of the schools, one teacher explained that 'Indigenous Knowledge System have gained recognition as valuable alternatives for addressing contemporary issues. These systems are increasingly being integrated into school and university curricula.'

Application of Indigenous Knowledge in Modern Education

The researchers also wanted to investigate the extent to which Indigenous Knowledge System was being applied in today's modern education. In response, at least 40% of the respondents stated that Indigenous Knowledge System was very much applied. For instance, one headman explained that;

I strongly feel that indigenous knowledge is being applied in several areas, for instance, in the manufacturing of modern medicine, natural herbs are very much used. Also, the bringing on board of vocational subjects in our school curricula has a lot to do or to learn from the practicality of the indigenous knowledge system.

Although some respondents felt that IKS was highly applied in modern education, other respondents amounting to 60% still felt that there was nothing much about IKS in the modern education. For instance, one of the teachers argued that;

The integration and application of Indigenous Knowledge System in modern education is still very limited. There are promising developments and growing awareness of the need to recognise and incorporate this valuable knowledge into our so called modern education but nothing much has been done. There is need to put our efforts together so that we can collaboratively identify that which is critical from Indigenous Knowledge System and have them integrated and applied into the main stream education.

Similarly, one group headman shared similar views with other members of the community when he stated that 'because of its scarcity in documentation, little is being applied. Our minds have been washed away with modern education. Thus, application of indigenous knowledge is not appreciated and valued.'

DISCUSSION AND IMPLICATIONS

It is imperative to note that although the world is revolving and societal needs varies with time, one may not completely ignore the relevance of Indigenous Knowledge System even in this era. In this study it has been established that IKS helps in preserving human culture and in provision of real-life experiences. Meaning, if properly integrated and implemented, the current problem of lack of employment amongst the youths who are the majority in Zambia may not arise as IKS is capable of producing graduates who are job creators and not job seekers. Based on the research findings which are in agreement with the study done by Mapedza et al., (2022), the researchers in this study are of the view that most of the challenges that many African countries are facing can be effectively attended to locally if the rich source of wisdom and understanding about the natural world, including traditional practices related to agriculture, medicine and conservation of our natural environment that are provided through IKS can be properly utilised.

Besides, based on the research findings, the researchers in this study are also in support of the study findings by Agrawal (1995), Briggs (2005), Leach & Means (1996), Scoones & Thompson (1994) and Sillitoe (1998) who argued that despite IKS being seen as part of the solutions to many challenges affecting humanity in the 21st century, it can only be effective if the good aspect of it are effectively integrated into the Western modern education.

It must be appreciated that both IKS and the Western modern education system are at variance. Meaning, there must be an aspect of compromise in one way or the other for the two systems to work together. This study reveals that one of the ways of integrating the two-education system is firstly by involving members of the society who are blessed with rich indigenous knowledge in conducting and managing experiments in modern laboratories for them to appreciate what modern science is capable of doing as well coming up with the selection criteria so that only that which matters most and applicable in today's modern education are selected from IKS. This is very important because it is not everything about IKS that is of relevance in the 21st century. This finding is in agreement with the study by Leal Filho (2022) who explained that Indigenous Local Knowledge practices such as crop farming, livestock husbandly, resource management, conflict resolution, management of impending risks, indigenous health care and medicine, community maintenance and use of plants when employed would help African countries to effectively manage resources, improve productivity as well as to respond to several biophysical hazards. This is also in line with Mwanza and Changwe (2021) who revealed that indigenous education and modern formal education are not parallel or opposite in nature as they easily complement each other and enable effective provision of education for its learners.

Although literature has shown that both indigenous education and modern formal education do complement each other in the provision of education, the findings of this study clearly indicates that Indigenous Knowledge System was not adequately integrated in modern education system as the gaps were more visible. The school and University curricula had not incorporated the Indigenous Knowledge System in its education system making members of the society with rich IKS to take a low profile in the implementation of the modern system of education. It was surprising to note that although this was the case on the ground, the respondents in this study indicated that members of the society with rich IKS had a special role to play in improving the quality of education in the 21st century. The researchers in this study felt that there was need to reconsider the relevance of IKS in the school and university curricula if change in the quality of African education was to be experienced. The study findings are in agreement with various studies that have been undertaken. For instance, Enyi (2001) acknowledged that indigenous education is relevant to the modern education because it creates the base for the foundation of education for self-reliance in modern education. Similarly, Ogbo and Ndubisi (2021) argued that what modern education was striving to achieve in the 21st century was exactly the focus of indigenous education which aimed at promoting the practice of learning by doing where learners were prepared for life duties in their respective societies.

It is important to also acknowledge that in the 21st century, both indigenous science and the Western science must be embraced to support modern science. Popp (2018) acknowledged that modern science is made up of both the indigenous science and the Western science. He noted that there were many examples that had shown

that blending indigenous science and Western science resulted in excellent contributions to modern science which the researchers in this study were supporting based on the research findings.

CONCLUSIONS

The study findings in this study have revealed that Indigenous Knowledge System in the 21st century is very relevant and its cardinal components needed to be integrated in the Western form of education if African education system is to be holistic. The university and school curricula did not take Indigenous Knowledge System into consideration even when its applicability was visible in several ways namely: crop farming, livestock husbandly, resource management, conflict resolution, management of impending risks, indigenous health care and medicine, community maintenance and use of plants. The researchers were in agreement with the views of Leal Filho (2022) who acknowledged that when Indigenous Local Knowledge practices are effectively employed would help African countries to effectively manage resources, improve productivity as well as to respond to several biophysical hazards. Besides, the two career pathways that were being implemented in Zambian education system would work very well as learners would be well catered for in the provision of education based on their abilities and graduates would be job creators instead of job seekers which would eventually play a role in reducing lack of employments among the youths. The study revealed that the unavailability of IKS in the school and university curricula contributed to members of the society with rich IKS irrespective of their capability to take a low profile in making contributions that would lead to the improvement of Western science, hence, decolonising the mind of Africans would be critical in the blending of the indigenous science and the Western science.

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