

AN EXPLORATION OF THE INCORPORATION OF AFRICAN INDIGENOUS KNOWLEDGE SYSTEMS IN THE SCHOOL CURRICULUM: EXPERIENCES FROM TWO SCHOOLS IN THE GAUTENG AND KWAZULU-NATAL PROVINCES, SOUTH AFRICA

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ABSTRACT

Indigenous people have a vast array of knowledge by which they have lived and sustained their livelihoods for ages. The impacts of colonisation and globalisation have meant that, over time, this knowledge has been lost and not imparted to younger generations. The current educational system in South Africa is still Westernised. There have been efforts to align the curriculum with constitutional principles and values through the *National Curriculum Statement (NCS) Grades R–12* and the *Curriculum and Assessment Policy Statement (CAPS)*. The article reports on a study that aimed to find out how African Indigenous Knowledge Systems (AIKS) can be incorporated into the basic education curriculum in South African schools, by studying the educators' experiences. The qualitative study was conducted using the case study design, informed by the systems and symbolic interactionist theories. The findings revealed that although there is a requirement to include IKS in the curriculum, there is no clear indication of how this should be done. The development of AIKS content for teaching, the introduction of AIKS campaigns in schools and communities, the inclusion of different role players in the AIKS development process, and the development of monitoring and evaluation systems to track AIKS development progress are the recommendations that came out of the study.

Keywords: Indigenous Knowledge, Indigenous Knowledge Systems, African Indigenous Knowledge Systems, curriculum

INTRODUCTION: BACKGROUND AND RATIONALE

Africa is rich in knowledge, but there is a danger that this knowledge is being lost through exploitation and a lack of acknowledgement of the knowledge holders. For instance, there are case studies that show the global commercial exploitation of Indigenous medicinal knowledge. Research in Cameroon has shown that the bark of *Prunus Africana* has been discovered to possess important properties that are anti-cancerous in addition to other benefits. This has resulted in the illegal debarking of the tree, causing many trees to die and posing a threat to the species

becoming extinct (Bodeker, 2000: 1). The single holder of a commercial exploitation license for the collection and exporting of the bark to the European market is a French company. The profits from this are not redirected to Cameroon, the citizens of which are remunerated for the collection of the bark only (Bodeker, 2000). The continent faces many challenges for which solutions could be found in the African stores of IKS. In a study with the Ikale-Yoruba people, Ogen (2006) maintains that the use of the Ikale's IKS aided the farmers in becoming specialists in that region when it comes to food crop production in South-Western Yoruba land.

To deal with developmental challenges and achieve sustainable development, education models need to be devised to specifically suit the environment and conditions on the continent. According to Gboku and Lekoko (2007), a formal education system in Africa can play a vital role, adding to personal development as well as the development of communities. In line with this, Act No. 6 of 2019: Protection, Promotion, Development and Management of Indigenous Knowledge Act (South Africa, 2019), speaks to the importance being placed on IK, especially in terms of its protection and use in South Africa. Key aspects of the Act (South Africa, 2019: 2) speak explicitly on *'recognising that indigenous knowledge is a national asset and that it is therefore in the national interest to protect and promote indigenous knowledge through law, policy and both public and private sector programmes; ...'*.

Decolonising the school curriculum is seen as important in addressing and demystifying the philosophies around class, gender, ethnicity, ethnocide, inequality and race that inform colonialism to learners in schools in an age-appropriate manner. The Westernised approach of understanding and applying economics, education, law and science must be contextualised to address the persistence of past inequalities and to provide space for interpreting and implementing those areas from an African perspective (Lebeloane, 2017: 7).

In South Africa, the role of IKS has been recognised in policy documents such as the Curriculum and Assessment Policy Statement (CAPS) for Natural Science and Life Science (Department of Basic Education [DBE], 2011). The National Curriculum Statement (NCS) Grades R – 12 specifies what is viewed to be knowledge, skills and values worth learning. It ensures that learners obtain and use knowledge and skills in ways that add meaning to their lives.

The primary objective of the study was to explore whether and how AIKS are currently being incorporated into the Basic Education system by sharing experiences from two schools as case studies. To explore this matter, the study looked at the following main research question: *What have been the educators' experiences in incorporating AIKS into the Basic Education curriculum for two South African schools?*

Aligned to the main research question were the following sub-questions:

- What types of AIKS form part of teaching in the selected schools?

- What are the prospective benefits of incorporating AIKS into the formal school curriculum?
- What are the challenges faced in the incorporation of AIKS in the Basic Education curriculum of the two selected cases?
- How can AIKS be made part of the Basic Education curriculum in South Africa?

THE SOUTH AFRICAN CURRICULUM

The South African school curriculum has gone through some changes, especially after 1994, to ensure that it aligns with the democratic principles that are pronounced in the country's constitution. Education under the apartheid regime had schools with curricula that were divided according to race, and this further reinforced the inequalities of divisions in society (Msila, 2007: 146).

Transformation in education is believed to be attainable by means of the structure of the school curriculum and the successful execution of that curriculum. A change in the educational system in South Africa in the early 1990s was intended to remodel the old apartheid system. This brought about the Revised National Curriculum Statement (RNCS) presented in post-apartheid South Africa. The RNCS is mainly interested in the introduction of education that is democratic in the country's schools. The goals of the reformed educational system are to produce a new identity for the country that incorporates critical consciousness, it is to alter the country's society by encouraging democracy and to expand learner participation in education (Msila, 2007). This system is based on the Constitution of South Africa, Law 108 of 1996 (South Africa, 1996). CAPS was presented in the year 2012, following the RNCS. NCS and CAPS have similar motivations in terms of adapting the curriculum to the goals of the country's constitution; they speak to the same values of social justice, human rights, being conscious of the environment, and respecting people who are of diverse cultural, religious and ethnic backgrounds (Gumede and Biyase, 2016).

BENEFITS OF INCORPORATING AIKS INTO THE CURRICULUM

Incorporating AIKS into the school curriculum has the potential to redress social injustices, especially in nations that have been previously colonised. For Msila (2009), the expression of IKS in a formal educational context provides an opportunity for an inclusive educational approach.

AIKS in the curriculum has the potential to decolonise African Educational Systems and lead to the preservation of knowledge. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2003) states that languages of the local people can be used for preserving, conveying and applying traditional knowledge in schools. Busia (1964) holds that through the study of AIKS, learners can have an appreciation of the home languages, their identity and understand their ancestors' insight, involvement in knowledge and technological advancement.

CHALLENGES FOR AIKS

The impact of colonialism and post-colonialism after-effects

Colonialism has had long-lasting negative effects on the African continent. During the colonial era, colonial forces used policies and procedures to take complete authority over African peoples' land and resources. These policies were successful in bringing about the total submission of the communities and creating stigma directed at their knowledge systems (Progler, 1999; Eyong, 2007).

The challenges of incorporating AIKS into educational curricula can be conceptual and methodological, as seen below.

AIKS: Ethnicisation

According to Lentz (1995), the concept of "individual" identity was introduced under European colonial rule in Africa. With the separation of groups into specific areas, it is hard to distinguish who owns knowledge because the same knowledge may be claimed by different ethnicities or even countries. For instance, Mosimege and Holtman (2012) share an example of the Hoodia cactus that has been of significant interest in debates relating to IKS in South Africa, including countries such as Botswana and Namibia.

Challenge of epistemology, conceptualisation and methodological issues

According to Horsthemke (2004: 31), since the IK mainly rests on the spiritual and mental perceptions with no empirical proof, it is asserted by critics of AIKS that it is "a knowledge that involves incomplete or at worst a questionable understanding or conception of knowledge".

Restoring and protecting AIKS

There are examples that show the most interest generated in IK comes from large Multinational Pharmaceutical Corporations (MNPCs). Mukuka (2010), in his study titled 'Indigenous Knowledge Systems and Intellectual Property Laws in South Africa', provides an example of the African Potato, noting that the founder of the pharmaceutical company, Liebenberg, currently holds a patent on a product retailed as "Moducare Sterinols." This product contains sterols and sterolins from the African Potato. This includes treatment that Liebenberg received from a neighbour whose knowledge was informed by the Indigenous community.

The above-mentioned challenges make it hard for policymakers to come up with recommendations on the inclusion of AIKS in the curriculum.

FRAMEWORK

This study was underpinned by the systems theory. According to Von Bertalanffy and Sutherland (1974), a system is a set of subsystems or parts that are interconnected and interdependent to perform. If one subsystem in the system functions more efficiently than the other, or if it ceases to function, this will affect the entire system. For the system to work more efficiently, all subsystems in the system need to work in a coordinated way. The knowledge of elements, interconnectedness and resolves of people, organisations and communities assisted in providing a general understanding of the relationships and functioning

of the society. Systems theories made it useful to understand the complexities of IKS and ways in which it can be related and incorporated into the education system through the curriculum.

Studies on IKS can also be underpinned by symbolic interactionism since these systems vary and humans place symbolic value on their interaction, such as that with the land, plants, and each other. Symbolic interactionism is a micro-level theoretical framework and viewpoint in sociology that studies how society is constructed and sustained through iterative interactions between individuals. The Framework was created to better understand how society works from the ground up, focusing on micro-level processes that emerge during direct human interactions to explain how society works. Individuals employ language and meaningful symbols in their communication with others, which is central to symbolic interactionist theory (Carter and Fuller, 2015). In the study, the repeated interaction between learners and teachers in the classroom was the focus, considering the meaning they place on the interaction with each other and on the meaning placed on IKS, such as languages and indigenous games, etc.

RESEARCH METHODOLOGY

The qualitative research method was used to explore the research questions raised in the study. Qualitative research examines experiences whereby “the researcher seeks to become immersed with the object of study” (Auriacombe, 2015: 36).

This study utilised both primary and secondary data sources. Primary sources include the data generated from participants in the interview process and focus group discussions. The interviews were conducted with an official from DBE. The interview was transcribed afterwards, and the transcripts were used. Secondary data is information collected from a source that has previously been published in some manner. In terms of secondary data, this study used documentary research, which uses a literature review to evaluate academic and research-based work, as well as documentary analysis to acquire data from existing records. Relevant published scholarly texts on IKS were chosen as secondary sources; Scientific journal articles, reference works and newspaper and magazine reporting; Internet-based resources, as well as Legislative frameworks in South Africa that are relevant; published and unpublished documentation, research reports and documents of case studies that have incorporated IKS in the school curriculum.

The study used the multiple case study research design and purposively sampled two schools as cases. The reason for choosing two case studies was to provide an understanding of different contexts. The focus group discussion and semi-structured interview data collection techniques were used. A semi-structured interview for this study was conducted with a representative from the DBE.

The schools were selected from two provinces, Gauteng and KwaZulu-Natal. The aim was to have representation from two different provinces while including both rural and urban schools. One of the schools is from a rural area, the reason being

to provide the research with a greater scope of different experiences from areas with different socio-economic situations.

There were two focus group discussions conducted in the study. One was in Gauteng from a primary school referred to as School A and consisted of five participants. This discussion was held on the 04th of August 2021. For the second focus group discussion, data was collected from the rural area of Bergville in KwaZulu-Natal, from a primary school referred to as School B. Four educators from each school, described in Tables 1 and 2, agreed to take part in the study. The focus group discussion was held on the 13th of August 2021.

Table 1: School A's participants

Participant	Grade	Subject	Teaching experience (yrs)
Educator 1	6	English	4
Educator 2	2	Life Skills, Mathematics, IsiZulu and English	17
Educator 3	4	IsiZulu	4
Educator 4	5	IsiZulu	5
Educator 5	2	Life Skills	3

Table B: School B's participants

Participant	Grade	Subject	Teaching experience (yrs)
Educator 6	4,5,6	English and Life Skills	8
Educator 7	4,5,6,7	Mathematics	27
Educator 8	1	IsiZulu, English and Mathematics	28
Educator 9	3	IsiZulu, English, Mathematics and Life Skills	32

The teachers selected had different experiences from each other, depending on what grades they teach, what subject they teach and how much knowledge of the IKS subject matter they are exposed to. This was to ensure that we receive different views of the community instead of just a one-sided angle of people's opinions and preferences. The convenient sampling method was also utilised. In this case, this method was useful because, in choosing the teachers and also the DBE representative, the study had to consider issues of availability and also willingness to participate in the study.

The facilitated group discussion method was chosen because it increased the chances of getting several varied opinions and did not make the study biased. The method also helps generate further questions to be addressed through the discussion as people come up with follow-up questions. The educators were

purposively sampled to partake in the study depending on their knowledge of the subject matter, and also chosen because of their different experiences. Participation was voluntary and based on informed consent. No coercion was applied in getting participants for the focus group.

An interview for this study was conducted with a programme director from DBE who has been tasked with curriculum development or works within the division that deals with IKS. To select the appropriate participant, assistance was requested from a third party within the DBE who may authorise participation to nominate potential participants. From this list, the most relevant participant was purposively sampled. The interview was semi-structured to also leave room for more perspectives and additional suggestions that the interviewee may need to add. Participation was also voluntary and based on informed consent, with no coercion being applied.

Data analysis and presentation

This study used a combination of the content, narrative and discourse analysis methods to interpret the data in order to answer the research questions. Content analysis was used when reviewing the text from the Curriculum and Assessment Policy Statements (CAPS) and other curriculum statements, and the narrative analysis was used in analysing the data collected from the interviews and focus groups. The narrative analysis method was also employed during the focus group discussions, where the educators were also observed in their social contexts. The analysis methods were overall descriptive and interpretive. Descriptive analysis involved organising the data into the following categories: teaching experience, grade and subject taught, while interpretive analysis involved content analysis, which provided information on exploring the viability of incorporation of AIKS into basic education. The data collected was interpreted, and the information was then organised into themes.

Thematic analysis was utilised in data interpretation and presentation. The interviews in this study were recorded by an audio device after informed consent was obtained, then transcribed. After all the interviews had been transcribed, they were sent back to the participants to verify that their responses had been captured correctly and for interpretation. The responses from the focus groups were then organised into themes.

Trustworthiness

The trustworthiness of the study was guaranteed by ensuring its credibility. To achieve this, openness in how participants have been selected was ensured to provide transparency. The data collection methods and recording of interviews and focus group discussions increased the credibility of findings and limited bias from those conducting the study. Recordings took place after explicit consent by participants was obtained. The study made sure that the participants were clear on the nature of the research, i.e. its purpose, their role, etc. Trust needed to be built during the study. Conducting the study in the environment of the participants created an ease for the participants. The researchers also shared their personal, academic and professional background with the participants. Participants were

provided with communication channels to reach the researchers when there was any doubt about the conduct of the research or its purpose. Purposive sampling increased the chances of transferability of the research. Various literature sources were used for the research, which aided in triangulation. Even during data interpretation of the responses, further secondary sources were used for support during focus group discussions and the interview, in order to support the findings and validate information provided.

Ethical measures

Firstly, to ensure that the study was conducted ethically, the researchers ensured that the ethics of informed consent, confidentiality, integrity and honesty were conformed to. The ethical principles were observed, ensuring that informed consent forms were detailed in explaining to the participants their rights of anonymity, confidentiality, voluntary participation and any expected benefits or harm. Permission letters were obtained from the Gauteng Department of Education and the KwaZulu-Natal Department of Education to conduct research at one of their schools as per their prescribed requirements. A permission letter was also obtained from the DBE to conduct an interview with one of the directors in the appropriate department. Permission was obtained from the schools chosen through the principals and participants to conduct research within the chosen area. The use of consent forms guaranteed the anonymity and confidentiality of participants.

Additionally, it was ensured that all relevant IKS documents in South Africa such as the IKS Policy of 2004, Protection, Promotion, Development and Management of Indigenous Knowledge Act 6 of 2019 and Indigenous Knowledge Systems Research Ethics Policy (DST, 2015) were reviewed to ensure that research is undertaken in accordance and in line with the guidance of legislation. Additionally, protection from harm to participants was ensured by abiding by the COVID-19 regulations of South Africa, maintaining social distance, sanitising and wearing masks. Language is an important factor when conducting IKS research; in this regard, the participants were given the option to respond in their preferred language of communication.

KEY FINDINGS FROM THE CASE STUDIES AND SEMI-STRUCTURED INTERVIEW

Key themes that emerged from the study included indigenous games, traditional medicines, indigenous folklore storytelling: Idioms, proverbs, poems and myths, and the spiritual element of AIKS: Rituals and ceremonies. Other themes emerging from the study were sustainable livelihoods, restoration of pride and Ubuntu, AIKS and the rural context.

Different types of AIKS that form part of teaching in the selected schools

From conducting the study with the educators from the different schools, it became apparent that, currently, the IKS that educators are trying to include in their classrooms is mainly that which they know from their childhood experiences at home and in the community. The dominant AIKS that seems to be a point of reference for educators was the indigenous games and folklore.

Educator 2 from School A linked her understanding of IKS to her particular experience. As a Life Skills teacher who sometimes has physical education lessons, she spoke mostly about indigenous games, and this was also evident in her response about her understanding of IKS. She indicated that to her, IKS included activities that originated from a particular cultural group, community or people; she also believed that there was value in adding IKS into the curriculum. From the use of the word 'activities', one can already tell that she based her understanding on what she has experienced through her subject.

Researcher: *So, you, in terms of Indigenous Knowledge systems ne, when understanding that concept, what do you know about it?*

Educator 2: *Like mina (me) ne, ngiyithathe (I took it) as ama indigenous games and said they are activities that originated from a particular cultural group, community or people. I explain the rules of the game. For example, izingedo. The game improves eye-hand coordination, so the learner has to focus not to drop the stone. In the Life Skills, under physical education, I divide my learners into groups, may be a group of ten learners, each group to select a champion and compete.*

This is the same educator from School A, giving an example of one of the indigenous games she uses in her lessons.

In addition to indigenous games, folklore seemed to be the most spoken about form of IK that the educators mentioned, especially those who teach languages. In one instance, Educator 6, who is a Life Skills teacher, said she uses storytelling as a form of encouraging creativity and teaching certain life lessons to the learners. Similarly, Educator 4 mentioned his use of storytelling in his IsiZulu lessons to teach lessons such as respect and discipline.

Educator 4: *...bengibatshela abantwana, ngibatshela ukuthi uyabona inganelwane lezi, zinesifundo phakhathi, hayi ukuthi inganelwani, yes zazijabulisa, zifundisa, zikhuza and zibaqhaphelisa ezintweni ezithile. Right, kukhona le engithathat ngaso isibonelo, ebengibayenzisa, eye mfene, impisi ne ngwe. Okushuthi ingwe beyihllupha lezilwane, bezihlala zibaleka, zibalekela yona lengwe, ekugcineni zase ziza nesu,ukuze nathi sizophila ngokuthula, senzani uku dealer nale ngwe.ya suggester impisi yathi no asiyoreporter enkosini yezilwane. Imfene yathi hmmm no kuzothatha ekudeni kakhulu, asimususe, weza noshevu, asisebenzise lokhu. So, ngase ngithi kubo, ngithi alright, ngifuna abthi bahambisana no mpisi ukuthi mabayo reporter enkosini, nabahambisana no mfene abathi masimufakele ushevu afe. Babebancane laba abathi ingwe makafe. Mina ngathi ngihamba nabathi makuyo reportwa enkosini, because I lesson esiyitholayo la, umuntu mayengakwenzi okuhle, into oyenzayo, u reporter kuthisha, awuzithatheli umthetho kuwe ezandleni.*

(...I was telling the learners that folklore has lessons in it, it's not just a story, yes, they entertained, taught, reprimanded and warned against certain things. Right, there is one I will make an example that I was telling them, of a monkey, a wolf

and a tiger. The tiger was troubling the other animals, so the animals had to always run from the tiger. So, in the end, they came up with a plan and said, "For us to live in peace, what do we do to deal with this tiger?" The wolf suggested that, "No, let's go report to the king of animals." The monkey said, "No, that will take us long, let's just get rid of him (the tiger)", and brought poison and said, "Let's use this." So what I said to them is, "Alright, now I want those who go with the wolf to report to the king and those who go with the monkey that say let's poison him so he dies." A few went with killing the tiger. I then told them that I go with those who are going to report to the king, because the lesson we get here is that if a person doesn't do right by you, what you do is report to the teacher, you report, you don't take the law into your own hands.

Prospective benefits that may result from the incorporation of AIKS into the formal school curriculum

The DBE representative indicated that IKS is one way of ensuring inclusive teaching and learning; inclusive education in the sense that there is diversity in the knowledge that learners are taught, and the recognition of other knowledge besides just Western knowledge in the classroom.

Educators shared that incorporating the knowledge in school would preserve this knowledge. Also, AIKS has the potential to instil a sense of self-consciousness and cultural identity amongst learners, teaching them to have pride in who they are. There are values embedded in the knowledge that, in turn, can help with re-instilling the principles of Ubuntu.

An example that was given in terms of sustainability has to do with agricultural education. Educator 7 mentioned that growing up, at school, each learner had a portion of land that they were allocated and had to learn how to maintain and preserve in order to grow some food. Besides getting food, this taught them responsibility and patience. In this paragraph, we refer to examples from different spheres. First, it is the time, then agriculture.

Educator 7: *...lokho kwakwenza ukuthi uwazi nawe ukuthi umhlaba yazi, siyadla la emhlabathini. Abantu abaningi bazi ukuthi fanele uyocela, kanti kukhona ongakuthatha emhlabathini. (...that made sure that you also know that land, you know, we eat here from the ground. A lot of people know that they have to go ask, whereas they can get something from the land).*

The study also found that including AIKS in the classroom would benefit the learners by promoting creative ways of thinking and teamwork. This would help learners, even communities, to navigate their own social challenges, such as food insecurity, lack of access to health care facilities, etc.

Challenges faced in the incorporation of the AIKS in the Basic Education curriculum of the two selected cases

AIKS content material

The educators from the study noted that they had no content material available to them about AIKS that they could teach in their subjects. There were no textbooks, manuals, etc.

Time

Time constraints are one of the challenges that educators face when trying to incorporate AIKS into their lessons. With some educators teaching more than one grade and subject, adding to the already given work requirements is a challenge.

Researcher: Besides the challenges of kids being too young or not being able to add material for certain subjects, what other challenges for incorporating IKS in the classrooms, what could they be, that you can think of or foresee it could be a challenge

Educator 6: Mina (me) the first challenge engiyibonayo (that I see) is time, there is a lot that we have to do and isikhathi (time) sometimes doesn't allow us to have any other thing because even in the curriculum we have isikhathi esinikeziwe ukuthi (time that we are allocated that) by this time we need to have done this, yiwo amachallenges ohlangana nawo (those are the challenges that you encounter), you end up not even being able to finish that, so it's time.

Curriculum design

Although educators are afforded the autonomy to add on to their lessons, they share that this is not easy; they feel that the way the curriculum is designed is not as flexible as it should be, especially for adding AIKS examples into lessons. Lesson plans are already outlined, and specific areas must be covered as a requirement before other areas can be added.

COVID-19 impact

Since this study was conducted in the middle of the COVID-19 pandemic, the teachers indicated that this had affected the amount of time for classroom interaction, which was very limited and, in the process, made the integration of IKS activities worse.

Support from DBE

The educators indicated that there has not been training provided by DBE on how to incorporate the subject into their curriculum. There are no clear guidelines from the policy on implementation.

How AIKS can be made part of the basic education curriculum in South Africa

Through the review of the literature and the interviews, there were certain findings on how practically IKS can be incorporated into the curriculum, especially in South Africa. For example, Naidoo (2010) mentions various models for IKS in science teaching that exist in the literature. These include the Five-Step Model proposed

by Snively (1995), a Learner-Centred Model explained by Malcolm (2002) and a Research and Development Model that has been proposed by Aikenhead (2002b).

The Learner-Centred Model argues that learner-centred science is evidently diverse and rejects the idea of one science. According to Malcolm, this model can result in more culturally relevant lessons by focusing on the IKS that the learner brings to the learning environment. Muza (2014) writes about a model of integrating IK and Western science proposed by Ng'etich (1996), in which three categories of integration are identified, namely integration of one thing into another, integration of one thing with another and integration of one thing and another.

From the interview and focus group discussions, it is also clear that there are informal ways that can be used in incorporating AIKS with the basic education curriculum. For instance, the DBE representative mentioned the school outreach programme that exists, indigenous games and the ABC Motsepe South African Schools Choral Eisteddfod (SASCE). There are other programmes such as the Indigenous Languages Spelling Bee. The department can also partner with NGO's as part of implementing partners in schools is another way that AIKS can be incorporated. This idea came about when an educator mentioned that at some point, Nalibali came to the school, which fully advocates for reading and writing in mother tongue languages (Kids Corner, n.d).

RECOMMENDATIONS

Based on the findings, the study makes the following recommendations:

AIKS content development for primary school subjects

DBE needs to commit resources to the development of such content, which will also require not just collecting the AIKS but also documenting them in books and manuals for easy reference. In this regard, DBE can start getting such content from the already existing IKS centres as a start and continue the project from there.

AIKS-specific training and workshops

Training should be provided for educators. The training should teach educators about the overall concept of IKS. Training and workshops should also focus on various AIKS that exist, to help educators understand which local IKS are available to them and where to access the knowledge.

AIKS community awareness campaigns and drives

Having awareness campaigns about AIKS would help communities understand further that what they deem as just a way of living is knowledge that must be cherished and preserved. This can encourage households and communities to even start documenting their practices. The campaigns can also be used to educate communities about their rights when it comes to their knowledge and how they can even use the knowledge for their own economic benefit.

Inclusion of different role players in the process

One of the observations from the study is the lack of correlation between the many role players that can ensure that efforts around IKS in the country are strengthened. In trying to incorporate the knowledge in the curriculum, DBE should include more role players in the process, such as knowledge holders in the community, parents, IKS bodies across the continent, NGO's, research institutes, higher learning institutions and legal institutions. It will help eliminate some issues that might arise during the process, such as legal issues, issues of intellectual property rights and ownership, protection against misappropriation of the knowledge and benefit sharing.

Monitoring and evaluation systems

It is advisable that the DBE include targets for IKS in their strategic documents and Annual Performance Plans. There should also be targets regarding the training of teachers on the subject matter. Having targets only will not be sufficient. DBE needs to also make sure that it develops systems that will track performance of implementation monthly, quarterly and annually.

Further research

This study focused on the experiences of educators when it came to AIKS. More research can be done on learners' perceptions and understanding of AIKS and its role in their lives.

LIMITATIONS OF THE STUDY

The study was able to arrive at some findings using the educators' experiences from two schools. Although these were useful findings, using only two schools was limiting in terms of opinions. Another challenge was that the sample was not representative enough of the different subjects that are taught at primary schools, mostly the subjects represented were the languages, Life Skills and Mathematics. This means that experiences of educators teaching subjects such as history, geography, natural sciences, etc., have not been included.

CONCLUSION

Through the literature review, focus group discussions and interviews, the key findings that the study arrived at include, firstly, that educators who are trying to include AIKS in their classrooms rely mainly on their own knowledge and not on textbooks. The main AIKS that was being referred to is indigenous games, folklore and traditional medicine. Secondly, there are benefits that may result from incorporating AIKS in schools. Incorporating the knowledge will ensure that learning is inclusive of different knowledge systems, which may result in the promotion of diversity, creative thinking in the classroom, and pride and Ubuntu principles. The knowledge can be used by learners to navigate their different socio-economic challenges. The third finding is related to the challenges that the educators experience in trying to incorporate AIKS in the curriculum. In summary, these include the time constraints, lack of IKS material, curriculum design, lack of support and guidance from DBE and the impact of the COVID-19 pandemic on learning. Fourthly, there are models such as The Five Step, Learner-Centred and Research and Development models in the literature that can be referred to in

incorporating AIKS in education. For the case studies, the findings indicated that other informal ways could be adopted, such as using programmes that the DBE has, for example, the Indigenous Spelling Bee. Likewise, NGOs can be used to roll out some AIKS projects in schools.

Several recommendations have been made, which have been informed by the general findings of the study. These include the development and recording of AIKS content for schools, AIKS-specific training for educators, and campaigns that will create awareness and buy-in for AIKS in schools. There should also be involvement of different role players, such as community knowledge holders, in this drive to incorporate AIKS in schools. Clear targets should be set out by DBE, and monitoring and evaluation systems should be developed. Finally, the study has indicated possible areas for further research in this field, for instance, looking at learners' perspectives on AIKS, the development of different models of implementation and how AIKS can be used to improve the livelihoods of learners and their communities.

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