

VALUED INDIGENOUS KNOWLEDGE CONTENT FOR SCHOOL CURRICULUM INTEGRATION IN THE ZAMBIAN CONTEXT

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ABSTRACT

Africa has for a long time been a rich source of data for the development of social systems, social sciences theories and paradigms. This calls for the need to identify the epistemological foundations of Indigenous Knowledge (IK) and discover, evaluate and understand how knowledge is created and disseminated in local communities. Academic scholarship therefore has a duty to recognize these cultural knowings as legitimate sources of knowledge. It was thus the aim of this study to explore the value of IK and its potential integration into the Zambian school curriculum. Aware that IK embody rich cultural heritage, practical life skills and contextual relevance, the study argued for the inclusion as means of promoting culturally responsive education. Considering the Eurocentric nature of most education systems in Africa, there is need for a paradigm shift in curriculum content in which IKSs are also recognized as legitimate knowledge forms. The study employed a qualitative approach, using document analysis and semi structured interviews with some key education stakeholders who included teachers, traditional leaders, curriculum specialists and religious leaders. The collected data was thematically analysed drawing on constructivism and theory of tree as guiding theoretical frameworks. Findings of the study revealed that while IK is acknowledged in policy discourse, its actual integration in the curriculum content remains fragmented, limited and often ignored. Integration into classroom practice is inconsistent primarily due to a lack of teacher training, insufficient instructional materials and minimal community involvement. The study concluded that for Zambia's education system to become truly inclusive and contextually relevant, a deliberate and structured effort is required to mainstream IK and pedagogies across subjects and levels. The study thus recommends a curricular reform to a local context for curriculum reform, teacher education and community engagement and policy implementation to support transformation.

Keywords: Indigenous knowledge, curriculum, integration, culturally responsive education

1.0 INTRODUCTION

Kim (2017;606), rightly observed when he stated that “despite the existence of multiple worldviews, cultures and sciences, with which learners enter school, curricular worldwide have become standardised with western science worldview.” This may affect the learning of students and impair their identity construction. In addition, there is little doubt that the explosion of technology in society is having a profound influence on how we view and interact with people across the globe. There is therefore great need for societies to carefully plan their education through

the school curriculum (Bishop, 1985). The issues of relevance of the education curriculum for Africa have been on the agenda of many if not all African governments since the attainment of independence by the various countries. In trying to deal with the complexities of curriculum development, Nyerere (1968) suggested that an effective educational curriculum should not divorce its participants from society in which they live. One should not ignore the role that context plays in how teaching and learning is interpreted, implemented, and experienced (Perumal, 2015). Experiential knowledge is always acquired through personal exploration and practicality based on everyday lived experiences. Acquisition of this form of knowledge is through interaction with daily experiences of the realities of the world reflecting capabilities, priorities, and value systems of members of the community.

Education is expected to initiate everyone into the general culture of his/her community and ensure that the transmission of the culture is sustained (Wane, 2008). These are expected to be unique as societies are unique in their composition, past experiences, daily challenges, world view and future (Ndille and Phil, 2018). This calls for adequate campaign for the vitality of Indigenous Knowledge Systems (IKSs) as the lack of seriousness in considering the integration of IKSs in Africa's education systems, Zambia inclusive, is a clear indication of their marginalization. It is time that IKSs be infused in the education curricular of African countries so that citizens can enjoy ownership as well as utilize the knowledge they have had since time immemorial. It is therefore the hope of this study to bring to the public domain of knowledge generation by bringing out the valued IK for integration in the Zambian school curriculum.

1.1 Research Question

What indigenous knowledge do key education stake-holders value as worthy of inclusion in the school curriculum?

1.2 Theoretical Framework

Constructivism was used as the theoretical lens for the study. According to Engdasew (2013:392), constructivists believe that "learning should involve social negotiation and mediation, which implies that social interaction and cooperation play a role in the development of socially relevant skills and knowledge." Furthermore, constructivists recommend that the contents of skills in lessons must be relevant and within the learners' prior knowledge and skills framework. Constructivism is, therefore, a learning theory that argues that learners construct knowledge out of their prior experiences and develop their thinking abilities by interacting with other children, adults, and the physical world. Indigenous knowledge however, as prior knowledge varies between and within groups and need to be examined so that knowledge that is considered useful and valuable is integrated in the school curriculum appropriately (Hodson, 2009). According to the constructivist theory, teachers can use the prior knowledge of learners to teach content, promote effective learning and teach them to generate new ideas (Bryant, 2010) and different answers.

The other theory that guided this study was the theory of a tree propounded by Cheong (2002) who assumed that the process of fostering local knowledge should have its roots in local values and traditions but absorb external useful and relevant resources from the global knowledge system to grow the whole local knowledge system inwards and outwards. This means that local and indigenous ways of knowing such as observing natural process; adopting modes of survival; obtaining sustenance from the plant and animal world; and use of the natural materials to make tools and implements should be hybridized with Western ways of knowing to come up with a relevant non-biased curriculum.

2.0 LITERATURE REVIEW

The 21st century has witnessed the rise of a movement toward integrating indigenous and modern education. Such a move is credited to various scholars who propound diverse contestations on how Western education and epistemologies were and are dominating syllabi (Breidlid, 2013; Dube et al., 2022; Odora Hoppers, 2002). While research is increasing across the world including Africa on how to redress the negative effects of apartheid, colonialism and subjugation of indigenous knowledge, the institutionalisation and integration of indigenous knowledge into education has been rather sluggish and problematic (Hatcher, 2012; Msila, 2006; Van Damme and Neluvhalani, 2004). Pioneering studies reveal that there is an enormous storehouse of diverse IK embedded in IKS, but it need to be transformed for urban contexts and educational classrooms practices, such transformation must necessarily involve indigenous knowledge custodians (Foley, 2006; Govender et al 2013). Bold moves of integration of IK in western education also birthed from the narrative that Africans are being taught foreign concepts that do not yield authentic results in the unique environments, thus relooking at their indigenous philosophy to recalibrate solutions that are fit and proper. It was thus the aim of this study to establish how best the worthwhile IK can be integrated in the school curriculum with active engagement and consultations from key indigenous knowledge custodians. This was done in recognition to the fact that an important aspect of IK education is the active and equitable engagement of IK custodians in the formal education and crucial to this process as noted by Jacob et al (2015), is the involvement and empowerment of indigenous peoples in every facet of policy planning and implementation process. If well integrated in the school curriculum, indigenous knowledge could still greatly enrich society in general and education in particular if properly accessed, resourced, and managed. To integrate IK into Western academies is to thus, recognize that different knowledges can coexist, that different knowledges can complement each other, and that knowledges can be in conflict at the same time. Instead of viewing knowledge that does not agree with western science as “obsolete”, it should be valued and used concurrently with western science.

Shizha (2013) rightly observed that although the reclamation of IKS may be frustrated by globalisation in school curriculum, there are global voices that attempt to support and reclaim programs to support IKS worldwide and in sub-Saharan Africa. IKS in Africa has evolved into contemporary forms as it predates colonialism in its origin (Hewson, 2015). There is thus need, to utilise the richness of local IKS and integrate them to be part of the formal education curriculum and use them to solve problems that exist in society (Msila, 2007). This echoes for the need to Africanize the curriculum by adopting teaching pedagogies geared towards the cultural and physical realities of the African learner (Letsekha, 2013). It is in this regard that Seepe (2000) argued for a radical reconstruction of African education. The way to decolonize education systems in Africa is through the application of principles of IKS to develop curricula that meets local needs (Shava, 2016). The call for Africanisation of education therefore is hope for integration of IKS holistically and selectively to develop systems of education with structures, organisation and content aligned with African needs, worldviews and social systems (Assie-Lumumba, 2016). Zambia is equally rich in local culture cutting across language, molarity, economic, spiritual and political aspects which can be integrated into the curriculum to promote IKS.

Some of the major concern when it comes to the proposed integration and/or inclusion is the formation of a uniform curriculum that will embrace all Indigenous peoples in Zambia. Indigenous peoples are composed of diverse, unique, and distinct cultural values within a geographical location. For instance, the Tongas, Ngonis, Bembas, Nsengas and Lozi speakers can share a geographical community but subscribe to different values. Integration and/or inclusion of such indigenous knowledge in one school would be a massive task. This does not merely affect the

curriculum but requires the teacher to be well-versed in many different knowledge systems to cater to all learners. Nonetheless, it can still be argued that even though there is this diversity that seems complex, it is doable. Diversity does not mean disunity. This is what this study hopes to bring to the public domain of knowledge generation by advocating for the valued IK for integration in the Zambia school curriculum.

3.0 METHODOLOGY

This study adopted a qualitative phenomenology approach. Phenomenology is rooted in the notion that all our knowledge and understanding of the world comes from our experiences (Hein and Austin, 2001). In essence, there is no objective reality, but rather it is our perceptions of these experiences that are our reality. It was the stance of this study that the perception of key education stakeholders and traditional leaders or representatives on IK and how they experience it that will form the basis of reality. As a method, phenomenology involves studying how humans make sense of their experiences or ‘participants perspectives’ Being a study that is concerned with people’s views about IK, it was imperative to acquire their in-depth understanding of the subject matter. As rightly noted by Berger and Luckmann (1967), the phenomenologists view human behaviour, what people say and do, as a product of how people define their world. To this effect, qualitative approach was deemed appropriate as a methodological approach employed by the study. Qualitative approach is a holistic and emergent strategy that is exploratory in nature, and which is used to answer questions about the complex nature of phenomena, with the purpose of describing and understanding the phenomena from the participants’ point of view (Fouche and Schurink, 2014). Data was collected using semi-structured interviews as well as document analysis. The collected data was thematically analyzed drawing on similar patterns using constructivism and theory of tree as the theoretical lens that guided the study. Key education stakeholders such as traditional leaders, religious leaders, curriculum specialists as well as teachers were interviewed as they were considered appropriate for the wealth of information needed for this study.

4.0 RESEARCH FINDINGS

The study sought to establish from the respondents the valued forms of IK that they considered suitable for integration in the school curriculum for Zambian schools. This was done in recognition of the fact that not every aspect of IK could be accommodated in the school curriculum and that there was need to consider the most relevant aspects of the knowledge which were more applicable to the lives of the learners for their day-to-day experiences and survival. Identifying specific types of indigenous knowledge that key stakeholders believed should be included in the curriculum, respondents stressed that integrating heritage such as traditional ceremonies, folklore, and historical practices into the school curriculum may provide learners with a deep appreciation of local ancestry and foster a sense of belonging and continuity within their communities.

“Riddles and traditional stories. Riddles and stories will help learners in critical thinking and problem solving” TL05

“I believe certain forms of indigenous knowledge that are valuable and worthy to be included in the school curriculum are traditional ecological knowledge, storytelling and oral traditions, sustainable agriculture practices, and traditional healing methods” T02

Notably, there are various IK items that the respondents highlighted and perceived to be valuable and could be integrated in the school curriculum, among them are indigenous languages, history and culture, agricultural and environmental IK, herbal medicine and healing, and scientific and technological skills. Most respondents noted that using traditional stories, myths, and legends to

teach values, history, and problem-solving skills could strengthen learners understanding of indigenous practices firsthand.

4.1 Indigenous languages

Most responses pointed to the need to focus more on the indigenous languages for use in the education system. Respondents explained that indigenous languages integrated into the curriculum is vital for the transfer of cultural identity, history, and knowledge. Including indigenous languages in the curriculum ensures their preservation and allows learners to connect deeply with their heritage.

One respondent noted, *“Teaching in indigenous languages can preserve these languages and strengthen students’ cultural identity”* (TL01).

Most of the study respondents highlighted the components of indigenous or local language such as folktales, riddles, proverbs, tongue-twisters, songs, storytelling and poems to be key concepts that are crucial and need to be integrated in different areas of the school curriculum to guide behaviour. They stated that Indigenous languages can be taught as standalone subjects or integrated into activities like storytelling, poetry, and folklore, enriching learners’ understanding of their linguistic and cultural roots. They further emphasized that this addition also supports cognitive diversity and fosters pride in local traditions.

Most respondents stressed that language is very essential especially starting from early childhood education claiming that IK is authentic when learnt in mother tongue, respondent TL04 for instance said

local languages are very key in relation with learning IK. For example, some of IK in riddles, proverbs, songs, and stories told in indigenous language cannot be translated into English without losing meaning.

Respondent T07 supported this assertion and proposed teaching and learning of indigenous languages in school. He said indigenous languages should be taught separately at lower primary level i.e. grade one two and three to assist the learning of other IK right from family to school. Almost all respondents agreed that learning was made interesting in the past when stories were told in indigenous languages at home and at school. Almost all the respondents agreed with Participant RL04 who stated that:

When we were young, we used to visit our grandparents to sleep there, eeeh... then we were given riddles, storytelling what else was there?... [silence]. Knowledge was passed in form of stories, riddles, proverbs, songs, folktales and children’s games so that we pass that knowledge to the next generation. Eeh... when you look at that knowledge it was all about something to do with morality, religion, politics and culture and it needs to be integrated in curriculum.

In agreement to that, respondent T01 said *in the terms of poems, idioms and proverbs, there is a lot that is important in our culture including nature and we can’t afford to have our children miss out such valuable lessons*. Citing folktales as one of the important components of language, participant T04 said *“Language-folktales...can be integrated into the curriculum as part of the language and literacy curriculum. ...It can be used for literacy development and to enhance resilience”*. Emphasizing that children’s games as part of language may be used to teach other subjects, respondent CS01 said, *“long ago we used to play “chiyatho” [children game] where we collected small stones and put them in the circle then you throw one stone in the air and take some stones*

and push the rest in. You know, we learnt how to minus through that game”. Participant T09 added saying, *African indigenous knowledge is hidden in indigenous literature and folklore. Our heritage is in our language.* Almost all the respondents emphasised that culture is embedded in the language and literature of a people, and the significant role indigenous languages play in learning and preserving of IK cannot be overemphasised.

4.2 Indigenous Technologies and Scientific Skills

Another aspect of IK that came out prominent from respondents as valued knowledge for incorporation in the school curriculum was indigenous technologies and scientific skills. Most respondents revealed that indigenous technologies represent centuries of innovation tailored to local environments and challenges. Examples include traditional irrigation systems, tools for sustainable farming, and methods for constructing durable shelters using natural materials. Integrating indigenous technologies into science, agriculture, and engineering subjects demonstrates their practical applications and highlights the ingenuity of local communities. As noted by respondent CS02,

Teaching learners about indigenous technologies can offer innovative, affordable solutions to contemporary challenges, such as climate change and food insecurity.

He explained that this approach can inspire learners to adapt traditional technologies to address modern needs. Respondents pointed out various indigenous technological and scientific skills as well as experiences that they think are still valued for inclusion in school curriculum today. Almost all stakeholders attested to have been exposed to such life skills when they grew up highlighting some of them as visual design skills, traditional house construction, weaving, pottery, bead work and all these linked to arts and culture. Respondent TL07 recommended their infusion in the school curriculum saying, *“the use of reeds and plastic to make table mats, trays, baskets locally can be taught in school curriculum and can empower learners with very cost-effective entrepreneurship skills”* He claimed that these asset skills used to be there initially in primary and secondary art and craft subjects but they are no longer included in the current curriculum. Explaining how practical and significant these skills are in one ‘s life respondent RL04 explained that:

I used to knit and sew during needlework in school. I used to make nice trays, baskets, jerseys, dresses, scarfs to mention a few. We used to do that. So, I think in the Arts and Culture subject as well as home economics subjects if our children can also be introduced to those needlework things and be taught about their importance, you see the sitting mats, baskets, door mats and also clay works and all of that, it can be such a life changing curriculum „because these skills are very significant, they are part of our lives

The responses also indicated that indigenous scientific knowledge, grounded in observation, experimentation, and ecological understanding, offers complementary perspectives to western scientific paradigms. This includes traditional weather forecasting, natural resource management, and herbal medicine. This can be noted from the response of TL06 who said:

Students can learn how indigenous communities forecast weather using environmental cues, which aligns with modern meteorology (TL06).

Most of the respondents were of the view that incorporating this knowledge into science and environmental studies equips students with a broader understanding of sustainability, biodiversity, and holistic approaches to problem-solving. Additionally, highlighting indigenous contributions to science fosters respect for cultural diversity in knowledge systems.

4.3 Agriculture and Environmental IK

Respondents mentioned several indigenous traditional agricultural practices that they think should be preserved through inclusion in the school curriculum content. Firstly, food preservation was seen to be important, specifically how grains and vegetables were preserved traditionally, how maize was traditionally preserved and ground to make mealie meal, beer and drinking porridge brewing were seen to be important. Respondent T04 said:

“When we were growing up, we never used to buy seeds from the shop. We used to produce our own seeds from the harvest time and preserve them until the ploughing season arrives again. What I know is that this does not happen these days. We used to keep crops like maize, groundnuts and we never used to buy samp or beans from the shops because we used to grow them on our own and have them naturally preserved. We used to pound the maize on our own using a mortal and a pistil, and brew drinking porridge (munkhoyo, thobwa, chibwantu) and traditional beer from the maize we harvested. So, I discovered that in the school syllabi for agriculture, that kind of indigenous knowledge is not included, and no reference is even made to it. But this was very important knowledge which deserves to be integrated in the school curriculum”.

Most respondents explained that developing comprehensive curriculums that incorporate indigenous knowledge requires a robust body of agricultural research combined with Zambian perspective. The process could engage Zambian agricultural experts and community knowledge libraries, to produce materials that reflect indigenous knowledge systems and interpretations, ensuring a balanced representation of Zambia's agriculture trends. In trying to emphasis the point, TL02 mentioned that:

They need to come up with strategies such as involving indigenous communities in curriculum design, conducting research to identify relevant content, and ensuring flexibility to adapt to different contexts.

The respondents shared several common agricultural practices and environmental knowledge that they valued. For instance, T01 said, *other forms of IK include... indigenous ways of agriculture e.g. use of natural manure, prediction of weather and food preservation should be included in the school curriculum because they form practical knowledge in the society today.* Clarifying on food preservation, most of the respondents agreed saying that traditionally, people would predict drought and prepare for it by slaughtering animals and traditionally drying the meat as a way of preserving for future use. Supporting the issue of traditional weather forecast, respondent RL 03 stated that *“environmental indigenous knowledge for example studying weather patterns by use of trees/sun/wind and even animals and bird's migration guided the cultivation calendar of the people.”* Respondent TL06 also noted that *“animals' behaviour was one of the indigenous ways of predicting weather; he explained sign of frogs croaking as an indication of rain was also believed in culturally and it is knowledge that can be used to date.”* Shielding from the enemy and adapting to the environment was also agreed by most respondents to be an environmental skill that was indigenous and valuable to be learnt today. Majority of the respondents mentioned traditional cultivation of indigenous crops using natural farm manure such as traditional vegetables stating that it produced healthier food than most of the modern methods taught in school. Respondents T07 and RL03 said *“IK related to security, food preservation such as building granary stores for the grain crops such as maize to avoid use of chemicals, indigenous vegetables such as pumpkin and beans leaves also existed, and it was a way of preventing diseases and use of chemicals”.* They agreed that the method of building traditional granary structures for storing grains was better than the current methods of applying chemicals that cause cancer and other health complications.

It was prevalent from most responses that in the absence of collaborative and inclusive approaches that value and respect indigenous perspectives and contributions, integration of agricultural indigenous knowledge systems would be futile. Respondent T04 cited indigenous ways of crop farming and livestock rearing saying *the use of animals to plough especially hilly...I mean, mountainous fields or places where tractors cannot move is still important even now*". Some respondents further identified traditional methods of farming such as using animals for transport, traditional grain storage and planting traditional drought resistant seeds as knowledge that can be integrated in the agriculture curriculum especially now when climate change is proving to be a pertinent and persistent norm. Respondent TL05 lamented on how local geographical knowledge and environmental nature was not recognized in the school curriculum saying:

"When we look at subjects like geography for example, most of the content in the school curriculum depicts all these beautiful places in other areas or countries. Nothing about our very own nthumba chushi falls for instance. There is great need to integrate content that will allow our learners to appreciate our very own beauty of nature through inclusion of places that learners can easily relate to. The same applies with historical sites and national heritage."

Furthermore, respondents also noted that Environmental Science or integrated science should be considered as an important foundational area for reconstruction of the curriculum within the local context. Respondents made mention that incorporating indigenous knowledge into environmental science or integrated science subjects can provide learners with a different perspective on subject matters such as traditional practices like land preservation and sustainable farming. As noted by respondent T07,

Local farmers use indigenous techniques to adapt to changing environments, offering affordable solutions to agricultural challenges.

4.4 Health and Herbal Medicine

Another vital area that came out dominant from the respondents as valued for integration in the school curriculum was health and herbal medicine. Respondents explained that indigenous medicine and holistic wellness practices, if properly integrated into the school curriculum subjects, could improve learner's understanding of diverse healing methods, foster cultural competence among learners interested in studying medicine and health care, and promote more inclusive and patient-centred approaches to the field of medicine which learners can also benefit by putting the knowledge into immediate use.

Teaching about herbal medicine and indigenous health practices can connect learners with their heritage and foster holistic wellness (TL02).

The education stakeholders expressed great trust and faith in herbal medicine, and they unanimously agreed with respondent T04 who said, *"but we also used to live and survive on herbs!"*. Respondent TL03 stressed the point when he said that *"you see there is nothing wrong consulting the herbalist because thus where one can actually get the most effective and natural medicines with no side effects at all."* Most respondents argued that the use of herbs by herbalists to treat a range of diseases is of fundamental use today and it is knowledge that should be preserved through the school curriculum. Citing evidence, they listed several ways in which plants were used to treat ailments and enhance healthy living. Respondent T07 said for example the use of aloe vera. *"The aloe vera treats almost every ailment and it's very good for the skin."* Most respondents were of the view that plants were used as medicine or cosmetics or sunscreen and as food making people enjoy their most natural and healthy lifestyles. They explained that the herbalists had the knowledge

of which herbs will heal what and such knowledge should not be left into extinction, respondent TL05 explained that *“not every piece of plant was used however, African herbalists knew which plants could serve as food and which plants could serve as herbs for the sake of their health.”* Respondents also pointed on traditional healing as one of the indigenous practices that should not be discarded. Emphasising the point, respondent T06 said

Herbalists can separate medicines and call them by name and what they are able to do, for instance, when you use it, if you want to clean your stomach by vomiting use it this way, if you want a running tummy do it this way and that is part of our rich culture

4.5 History and Governance

History and Governance is yet another area that most respondents noted to be valued for inclusion in the school curriculum. They made mention that if indigenous perspectives are incorporated into history and governance subjects, learners can acquire valuable insights into traditional systems of leadership, social organization, and conflict resolution. One respondent said:

By including indigenous governance systems in subjects like history, we can show how our forefathers traditionally laid the foundation for modern leadership (TL04).

Generally, most of the respondents expressed recognition for African religion, norms, taboos and beliefs, and affirmed that Africans were spiritual and related to things that are not visible. Respondent TL01 said, *As African people we are more spiritual, we relate to several things that are invisible and so forth. So, I think what came to me was this whole notion of superstition.* Most of the respondents said that a great deal of this knowledge can be seen in how Africans perform rituals, organise family, conduct succession, structures that regulated behaviour and specific ways to approach discipline issues. Almost all respondents revealed that these structures would be significant if they were integrated in the school curriculum. One respondent for instance emphasized this by saying, *“I think it is essential that the constructive cultural structures/practices that regulated the life of indigenous people be included in the school curriculum for the benefit of our learners and generations to come”* (T03). However, respondents were quick to mention that there are other indigenous cultural practices that are negative and against human rights like girls’ circumcision and suggested that only the positive aspects of their culture should be integrated in the school curriculum. Most of the respondents noted that there is much to be learnt from indigenous cultural structures as such knowledge can contribute to rebuilding communities.

Adding to this, T09 stressed that *“knowing the cultural background of learners help to promote peaceful co-existence, social sharing and social coherence begins right in the villages and so on.”* Amongst the cultural practices that most respondents cherished and considered of great value especially for integration in the school curriculum at appropriate age levels included initiation ceremonies (both male and female rite of passage) that involved seclusion of both girls and boys as they were taught humanity and responsibility. This was considered by most respondents as ways to mentoring and instilling good values in the upcoming adults and mentoring was portrayed in most of the study participants’ responses as a way of instilling values, positive taboos and communal living that discouraged individualism. Furthermore, respondents agreed that taboos that restricted peoples’ social behaviour were still important in society today for social harmony and peaceful collaboration. Respondent RL07 warned that *neglecting the taboos in our society today has caused society a lot of misfits such as disrespect, loss of good morals, rape, incest and even family disintegration.*

5.0 DISCUSSION OF THE STUDY FINDINGS

Africanization has been one of the most discussed ideologies in Africa since the wind of change of the late 1950s. In the field of education, it emanates from the premise that education is man's acquired experiences as he or she interacts primarily with his/her environment. This interaction is an eternal process of adjustment, refinement, and improvement of that society. It is therefore a process of transmission of what is worthwhile to those who become committed to it (Schofield, 1978). Research on IK and its benefits and prospects for the curriculum have become more pronounced and have been undertaken globally in Africa since the United Nations Educational Scientific and Cultural Organisation (UNESCO) and world intellectual property organisation pioneered the role of IKS in 1978 (Zazu, 2008; Sebola, 2015). In an attempt of trying to source for information on the worthwhile IK for possible integration in the school curriculum, the study sought from key education stakeholders their views of the valued forms of IK for possible integration in the school curriculum to enable smooth transmission of worthwhile knowledge from one generation to the next. The Indigenous knowledge items that the key education stakeholders who participated in the study valued most for possible integration in the school curriculum highly fell into the categories of local or indigenous languages; history and culture; agricultural and environmental issues; herbal medicine and healing; and scientific and technological skills.

Indigenous languages

Just as Heugh (2005); Grin, (2005), opined that learning indigenous languages is relevant and sustainable by itself and that it is inappropriate to pay lip service for the sake of economy of scale, the study participants identified local languages as important forms of IK in their communities, this contention was held much more strongly amongst traditional leaders. However, local languages were recognised as a medium of transmission of IK items from one generation to the other. Although most respondents called for the teaching of local languages in school as part of the curriculum subjects, integrating local language in other subjects like history and also using local language as a language of instruction in lower grades of schooling was emphasized more by traditional leaders who claimed that both the knowledge content contained in the Eurocentric school curriculum and that the languages spoken and used as medium of instruction in school curriculum are not learner friendly. They emphasised that there is a lot that learners may be missing out in terms of worthwhile knowledge acquisition as not everything from IK can be accurately expressed using the colonial language. Such user-unfriendly contexts hinder the learners from understanding and participating in creation of knowledge and need to be interrogated (Brock-Utne, 2006; Sesanti, 2016). The study respondents called for a liberating educational curriculum that recognises and incorporates indigenous African knowledge systems and epistemologies that can be tapped and integrated in the school curriculum to contextualise learning.

The study findings suggest that most respondents especially teachers and traditional leaders were not gratified with the current curriculum content with respect to integration of indigenous language and knowledge and they thought that it does not serve the needs of learners effectively. This call is in line with the theory of the tree guiding the study as well as the ideas of King and Schielmann (2004) who noted that combining the best of one's own traditions with the best of Western knowledge provides for quality in its true sense. Most participants highlighted that IK items such as language folktales is embedded in indigenous literature and folklore and are rich heritage uphold by the communities that needs to be considered as a basis for learning another knowledge.

History and Governance

Arts, customs, social institutions of a group of people and technology are inherently cultural (Van Wyk, 2002), and culture, in the study participants' views, reflect a way of life. The participants expressed their belief in the value of history and culture stating that it upholds their identity and

heritage. Most of the study respondents expressed interest in traditional dances-historical cultural sites, cultural beliefs and taboos. Almost all respondents agreed that these forms of IK items enhance cultural conservation and integration and gives community an identity and heritage if well integrated in the school curriculum. This notion resonates with the ideas of Thaman (2009); Pene, Taufe'ulungaki and Benson (2002), who noted that in order for schools and curricula to positively respond to the needs of making teaching and learning more culturally inclusive; there is need for a paradigm shift from the current predominantly Euro-centric curricula and school systems used in most African countries. The integration of IK in the learning plays a pivotal role in helping learners develop a clear understanding of educational concepts. Kano (2013) recommended the inclusion of IK in the curriculum development process to help learners understand concepts and retain knowledge for a long time.

The teaching of various subjects in the school curriculum without infusing IK can limit learning and understanding. This claim is confirmed by Bettencourt (1993), who argued that assuming that learners are blank slates is inviting pedagogical trouble, since all learners are endowed with rich knowledge of how things work in their environments. Fraser (2006) added that learners do not arrive at school without any knowledge and should therefore not be treated by their teachers as having nothing to contribute to the learning situation. The IK of learners acquired through their unique experiences, cultural backgrounds, community activities and informal learning must be recognised (Fraser, 2006). This implies that teachers should abandon the notion that learners come to school as empty vessels needing to be filled with new knowledge skills. Bettencourt (1993) emphasised the value of learners' ideas, conceptions and views as the basis for learning and knowing. Knowledge and skills acquired through incidental learning in their environments may be used for new learning at school.

Furthermore, most of the participants strongly promoted indigenous cultural structures and practices, beliefs, religion, norms and taboos. There was consensus that African people are spiritual, and this is displayed in the way they perform rituals, organize family, and conduct succession. Most participants seemed to value the cultural ways in which behaviour was traditionally regulated, discipline was approached and the way values of communal living and coherence were instilled. According to Gumbo (2001), quality learning must take place in the learner's cultural context. Quality education is thus education that does not exclude learner's background knowledge. The integration of IK in teaching various subjects can help to prepare learners for a better future by teaching them to design products that will satisfy human needs. According to United Nations (2005), education is a means to reduce poverty and so when subjects are taught from the perspective of the learners' authentic contexts, it can be better understood and ultimately help to reduce unemployment rates.

Many of the participants were also concerned that most of the African history in the curriculum is not written by Africans and not represented well thus not owned by Africans (Gumbo, 2016). The study participants felt that most of the content in secondary school history in Zambia contains only a little distorted Zambian history with very few Zambians as well as African heroes included. These participants called for facilitation of meaningful subject content through integration of more IK to make subject matter comprehensible for the learners (Abah, Mashebe & Denuga, 2015). The responses from key education stakeholders lead to the deduction that history and culture are embedded in the local languages and are valued assets of the community as well as for the study participants. This brings the theory of a tree by Cheong (2002) guiding the study into perspective as it stressed that the process of fostering local knowledge should have its roots in local values and traditions but also absorb external useful and relevant resources from global knowledge system to grow the whole local knowledge system inwards and outwards. This could be through folktale

which were packed with a wealth of knowledge on the various cultural expectations from elders to the younger generation or narrations of historical events of the community or ethnic groups.

Agricultural and environmental IK

Almost all the study participants presented various related agricultural skills and environmental issues that they valued for curriculum integration. However, indigenous ways of crop farming such as use of manure to improve soil fertility, growing traditional vegetables that participants claimed to be healthier, food and grain preservation appeared to be IK items common to both cases which are often referred to in the literature (Gumbo, 2016). Outlined by many participants was also the making of local maize meal by grinding maize locally, local brewing of beverages (Chibwanthu, Munkhoyo, Thobwa) and beer. These findings suggest that indigenous agricultural practices enabled indigenous people to live an economical life. These participants' preferences of IK items are also identified by Emeagwali (2003) who revealed that there exist indigenous technologies that involve fermentation of cereals such as sorghum and maize into alcoholic beverages and vegetable-based soup. Other agricultural and technological forms of IK valued by respondents included the use of oxen for ploughing in hilly or mountainous terrain, planting drought resistant seeds, traditional pests' control, traditional livestock breeding and rearing, as well as appreciation of local geographical features and historical sites in the environment (Atte, 1992).

Nwonwu's (2006) works show how IKSs have benefited agricultural practice in several countries. In South Africa's Kwa Zulu Natal's Valley of a Thousand Hills Project, multiple cropping was used to produce mangoes, rooibos tea and the cultivation of medicinal plants. In the same area, farmyard manure was used in maize production. In Niger, a project sponsored by the University of Minnesota / AFGRO project found that the neem seed solution could be used as a pesticide to fight locusts (Radcliffe, Ouedraogo, Patten, Ragsdale & Stzrok 1995). Pastoralists such as the Masai, Dinka and Fulani have developed their own ways of treating human and animal diseases and snake bites using herbs from the local environment (Nwonwu, 2006). In Tanzania, Nwonwu (2006) found that IKSs have been integrated with modern scientific knowledge for sustainable development. All these observations emphasize the need to integrate IKSs in agricultural activities so that solutions to problems are generated locally. People will not waste time by awaiting the arrival of the 'expert' who usually resides in an urban centre. It is therefore imperative for IKSs to be part of the curriculum in colleges of agriculture as well as universities. In this way, practical solutions to the problems faced by people are generated. Shortages of organic fertilizers and hybrid seed varieties will be a thing of past.

Indigenous people do not always depend on western knowledge but rely heavily on their IK to solve problems that arise. Contextual knowledge is constructed when people in a particular place interact with their environment (Naidoo, 2010). This knowledge can help learners to understand why different products are needed in different regions of the world. Learners who have acquired the necessary contextual knowledge will be able make products that are suitable for use in their regions. For example, Learners who know which type of soil is suitable for building a rondavel in a particular place will be able to select suitable soil for that purpose. It is therefore important to ensure that learners acquire IK that can be useful for solving some problems in local contexts. Ertmer and Newby (2013) concede that learning is more successful if the learning content is related to what the learners know. The use of identical elements can play a pivotal role in the acquisition of knowledge and skills. For instance, if learners are taught indigenous skills to make certain products at home, any of those skills that are identical to the new skills taught in schools will be easily transferred to new learning. Teachers can benefit from this by using even indigenous objects such as a clay pot as teaching resources.

Fraser (2006:) also added that lesson plans should always be derived from the learners' cultural context. Teachers can then, for example, use IK and skills such as the traditional moulding skill to motivate learners to actively participate in learning. In relation to the theory guiding this study, Turuk (2008:247), rightly observed when he stated that "the constructivist theory emphasises the need for learners to use their existing knowledge to understand new subject matter." Learners can thus use IK to connect to a new learning experience and create a new solution. Weegar and Pacis (2012) also explained that the overall philosophy of constructivism holds that learners impose meaning on the world in accordance with their own unique experiences. The teaching of various skills should therefore infuse IK to promote learning. Similarly, Bettencourt (1993) stated that, like all human beings, learners construct knowledge from personal life experiences in their homes and communities, and that those experiences and the knowledge gathered constitute the foundation for learning. All this justifies the use of constructivist theory as the lens that this study used.

The study participants on the other hand pointed more often to indigenous skills of studying weather patterns and predicting weather by use of animal and birds' migration patterns as well as plant behaviour. These participants outlined that shading off the leaves and flowering of plants were very important phenomena in the farmers' calendar in that it implied change of farming activities with respect to a new season. They also noted that animal behaviour such as the croaking of frogs was an important indication with reference to how far the rains were. Most participants also emphasized on the use of farm manure in cultivation of traditional vegetables stating that it is an important practice and the use of calabashes to store milk and convert it to sour milk was also mentioned and deemed worthy. These findings on valued agricultural practices were like Mandikonzas' (2006) findings on the study of indigenous practices in Zimbabwe.

Health and Herbal Medicine

All respondents expressed a great deal of trust in herbal medicine and traditional healing in treating common ailments. The participants agreed that we all used to live on herbs and that there is nothing wrong consulting the herbalists particularly where modern medicine has been challenged like the issue of cancer. In addition, participants pointed that plants were used both as herbs and as food. They pointed several ways plants were used to treat ailments and enhance healthy living. As an example, was Aloe Vera plants stating that they can be used to treat almost all ailments such as maintaining a healthy skin and as a cosmetic, effective medicine for healing wounds to mention but a few. This finding was congruent with Shavas' (2016) idea that, embedded within indigenous agricultural practices is local knowledge on the use of plants both as food and as medicine. However, majority of respondents also showed interest and expressed a great deal of believe in traditional healing stating that it should not be discarded both in the society and in education. Respondents also expressed confidence on herbal medicine that cure common diseases such as cancer and asthma which corresponds to the findings of Emeagwali, (2003) whose investigation established several diseases that can be treated using indigenous medical technologies such as retarded labour, malaria fever, skin ulcers, bronchitis amongst others.

While some participants argued for integration of herbal medicine and healing in school curriculum in order to offer an alternative skill for first Aid and treatment of common ailments as well as conservation of plants, some respondents called for integration of herbal medicine in education in order to prevent the loss of the skill as a result of less interaction between learners and old people who possess this herbal medicinal knowledge. This finding correlates with the idea of Bowers (2011) who posits that education should orient learners to recognize human and environmental assets such as traditional cultural practices and conservation of natural resources.

Indigenous technologies and Scientific skills

In the African context, a curriculum involving IK focuses on cultural survival, environmental responsibility and sustainable development (Dziva, Mpofu and Kasure, 2010). The authors also noted that despite being constructed in some way to the western hegemonic views of science, IK facilitate the study of this science. This is because of the IK promotion of “science for all” and education for all (Dziva et al 2010). As Hoppers observed that indigenous technology forms, a body of knowledge developed by a culture, that provides methods or means to control the environment, extract resources, produce goods and services and improve the quality of life (Odora-Hoppers, 1998), participants from the study pointed out various indigenous technological and scientific skills as well as experiences that are valued. Most respondents listed some of the valued scientific and technological skills as; visual design skills, traditional house construction, weaving by use of reeds to make hats and all types of mats, pottery work, bead work, fabric and art decorations all these linked to arts and culture. This finding concurs with Hoppers’ idea that indigenous technology is not just woven baskets and handicrafts for tourists, but it rather expands up to a range of technologies such as looms, textiles, jewellery and mineral manufacture; and technological knowledge in agriculture, fishing, forestry, resource exploitation, atmospheric management techniques, knowledge transmission systems, architecture, medicine and pharmacy (Odora-Hoppers, 1998).

Throughout the ages, communities have been engaged in activities designed to improve the well-being of their members and have initiated and taken responsibility for such activities. Human beings have always been involved in activities designed to meet their survival needs. Mkapa (2004:1) states that “for as long as people have walked on earth, they have sought more knowledge to find ways to feed their families, remain healthy, argue with their neighbours and improve their understanding of their environments, and have employed different means to solve their problems and meet their needs.” People may use their artistic skills to produce indigenous technologies to solve their problems and meet their needs at a given time. The cultural products made by indigenous people may help learners to acquire design skills of the type applied by engineers who design sophisticated products. According to a statement by the United Nations (2005), indigenous people are entitled to quality education that accommodates different worldviews. This means that learners must receive education that accommodates various languages and indigenous knowledge and be taught other cultural perspectives that promote human dignity. National curricula often exclude the cultures, histories and spiritual values of indigenous peoples and reinforce stereotypes (United Nations, 2005). Since useful IK exists in communities, teachers should incorporate such IK in their lessons to aid learning and the development of various skills. However, there is no formal system in place for the implementation of IK because it does not happen in a systematic, regular or predictable fashion. As such, Dziva et al (2010) argued that the challenges to implementation of IK include but not limited to the balance between superstitions and natural knowledge, communicating the new curriculum to parents, and making the lessons relatable and applicable to the learners’ everyday lives.

In addition, some respondents focused on the skills of making ropes using sisal, traditional costumes, weaving, cloth decorations and beadwork all in which they advocated for its integration in the technical school curriculum. Participants also highlighted iron extraction skills, extraction and conservation of other natural resources to be other expertise valued indigenous knowledge in cultural communities as is also evident in Emeagwali (2003). Participants also mentioned the indigenous skills of making war and defence weapons such as a bow and poisonous arrows to be IK that is relevant to security disciplines. All respondents therefore opined that it is imperative that learners be exposed to indigenous scientific and technological perspectives and knowledge content to address current problems, topics and issues that face society (Gumbo, 2016; Van Niekerk, 2004).

6.0 CONCLUSION

It was revealed from the study findings that while policy frameworks acknowledge the importance of IK, its presence in curriculum content is minimal, fragmented and largely symbolic. It was noted from the finding of the study that there is a discerning gap between policy intentions and practical implementation in schools. The integration of IK remains limited due to factors such as inadequate teacher preparation, lack of instructional materials and minimal community involvement. It was further noted that assessment practices and curricular structures often fail to accommodate alternative epistemologies that are rooted in local cultural contexts. Interestingly, it was noted through the study findings that teachers, curriculum developers and community stakeholders expressed growing awareness of the value of IK in enhancing cultural relevance, learner engagement and community participation. The findings confirmed that IK is actively employed in Zambian indigenous communities, even though it is treated by some as inferior to western knowledge. IK is practical knowledge that is effectively used to solve problems in indigenous communities, as sufficiently attested to by the findings of this study.

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