



Mending the Epistemic Wall for Preservice Teachers in Higher Education: The Integration of African Indigenous Knowledge in Social Sciences

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Abstract

The study investigates ways in which Social Science preservice teachers can be prepared to integrate African indigenous knowledge into their Social Sciences teaching. It follows a conceptual methodology to advance the concepts and arguments around the integration of this knowledge. Accordingly, two significant arguments are advanced. Firstly, it submits that there is a structural, ideological and cultural epistemic wall that impedes Social Sciences preservice teachers from being prepared to integrate African indigenous knowledge into Social Sciences teaching. Secondly, it contends that the unpreparedness of these teachers and the lack of integration of social sciences in classrooms further delay the integration of African indigenous Knowledge System (AIKS). Teacher education, Social Sciences programmes and the Social Sciences school curriculum are the main contributors to the lack of integration of African indigenous knowledge in Social Sciences lessons. Following the methodological and regional limitations of the study, the study suggests preliminary insights that should be explored further through empirical research. The insights offered guide the Social Sciences teacher education and preservice teachers on how to integrate African indigenous knowledge into their practices.

Keywords: Social sciences, African indigenous knowledge, social sciences teacher education, South Africa, integration

Introduction

Scholarship on Indigenous Knowledge Systems (IKS) and African Indigenous Knowledge Systems (AIKS) is becoming increasingly prevalent in education and social science research. There is a shift from interrogating the nature of AIKS to investigating the integration of this knowledge in the curricula. This scholarship is not new; it dates back to the 20th century when the focus was on merely recognising this knowledge (Latulippe & Klenk, 2020). The current South African school curriculum policy, the Curriculum Assessment Policy Statement (CAPS), which guides teaching and learning in South Africa from Grades R-12, cites IKS as an important element in education. It aims to contextualise knowledge of existing school subjects by recognising African culture, identity and knowledge systems (Department of Education, 2011). Similarly, in higher education, the national policy on IKS underscores the importance of integrating IKS into universities (Department of Science & Technology, 2004). However, a thorough policy analysis reveals that there are challenges that delay the integration of IKS into teaching and learning practices.



Despite the use of AIKS and IKS interchangeably, the study delineates their relationship and contextualises AIKS within the broader framework of IKS. IKS refers to any traditional knowledge generated within a specific cultural context, shaped by its unique practices and societal structures. This implies that each cultural context, with its distinct history and heritage, possesses a unique IKS. In this understanding, even the Western knowledge often critiqued by African countries can be considered an IKS within its cultural context. However, AIKS specifically denotes those epistemologies derived from the African continent, particularly its diverse ways of knowing and doing. It encompasses a collection of long-standing African communal traditions and practices, defined as “the skills, inventions, beliefs, values, experiences and perspectives of people living in their respective environments and societies, collected over time and implemented to preserve or develop their livelihood” (Mashego, Maditsi & Bhuda, 2021, p.17250).

Therefore, the purpose of this study is to explore and advance two arguments. Firstly, it submits that there is a structural, ideological and cultural epistemic wall that impedes Social Sciences preservice teachers from being prepared to integrate African indigenous knowledge into Social Sciences teaching. Secondly, it contends that the unpreparedness of these teachers and the lack of integration of social sciences in classrooms further delay the integration of AIKS. Teacher education, Social Sciences programmes and the Social Sciences school curriculum are the main contributors to the lack of integration of African indigenous knowledge in Social Sciences lessons. The significance of the study lies in its contribution to the calls for decolonisation and the provision of culturally relevant education. It further informs policy development and the training of preservice teachers in the social sciences teacher education.

Backdrop and Contextualisation

Indigenous peoples have made significant strides in securing support for their struggles to preserve their epistemologies, ontologies, and physical and cultural survival. Formal recognition of indigenous rights at a global level only began in the late 1970s and early 1980s through discourses on international laws (Young, 2019). The legal subject status of Indigenous Peoples notably emerged with the Convention Concerning Indigenous and Tribal Peoples in Independent Countries (International Labour Organisation Convention No. 169), which was subsequently opened for ratification by various countries (Larsen & Gilbert, 2020). Since then, the rights of Indigenous communities have further evolved under the United Nations and World Bank human rights frameworks (Menkes & Suska, 2023). Among the rights guaranteed by international laws to indigenous peoples are those pertaining to traditional lands, cultural preservation, knowledge, and human security (Phillips, 2015). Convention No. 169 thus serves as a foundational framework that advances indigenous rights, operating as an instrument of social justice for these communities.

The ratification of Convention No.169 (C169) by African countries has progressed slowly, with the Central African Republic being the first African country to ratify the law in 2010 (Gilbert,

2022). The historical, political and social contexts of different African countries influence the slow pace of the ratification. While the C169 is flexible in defining indigeneity, most African countries appear to have a shared understanding of indigeneity to refer to the Bantu population. The C169 allows for groups of people to self-identify as indigenous, which is resisted by some African countries. These countries have avoided the ratification of a legally binding instrument that allows groups to self-identify (Gilbert, 2020). However, countries like South Africa, Burundi, and the Congo Republic have adopted other legal mechanisms to protect indigenous rights and have not notably ratified Convention No.169 (Thornberry, 2013). When considering Africa's colonial past, indigenous epistemologies and ontologies remain deeply linked to the legacy of colonisation and apartheid.

According to Frescura (2016), the significant period of indigenous people in Southern Africa was the 19th and early 20th centuries, when the arrival of missionaries disrupted the living patterns of indigenous people. Frescura (2016) submits that the missionaries held a view of indigenous people that undermined their way of life. They sought to "civilise" the local people. This aligns with Seroto's (2019) argument about the term indigeneity being used in the service of European colonialism. For instance, the so-called "primitive" lifestyles of indigenous people were taken advantage of by European settlers to exploit the labour of the former by introducing them to an alien morality and work ethos. In higher education institutions in Africa, the existing situation demonstrates a tendency for Eurocentric epistemology to dominate curricula. Ndofirepi and Gwaravanda (2019) argue that African universities have models that either remain exclusively Western or weakly include AIKS. Asea (2022) also views higher education in Africa as having not moved on from colonial and apartheid worldviews and, as a result, impedes the inclusion of AIKS. Even in attempts to include AIKS in response to calls for decolonised, Africanised, and indigenised African universities, Kgope (2023) argues, there has been more failure than success in recognising intellectually emancipating AIKS. AIKS in higher institutions remains largely marginalised, suppressed and silenced.

There are also inadequate discussions about the integration of AIKS at the school level. Higher education has at least attempted to decolonise the curriculum and integrate AIKS, whereas secondary schools remain stagnant. Dinah (2018) suggests that school curricula are modelled on the decolonisation discourse of higher institutions. So far, secondary school policies and practices still appear to be embracing coloniality despite the end of apartheid (Ajinamolayan, Udoh & Arise, 2024). These authors find that CAPS is based on generic content that barely references anything specific about African ways of life, culture or religion. Indigenous identities remain underrepresented, neutralised and trivialised in the curriculum, which suggests they are still seen as primitive and unscientific, as in apartheid education. Da Silva, Perreira, and Amorim (2024) argue that, given the colonial foundations of the formal education system in South Africa, it is not surprising that its curriculum content often diverges from indigenous knowledge systems and ontologies.

Similarly, Mji, Kalenga, Ned, Alperstein and Banda (2017) argue that although AIKS is recognised in the curriculum, content and integration are not overtly expressed or stated. Thus, many schools are not better guided in integrating African knowledge paradigms. Moreover, the revision process for an updated CAPS by the Department of Basic Education seems to focus on adding new subjects such as robotics and coding (Hoadley, 2023) and remains silent on how the integration of AIKS can be strengthened. However, while it is standard for curricula in South Africa to be flimsy on the integration of AIKS, there is a growing body of literature on the integration of AIKS in science curricula (see Seehawer, 2018; de Beer & Kriek, 2021; Keane, Khupe & Seehawer, 2017). These arguments highlight the reasons for the exclusion of AIKS from Social Sciences teacher education and secondary schools as historical; policies and practices are still informed by apartheid and colonial paradigms. Mekoa (2015) concurs with other scholars that the challenges for the integration of AIKS are political, ideological, institutional, and structural. The indigenous epistemologies, which have been marginalised are a repository of local communities' traditions, skills, tools, strategies and methods with rich generational history.

Indigenous knowledge has an irreplaceable value as it guides, restores, and reshapes our perspectives about fundamental historical, social and environmental issues. Discussion about indigenous epistemologies and ontologies is more important now than ever, especially because post-colonial curricula acknowledge the need for African epistemologies, but practical implementation remains limited. Seehawer (2018) suggests that the gaps in curricula and the literature regarding AIKS can be addressed by pedagogies that deliberately identify AIKS relevant to their context. Tarisayi (2020) notes that critical indigenous pedagogy should be a strategy to integrate AIKS. Critical Indigenous pedagogy is based on reclaiming previously marginalised heritage and knowledge (Mvenene, 2017).

Methodology

Methodological Approach

The adopted conceptual approach analyses and synthesises the existing literature to build and advance arguments on the structural, ideological and cultural epistemic wall that impedes the integration of AIKS in Social Sciences. The decolonial literature and the work of Ladson-Billings (2021 & 1995) and Gay (2021) informed the conceptual approach. This study is not a systematic literature review but is structured as a conceptual review. The aim is to develop an analytical and theoretical framework based on selected literature. In line with this, the study analyses literature on the organisation of the Social Sciences CAPS, Social Sciences teacher education, the importance of AIKS, and its integration. This analysis lends credence to the arguments advanced in this paper. Essentially, the paper contends that the compartmentalisation of history and geography in Grades 7 to 9 Social Sciences CAPS contributes to the lack of teachers' integration of AIKS and IKS. The compartmentalisation is evident in the fragmentation of content; history is divided from geography, and this division is maintained in practice. This creates an epistemic wall that hinders the integration and

elicitation of AIKS. The word epistemic wall is coined to describe the solid and fixed knowledge boundaries between two bodies of knowledge, particularly History and Geography.

The epistemic wall is further strengthened by the lack of integration of AIKS in teacher education programmes, particularly Social Science Education. This results in teachers not recognising, valuing, or even considering AIKS when teaching Social Sciences. To advance the arguments articulated in this paper, the study first discusses the discourses on AIKS and then examines how higher education and secondary schools have responded to the calls to integrate AIKS into their programmes, curricula and teaching and learning. The call for integration of African Indigenous Knowledge is not mere hype but a desideratum of knowledge that can transform students' academic performance, address cognitive historical injustices and challenge Eurocentrism and institutional hegemony. The study concludes by recommending the inclusion of AIKS in Social Sciences teacher education.

Theoretical framework

This study adopts a culturally responsive pedagogy as a lens to guide the discussion about the integration of AIKS in the Social Sciences curriculum. A culturally responsive pedagogy is an educational approach that recognises students' diverse backgrounds and experiences and seeks to create inclusive and engaging learning environments. This approach goes beyond “good teaching” and emphasises the need for teachers to incorporate students' cultural identities and perspectives into the teaching and learning processes (Ladson-Billings, 2021 & 1995). By doing so, culturally responsive pedagogy aims to improve academic achievement, promote positive self-identity, and foster critical thinking among students (Gay, 2021). Culturally responsive pedagogy assists in understanding the significance of AIKS and frames our thinking around the integration of Social Sciences and the integration of AIKS in Social Sciences.

African Indigenous Knowledge System

Ayeni and Aborisade (2022) define AIKS as knowledge and knowledge systems significant to African people. Given the various definitions of AIKS and the different perspectives on what it means to be indigenous worldwide, AIKS can be challenging. For Kincheloe (2006), indigenous knowledge describes the rich and complex knowledge perceived by Europeans in the 17th and 18th centuries as primitive and inferior. This aligns with Canessa's (2018) view that being indigenous is highly variable, context-specific and changes over time. Hence, Latulippe and Klenk (2020) maintain that indigenous knowledge is inextricable from socio-cultural, political and legal context, from the land and its people.

Following the conceptualisation of AIKS, Latulippe and Klenk (2020) distinguish between the supplemented and governance values of AIKS. They argue that although indigenous knowledge has been viewed and used as though it furnishes supplemental value, AIKS has governance value. The governance value of AIKS alludes to the irreplaceability of this knowledge as a “source of guidance for Indigenous resurgence and nation-building” (Whyte, 2018, p.5). This value is evident in how some modern practices, even medicine, have AIKS

attributes. Nevertheless, the error in classifying AIKS as having supplemental value is committed by non-Western individuals and researchers and is also evident in the work of African scholars. Kaya and Seleti (2013) note that African scholars use AIKS to add an African worldview to the education system that a European worldview has historically dominated. Given the entrenched history of colonial epistemologies in African education, the integration of AIKS may signal a deeper rethinking, a potential new beginning in the pursuit of epistemic justice.

Western education has generally had a hard knock-on effect on African ways of being. The West desired to improve the quality of life of indigenous people in Africa by bringing material and social change. As a matter of historical fact, the main aim of colonialism was never to improve the quality of life for indigenous people. It could be that, whatever they brought with them, disadvantaged Africans benefited, and the very few, creating a class of African elites. In the process, African ontologies and epistemologies have been undermined. Akena (2012) argues that when dominant groups produce knowledge, proclaim it as civilised and impose it on others without negotiating or consulting them, this knowledge is most likely to work in favour of the dominant group. As a response to the Western views that invalidate African worldviews, Khumalo and Baloyi (2017) point out that Africa has been able to generate, test and apply knowledge through its methodologies and approaches. Therefore, turning to lost ontologies can inform knowledge production and pedagogical practices determined by cultural context and history. This epistemic and ontological turn towards indigenous knowledge is part of the African Renaissance (Higgs, 2012).

The governance value attached to AIKS indicates that this knowledge is sound and actionable and can exist independently of other knowledge systems. It does not need Western knowledge or any other knowledge to function. To this end, understanding AIKS as the knowledge embedded by its governance value helps to discard the flawed logic that should be brought in for it to be concrete, as it has supplemented value. In a nutshell, AIKS cannot be employed as a supplement in the African context because it has governance properties that require it to be at the centre and regulate the ways of knowing, doing, and being. Several countries can be presented as evidence to support the claims that AIKS can function as independent and scientific knowledge. Ngcamu and Chari (2020) note that AIKS are valuable in predicting weather and farming practices in Zimbabwe. Likewise, Namibian farmers found that Indigenous Knowledge Systems contribute to their farming practices (Ngcamu & Chari, 2020). Ayeni and Aborisade (2022) contend that despite claims of AIKS being merely rural and unscientific, this knowledge is demonstrably rooted in rationalism and empiricism. Having been sustained and transmitted across generations, AIKS remains central in various African countries, despite decades of contention and a lack of formal recognition. The increasing demand for African indigenous knowledge largely stems from the pervasive dominance of Western knowledge, which is often presented and accepted as universal and objective (Latulippe & Klenk, 2020). Similarly, Akena (2012) argues that Western knowledge has been

identified, proclaimed as legitimate, and imposed as a monolithic view, thereby granting Europeans power. While acknowledging the necessary de-centring of Western epistemologies, it is important to recognise the intersectionality between AIKS and Western knowledge. This is not to imply that AIKS is dependent on Western knowledge, but rather to acknowledge their points of convergence and potential for mutual enhancement. As Kolawole (2012) notes, the two systems share important commonalities. Capitalising on these commonalities can significantly enhance the shift to the integration of AIKS. The intersectionality of these knowledge systems is, for instance, evident when both Western knowledge and AIKS are employed to frame and conceptualise citizenship issues (Kubow, 2007).

Western knowledge systems have discredited and sometimes nullified other ways of knowledge, reducing them to savagery, superstition and primitivism (Akena, 2012). In line with this view, it should be remembered that the spread of Western knowledge is not due to its epistemic properties; it was fundamentally perpetuated in South Africa by colonialism and apartheid. More specifically, Kgari-Masondo (2023) insists that colonialism caused epistemic violence by shifting African indigenous knowledge to the periphery so that European education, driven by Western knowledge, can move to the centre. However, attempts to completely diminish African Indigenous Knowledge Systems by apartheid education and the colonial system were not successful (Tisani, 2004). As Tisani (2004) argues, African Indigenous Knowledge Systems are dynamic, resilient, and adaptable.

African Indigenous Knowledge System in School Curriculum

The African Renaissance has been fundamental in including African stories and voices into their histories, present and future experiences and practices. In education, particularly curriculum development, the call for AIKS has been linked to the call for decolonisation and Africanisation. Higgs (2012) argues that calls for AIKS in education follow the misconception that Africans have little or no indigenous knowledge which can be used in educational transformation. This misconception has continued to devalue AIKS by moving it to the periphery of knowing and being. Some studies have persuasively argued that some AIKS is presented as part of Western knowledge. Tynan (2023) argues that Western countries collect local knowledge as a form of data and cleanse it of its contextual properties to create neutral and objective knowledge.

Higgs (2012) claims that the call for an African Renaissance in education seeks to demonstrate how AIKS can be applied as a foundational resource for the socio-educational transformation of the African continent and how Indigenous African Knowledge Systems can be politically and economically liberating. Following the development of the African Renaissance, studies call for African indigenous education, and the education system is evident in Indigenous communities of South Africa. Indigenised education and school curricula strengthen the cognitive development of students, which leads to academic achievement (Shizha, 2014). Ngobeni, Chibambo and Divala (2023) argue that it could benefit the indigenous people of South Africa to integrate Indigenous languages as part of the AIKS into the school curriculum.

This argument is presented in consideration of the fact that the inclusion of the Indigenous language has been debated since the early 2000s. Kgari-Masondo (2023) justifies the call for an African Indigenous education system, arguing that it prepares the South African youth to be active and productive members of their societies by instilling skills necessary to achieve societal needs. This is evident in the generational values fostered by the African philosophy, such as Ubuntu, common good, humanism and so forth.

Speaking about education alone is not adequate; key and specific policies and areas in the education system that need to drive this initiative should be prioritised. Studies show that several attempts have been made to integrate IKS in South African school subjects, such as Life Sciences (Cindi, 2021; de Beer & van Wyk, 2021; Jituafula, 2024), Mathematics (Naidoo, 2021; Madimabe, Omodan, & Tsotetsi, 2022), Natural Sciences (Mlotshwa & Tsakeni, 2024), Geography (Membele, Naidu, & Mutanga, 2022; Mbah, Ajaps, & Molthan-Hill, 2021) and other science school subjects (Taylor & Cameron, 2016; Mpofu, 2016; Jacobs, 2015; Reddy, De Beer & Petersen, 2017).

In Geography, Tarisayi (2020) suggests that AIKS can be integrated as indigenous spatial knowledge in the topics of mapping techniques and human-land relations. Similarly, Mvenene (2017) urges history policy developers and teachers to investigate how IKS can be a significant source of unearthing local history, heritage, and knowledge that has not been part of the mainstream narrative. This argument is based on the view that there should be a balanced presentation of history beyond distorted and biased Eurocentric approaches. Although evidence supporting the integration of AIKS into school-based humanities subjects is growing, many subjects, including Social Sciences, lack pedagogical frameworks and institutional readiness for such integration/incorporation. This lack of preparedness is increasingly difficult to justify given the urgent imperative for educational transformation.

Similarly, Shizha (2014) notes that although substantial studies focus on a renaissance in education systems in Africa, most of the policies on indigeneity are political and rhetorical. They have not been put into action or legislated. This is evident in the South African Social Sciences CAPS, where the value of Indigenous Knowledge Systems is acknowledged in all the CAPS documents (Department of Education, 2011). However, CAPS neither stipulates nor suggests ways in which AIKS can be integrated into teaching nor how to facilitate the stipulated content and skills. Tisani (2004) asserts that although the South African education system has been exposed to the most intense changes, teachers are responsible for interpreting and integrating the changes. However, teachers are not trained nor provided with adequate support to integrate AIKS. Teachers should be trained to integrate AIKS into their teaching and lessons effectively to contribute to the recognition of the cultural diversity of students (Masuvhe, Ramulumo, & Gumbo, 2024). In this way, teachers will contribute to providing inclusive and culturally responsive content. Da Silva, Pereira, and Amorim (2024) maintain that integrating AIKS into a curriculum is hindered by the teacher's lack of training and experience.

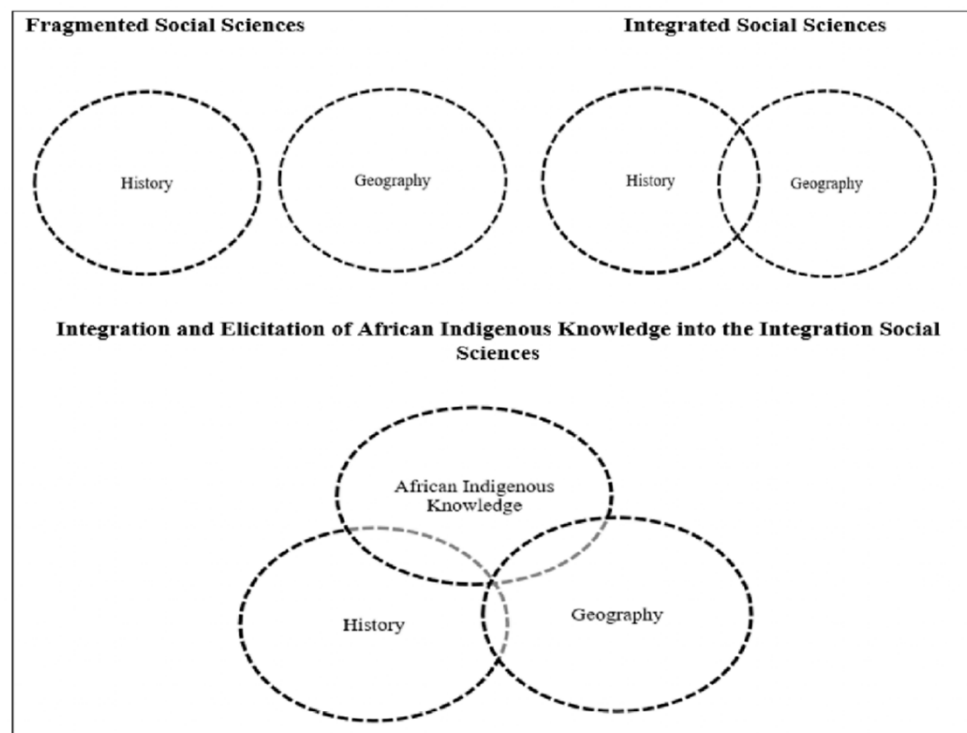


Figure 1. Integration of the social sciences school subject and integration of AIKS in the teaching and learning of this subject.

Figure 1 is a visual representation of the Social Sciences. The first part is a representation of the South African Social Sciences CAPS and its pedagogy currently. The juxtaposition and proximity of History and Geography in the first part of the diagram illustrate the compatibility of these two components in the Social Sciences and the possibility of their integration. However, as illustrated, there is a space between them, symbolising the fragmentation and separation in teaching, assessing, and learning. This part validates the debates articulated by Nkosi (2021) and Kgari-Masondo (2017) about the compartmentalisation and fragmentation of Social Sciences. The second part of the diagram depicts integrated History and Geography. This integration is symbolised by the connection and overlapping of the two circles. This is the integration that this study advocates for as the first step towards the integration of AIKS. Finally, the last part shows the level that Social Sciences should aspire to reach. It illustrates integrated Social Sciences, which accommodate AIKS. As da Silva et al (2022) submit, knowledge identities are enriched through connection instead of fragmentation and treating each knowledge system as isolated. Thus, the aim is to have Social Sciences pre-service teachers transforming Social Sciences from how it is depicted in the first part of the diagram to the second, and finally to the last diagram.

Integration of the African Indigenous Knowledge System in teacher education

Many studies have interpreted the focus on indigenous education as a foundational movement in the decolonisation and Africanisation of curricula in higher education institutions. According to Bhuda and Gumbo (2024), the University of Johannesburg, the University of Limpopo, the University of KwaZulu-Natal, the University of South Africa, the University of Venda and the University of Free State were identified to integrate AIKS in their curricula. Some of these institutions, such as the University of KwaZulu-Natal, the University of North

West, and the University of Limpopo, have responded and launched AIKS centres to provide a historical profile of AIKS (Opoku & James, 2021).

In some universities and faculties of education, courses on AIKS are offered (Madden, 2015). Incorporating IKS in higher education provides students with localised contexts where they can engage with this knowledge, often through collaboration with community members who are holders of AIKS (Kaya, 2013). Furthermore, it would foster the development of essential values and attitudes in students, equipping them to navigate sensitive topics and engage with broader societal issues (Kaya & Seleti, 2013), and incorporating it into higher education would allow students and teachers to critically reassess the historical marginalisation of these knowledge systems, thus challenging traditional hierarchies of knowledge (Kaya, 2013).

The faculties of education have a responsibility to embrace indigenous knowledge in education and to prepare students to carry out similar work. The involvement of pre-service teachers means involving indigenous and non-indigenous teachers to the extent where they see themselves as affected by, implicated in and accountable for contributing to making education responsive to local indigenous priorities (Madden, 2015). The aim would be for students to work with indigenous communities to produce and reproduce AIKS. Indigenous knowledge holders have the potential to contribute to the integration of Indigenous and Western knowledge (Govender, Mudaly & James, 2016).

Empirical research shows that pre-service teachers find AIKS-driven teaching and learning interesting. Mudaly (2018) notes that engaging science pre-service teachers in activities that raise their consciousness about AIKS makes them value the knowledge and enjoy the lessons. Learning from local communities has also been identified as a factor that contributes to the enjoyment of AIKS. Naah and Osei-Himah (2024) discovered that pre-service teachers recognise the contribution of AIKS in developing meaningful learning experiences. The integration of AIKS produces fresh perspectives on the contribution of AIKS in sustainability (Anor, 2024). Furthermore, the involvement of pre-service teachers in AIKS will help to confront and challenge the historical tendency of marginalising and garbling indigenous knowledge (Madden, 2015). Although the literature indicates that the lived experiences of pre-service teachers on AIKS integration are mostly positive, it is important to acknowledge that these experiences are mostly confined to science education.

Nonetheless, despite its significance in teacher education, there are still challenges that impede the integration of AIKS. According to Wilujeng and Prasetyo (2018) and Seleke, Els, and De Beer (2019), observe that some modules or courses, such as Life Orientation education in technical and vocational education and training (TVET) in colleges, lack integration of AIKS. The slow shift to the integration of AIKS in teacher education signals a delay in transformation, particularly the decolonisation of higher education curriculum.

According to Cameron, De Leeuw, and Desbiens (2014), part of the challenge to the meaningful integration of IKS in higher education institutions relates to the attempts to mobilise indigenous knowledge, beliefs, and practices within colonial structures of knowledge

production. This is supported by Makuvaza and Shizha (2017), who point out how African countries have struggled to develop homegrown curricula after colonisation. The existing situation suggests that curricula in most African countries follow the education system left by colonialists. The structures of the curricula often followed in Africa remain essentialised, racialised and dominated by colonial forms of representation (Cameron, De Leeuw, & Desbiens, 2014) and integrating indigenous epistemologies and ontologies in these structures is often unsettling and destabilising. The challenges range from homogenising policies that mandate Eurocentric curricula content (Chilisa, 2019) to standardised national curricula, textbooks, and assessments (Keane, Khupe & Muza, 2016). This entrenches Western epistemological frameworks, allowing little flexibility for localised engagement with context-specific knowledge.

Despite a paucity of studies on Social Sciences teacher education and secondary school Social Sciences education for pre-service teachers in South Africa, available literature highlights two critical areas. Firstly, while pre-service teachers in undergraduate modules are taught Social Sciences using an integrated approach, aligning with the prescribed school curriculum for Grades 7 to 9 (Nkosi, 2021). However, this integration often diminishes at the postgraduate level. Kgari-Masondo and Ngwenya (2020) contend that Honours-level Social Sciences education often lacks integration and employs pedagogies not grounded in a multidisciplinary approach. This fragmentation extends to secondary schools, where Social Sciences lessons continue to be taught in a manner that fails to synthesise History and Geography (Nkosi, 2021; Kgari-Masondo, 2017; Lyer, 2018). This persistent fragmentation ultimately results in teachers conducting History and Geography lessons as distinct, separate subjects.

The lack of integration is evident not only in practice but also in policy. The Social Sciences CAPS for Grades 7 to 9 defines Social Sciences as a subject that consists of History and Geography, which are compatible (Department of Education, 2011). The document further separates History and Geography content in the Social Sciences policy and states that these subjects should be taught and assessed separately throughout the year. At the end of the term or year, marks from the History and Geography components are combined to produce a Social Sciences mark (Department of Education, 2011). This means there is a lack of integration in Social Sciences lessons. The lack of integration in Social Sciences teacher education, school curriculum (CAPS), and teaching of the subject undermines the epistemic nature of Social Sciences. Epistemologically, the Social Sciences are grounded in an interdisciplinary and multidisciplinary stance. Therefore, the epistemic wall by the fragmentation of Social Sciences shifts Social Sciences from its epistemic and ontological stances. The epistemic wall ensures the persistence of disciplinary boundaries and perpetuates knowledge exclusion where AIKS are sidelined and their potential contributions to the curriculum remain marginalised.

The epistemic wall is culturally and ideologically shaped. Although South Africa became a democratic country in 1994, and since then, several initiatives have been taken to “cleanse”

the education system of its apartheid and Eurocentric roots, the knowledge system taught in universities and schools remains rooted in a Western worldview. The epistemic wall in Social Sciences education can be traced to Western imperatives that have long regulated South African education and other social areas. The curriculum remains predominantly white, westernised and reinforces structural inequalities (Du Plessis, 202; Ndlovu-Gatsheni, 2021; Heleta, 2022; Masenya, 2021; Maistry, 2021). Essentially, the western worldview and traditions that have dominated in education are centred on western supremacy, hierarchical ordering of knowledge and have zero respect for the multiplicity of epistemologies. The reason that some teachers reject local knowledge and teach Westernised content (Naah & Osei-Hima, 2024) is that the education system has always been grounded in Eurocentric ideologies.

The entrenched epistemic wall is not merely a barrier, but a structural manifestation of Western epistemological paradigms, specifically its emphasis on categorisation, universalism, linearity, and positivism. These characteristics inherently resist the inclusion of diverse epistemologies and obstruct meaningful educational transformation. Clarysse (2023) observes a parallel phenomenon in the Ontario Social Sciences curriculum, where the compartmentalisation of IKS fosters cognitive imperialism. Consequently, by effectively training Social Sciences preservice teachers to integrate AIKS into their practice, teacher education can actively contribute to the dismantling of this cognitive imperialism and foster a more epistemically just educational landscape.

Implications of disregarding integration and AIKS in the training of social sciences preservice teachers

Failure to embrace integration in Social Sciences not only impedes a multidisciplinary approach but also contradicts the very nature of the discipline and subject. In our interconnected world, Social Sciences have the potential to cultivate essential social values such as respect, honesty, ubuntu, integrity, compassion, and social justice. Maposa (2017) acknowledges these values as essential for social change in social sciences and notes that these values are deeply rooted within African cultures. They can be accessed by tapping into AIKS. The integration of AIKS in Social Sciences promotes intercultural competence (Paquin, 2023). Similarly, in Australia, Sabyasachi and Panda (2022) state that introducing students to IKS in Social Sciences education enables them to be aware of their Aboriginal culture and identity. Cindi (2021) argues that the integration of AIKS in the South African school curriculum will contribute towards decolonising the curriculum and education system. The omission of AIKS in teaching Social Sciences and teacher training raises serious concerns regarding the preparedness and competence of Social Sciences pre-service teachers. These shortcomings in recognising and integrating AIKS in teachers' education may lead to the development of Social Science pre-service teachers who are incompetent in working with this knowledge. While many social issues ought to be addressed through social sciences, Sabyasachi and Panda (2022) argue that when IKS is integrated into social sciences, this subject may be even more effective in addressing the issues.

According to Iyer (2018), the political ideals associated with the Social Sciences curriculum at the school level align with social integration. Social integration is about integrating social aspects of life, both the natural and social. Iyer (2018) submits that integration can improve social connections between communities, encourage collaboration, improve student interactions with their communities and shape their identities. To this end, AIKS can be effectively invoked when teaching Social Sciences. Considering that knowledge acquisition is grounded in the collective, community and is based on a practical and social slant in AIKS (Owusu-Ansah & Mji, 2013), this can offer Social Sciences pre-service teachers and their students' opportunities to develop their social skills. Lack of integration and AIKS in Social Sciences may deprive pre-service teachers of engaging with dynamic disciplines that cross knowledge borders.

Moreover, the exclusion of AIKS in the training of the Social Sciences pre-service teachers may compromise the development of their cultural consciousness, which is imperative for challenging the status quo in their institutions and the institutions where they will be teaching. This claim is supported by the understanding that exposure to relatable knowledge is one of the prerequisites for developing an individual's critical consciousness (Heberle, Rapa, & Farago, 2020). AIKS carries cultural consciousness and disrupts colonial narratives (Pewewardy, Lees, & Clark-Shim, 2018). Critical and cultural consciousness are two powerful tools from which historical, political, social and economic consciousness can be developed and ultimately bring about social transformation.

Conclusions and Recommendations

This study examined the integration of Social Sciences, the integration of AIKS and the preparedness of preservice teachers to integrate AIKS in their practice. The findings affirmed that while progress has been made in responding to AIKS in some areas, the Social Sciences education remains westernised and understudied. The slow progress in achieving education that is grounded on AIKS means a delay in decolonisation, social and epistemic justice, and ultimately reaching a culturally relevant education. At the same time, Western traditions and epistemologies continue to thrive and create solid binaries between forms of knowledge.

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

The acknowledgement of the integrated nature of Social Sciences as a discipline and a subject is the first point of entry in ensuring that pre-service teachers are being prepared to implement integration between Social Sciences and AIKS. Recognition of integration as a vital and inextricable aspect of the discipline will inform the development of modules, including teaching methodologies in Social Sciences teacher education. Similarly, at the schooling level, policymakers should also consider revising the Social Sciences CAPS to be in tune with such changes. The policy must be reformed in that it guides the integration of AIKS.

As indicated in this study, some higher education institutions offer courses on AIKS, while others have centres dedicated to AIKS. In training teachers, enrolling in these courses alone

may not be adequate to skill Social Sciences pre-service teachers in integrating and eliciting AIKS in their practices. These courses offer the theoretical aspects of AIKS, and pre-service teachers require more than this.

According to Mandikonza (2019) and Kaya and Seleti (2013), language is an important non-tangible artefact for AIKS, so students who use their mother tongue to unpack AIKS in their modules perform well academically. This is supported by many other studies that consider language to be an important instrument for AIKS (Mawere, 2015; Ndebele, 2014; Njoh, Esongo, Ayuk-Etang, Soh-Agwetang, Ngyah-Etchutambe, Asah, & Tabrey, 2024; Hall & Tandon, 2017). When students use their mother tongue, they relate better to the content of the discussion, and they may contribute to producing new terminologies and conceptions grounded in the language used. Using the mother tongue has many benefits, including optimising students' cultural knowledge and skills, viewed as prior knowledge.

The Social sciences preservice teachers also need to be exposed to opportunities to work with AIKS in practice. This will require lecturers can also shift from lecture methods to seminar and project-based learning. Essentially, the indigenous knowledge holders can be invited to deliver a talk, conduct workshops and collaborate with the students and lecturers to create Social Sciences lessons that are centred around AIKS. This will train preservice Social Sciences teachers to integrate cultural artefacts. For example, in term 2, the social sciences curriculum prescribes the topic “learning from leaders” for grade 4 in the history part, while in the geography component, “map skills” is prescribed as a topic. Therefore, when covering these topics, the indigenous knowledge holders, such as the local leaders (spiritual leaders, traditional leaders), can share insights about leadership principles and values that promote social cohesion and embrace diversity.

Micro-teaching, service learning and teaching practice should be considered platforms that can offer Social Science pre-service teachers the opportunity to work practically with AIKS and its holders. Micro-teaching aims to provide pre-service teachers with teaching experiences (Sithole, 2023). It helps them to transfer the theories into practice and to know how to teach (Richard, 2021). Due to the calmness and supportive environment offered by micro-teaching (Richard, 2021), pre-service teachers can improve their confidence in delivering lessons. The micro-teaching platform can enable preservice teachers to plan and deliver the Social Sciences lessons as guided by the indigenous knowledge holders. In this case, lecturers will become facilitators and provide constructive feedback. Such micro-teaching activities will ensure that teachers consider teaching and learning resources, the students' socio-economic backgrounds, and prior knowledge. Mandikonza (2019) argues that prior knowledge is a prerequisite for ensuring that students have access to the scientific knowledge provided at school. Hence, Masuvhe, Ramulumo, and Gumbo (2024) argue that methodologies that facilitate AIKS should be carefully designed to consider and appreciate students' local knowledge.

Furthermore, service-learning can also contribute to training culturally conscious preservice teachers. Lecturers must design service-learning programmes that clearly indicate how the preservice teachers can contribute to the community with the AIKS that they have reproduced in their teaching practice. Considering that service learning allows the community to learn from preservice teachers and vice versa, the preservice teachers' practice will be improved.

Lastly, preservice teachers can also learn from teaching practice. Unlike in micro-teaching or service-learning, where there is minimal interaction with the students, teaching practice provides student teachers with prolonged student interaction time. In this way, Social Sciences pre-service teachers can observe and learn how their mentor teachers engage with AIKS, identify their strengths and weaknesses in facilitating this knowledge, reflect on better practices and then develop different approaches or find different resources and teaching strategies and methods to facilitate knowledge acquisition. For example, when teaching in grade 6, the topic “medicine through time”, archives can be used to explore the indigenous medicine that was used by indigenous communities. To integrate the geography aspects into this discussion, the mentor teacher and the preservice teacher can also explore how reproductive medicine has evolved over time.

Although there are recommendations, the study further recommends that future research employ empirical methods to investigate and explore the lived experiences of Social Sciences pre-service teachers, teachers and learners. Research of this nature will aid in achieving a holistic understanding of the integration of AIKS into Social Sciences.

Conflict of interests

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References

- Akena, F. A. (2012). Critical analysis of the production of Western knowledge and its implications for Indigenous knowledge and decolonization. *Journal of Black Studies*, 43(6), 599–619. DOI: 10.1177/0021934712440448
- Akinmolayan, E. S., Hingston, C. A., Akpan, U. J., & Arise, O. A. (2024). Towards decolonisation of primary school education in South Africa. *South African Journal of Childhood Education*, 14(1), 1440. DOI:10.4102/sajce.v14i1.1440
- Anor, C. E. (2024). Teaching sustainability in science education: Pre-service science teachers' perceptions of the role of indigenous knowledge. *African Journal of Research in Mathematics, Science and Technology Education*, 28(3), 373–388. DOI:10.1080/18117295.2024.2402143
- Asea, W. B. (2022). Epistemic decoloniality of westernised higher education: A discourse on curriculum justice and knowledge integration at historically white universities in

- South Africa. *Arts and Humanities in Higher Education*, 21(4), 375–393. DOI:10.1177/14740222221104343
- Ayeni, A. O., & Aborisade, A. G. (2022). AIKSs and the world. *The Palgrave Handbook of Africa and the Changing Global Order*, 155-173. DOI:10.1007/978-3-030-77481-3_8
- Bhuda, M. T., & Gumbo, M. T. (2024). Developments Towards Integrating African Indigenous Knowledge in South African Universities. *UnisaRxiv*. DOI:10.25159/UnisaRxiv/000082.v1
- Cameron, E., De Leeuw, S., & Desbiens, C. (2014). Indigeneity and ontology. *cultural geographies*, 21(1), 19-26. DOI:10.1177/1474474013500229
- Canessa, A. (2018). Indigenous conflict in Bolivia explored through an African lens: Towards a comparative analysis of indigeneity. *Comparative Studies in Society and History*, 60(2), 308–337. DOI:10.1017/S0010417518000063
- Chilisa, B. (2019). *Indigenous research methodologies*. Sage publications. DOI:10.5204/ijcis.v5i1.97
- Chisholm, L., Friedman, M., & Sindoh, Q. A. (2018). Decolonising history of education in South African teacher education. *Southern African Review of Education with Education with Production*, 24(1), 74-91. DOI: <https://rb.gy/01wevi>
- Cindi, L. (2021). Incorporating African indigenous knowledge systems into the Basic Education curriculum: Experiences from two schools in the Gauteng and KwaZulu-Natal provinces, South Africa. DOI:11660/11720
- Clarysse, L. K. (2023). Compartmentalizing Indigenous knowledge (s): binary framing and cognitive imperialism in social studies curriculum. *Humanities and Social Sciences Communications*, 10(1), 1-7. DOI: 10.1057/s41599-023-01972-9
- Conrad, J. (2022). Desettling history: Non-Indigenous teachers’ practices and tensions engaging Indigenous knowledges. *Teachers College Record*, 124(1), 3-29. DOI: 10.1177/01614681221086069
- da Silva, C., Pereira, F., & Amorim, J. P. (2024). The integration of indigenous knowledge in school: A systematic review. *Compare: A Journal of Comparative Education*, 54(7), 1210–1228. DOI: 10.1080/03057925.2023.2184200
- Davids, N., & Waghid, Y. (2020). Tracking five years of teacher education enrolment at a South African university: Implications for teacher education. *South African Journal of Higher Education*, 34(2), 1–16. DOI: 10.20853/34-2-4044
- De Beer, J. J., & Kriek, J. (2021). Insights provided into the decolonisation of the science curriculum, and teaching and learning of indigenous knowledge, using Cultural-Historical Activity Theory. *South African Journal of Higher Education*, 35(6), 47–63. DOI: 10.20853/35-6-4217

- De Beer, J., & Petersen, N. (2016). Decolonisation of the science curriculum: A different perspective (# COOKBOOK-LABS-MUST-FALL). In Towards effective teaching and meaningful learning in Mathematics, Science and Technology Education: 7th International Conference on Mathematics, Science and Technology Education, ISTE 2016 Proceedings, Kruger National Park, South Africa, October (pp. 23-28). DOI: uir.unisa.ac.za/handle/10500/22869
- de Beer, J., & van Wyk, B. E. (2021). Indigenous Knowledge Systems and Western Science: The Conundrum of Validation. *Indilinga African Journal of Indigenous Knowledge Systems*, 20(2), 170-193. DOI: [10.10520/ejc-linga_v20_n2_a4](https://doi.org/10.10520/ejc-linga_v20_n2_a4)
- Department of Education (2011). Curriculum and assessment policy statement (CAPS) Grades 10-12: Geography. from <https://rb.gy/dckzfr>
- Department of Science & Technology. (2004). Indigenous Knowledge Systems. Retrieved March 01, 2024, from <https://shorturl.at/1NqsO>
- Dinah, M. M. (2018). Indigenising knowledge in intervening for the excluded children. *Indilinga*, 17(2), 234-244. from <https://www.ajol.info/index.php/indilinga/article/view/186133>
- Du Plessis, P. (2021). Decolonisation of education in South Africa: Challenges to decolonise the university curriculum. *South African Journal of higher education*, 35(1), 54-69. DOI: [10.20853/35-1-4426](https://doi.org/10.20853/35-1-4426)
- Frescura, F. (2016). A case of hopeless failure: The role of missionaries in the transformation of Southern Africa's indigenous architecture. *Journal for the Study of Religion*, 28(2), 64-86. DOI: [1011-76012015000200004](https://doi.org/10.1111-76012015000200004)
- Gay, G. (2021). Culturally responsive teaching: Ideas, actions, and effects. In *Handbook of urban education* (pp. 212-233). Routledge. DOI: [10.4324/9780429331435-16](https://doi.org/10.4324/9780429331435-16)
- Gilbert, J. (2020). The ILO Convention 169 and the Central African Republic: From catalyst to benchmark. *International Journal of Human Rights*, 24(2-3), 214-223. DOI: [10.1080/13642987.2019.1677610](https://doi.org/10.1080/13642987.2019.1677610)
- Gilbert, J. (2022). The rights of nature, indigenous peoples and international human rights law: From dichotomies to synergies. *Journal of Human Rights and the Environment*, 13(2), 399-415. from <https://rb.gy/h8y054>
- Godsell, S. D. (2021). Decolonisation of history assessment: An exploration. *South African Journal of Higher Education*, 35(6), 101-120. DOI: [10.20853/35-6-4339](https://doi.org/10.20853/35-6-4339)
- Govender, N., Mudaly, R., & James, A. (2016). Engaging indigenous knowledge holders in teaching preservice teachers in IKS food production and practices: Implications for higher education. *Alternation Journal*, 23(1), 180-207. from <https://rb.gy/9yytqb>
- Hall, B. L., & Tandon, R. (2017). Decolonization of knowledge, epistemicide, participatory research and higher education. DOI: [10.18546/RFA.01.1.02](https://doi.org/10.18546/RFA.01.1.02)

- Heberle, A. E., Rapa, L. J., & Farago, F. (2020). Critical consciousness in children and adolescents: A systematic review, critical assessment, and recommendations for future research. *Psychological Bulletin*, 146(6), 525–551. DOI: 10.1037/bul0000230 PMID: 32271028
- Heleta, S. (2022). Eurocentrism, racism and academic freedom in South Africa. In *Handbook on academic freedom* (pp. 191-205). Edward Elgar Publishing.
- Higgs, P. (2012). African philosophy and the decolonisation of education in Africa: Some critical reflections. *Educational Philosophy and Theory*, 44(sup2), 37–55. DOI: 10.1111/j.1469-5812.2011.00794.x
- Higgs, P., & Van Niekerk, M. P. (2002). The programme for indigenous knowledge systems (IKS) and higher educational discourse in South Africa: A critical reflection: Perspectives on higher education. *South African Journal of Higher Education*, 16(3), 38–49. DOI: 10.4314/sajhe.v16i3.25215
- Hoadley, U. (2023). COVID-19 and the South African curriculum policy response. Note for the Covid-Generation Project. Stellenbosch, Research on Socio-Economic Policy, Stellenbosch University.
- Iyer, L. M. (2018). South African Social Sciences teachers' views on the integration of History and Geography in the General Education and Training phase. TD. *The Journal for Transdisciplinary Research in Southern Africa*, 14(2), 1–7. DOI: 10.4102/td.v14i2.482
- Jacobs, K. R. (2015). The classroom implementation of Indigenous knowledge in the science curriculum by science teachers in the Western Cape province. DOI: 11427/15553
- Jituafula, A. (2024). Best Practices for Promoting Science Student Teachers' Technological Pedagogical Content Knowledge (TPACK) in Life Science. *Journal Pendidikan IPA Indonesia*, 13(4). DOI: 10.15294/jt9zcy71
- Kaya, H. O. (2013). Integration of AIKSs into Higher Education in South Africa: Prospects and challenges. *Alternation (Durban)*, 20(1), 135–153. DOI: EJ1017665
- Kaya, H. O., & Seleti, Y. N. (2013). AIKSs and relevance of Higher Education in South Africa. *International Education Journal: Comparative Perspectives*, 12(1). DOI: EJ1017665
- Keane, M., Khupe, C., & Muza, B. (2016). It matters who you are: Indigenous knowledge research and researchers. *Education as Change*, 20(2), 163–183. DOI: 10.17159/1947-9417/2016/913
- Keane, M., Khupe, C., & Seehawer, M. (2017). Decolonising methodology: Who benefits from Indigenous knowledge research?. *Educational Research for social change*, 6(1), 12–24. DOI: 10.17159/2221-4070/2017/v6i1a2
- Keane, M., Raciti, M., van der Westhuizen, G., Motala, S., Stanton, S., Gilbey, K., & Msimango, S. (2023). Indigenous knowledge systems in South Africa and Australia:

- Transforming doctoral education. *Curriculum Perspectives*, 43(S1, Suppl 1), 83–93. DOI: 10.1007/s41297-023-00183-1
- Kgari-Masondo, C., & Ngwenya, J. (2020). Lecturers' reflections on the teaching of Social Sciences in a multidisciplinary context at a university in South Africa. *Reflective Practice*, 21(2), 198–209. DOI: 10.1080/14623943.2020.1732332
- Kgari-Masondo, M. C. (2017). Rethinking the reflective praxis of the name Social Science: Pedagogical 'mischief' in the Grade 4 to 9 Social Science curriculum. *Yesterday and Today*, 18, 85–107. DOI: 10.17159/2223-0386/2017/n18a5
- Kgari-Masondo, M. C. (2023). Migrated Pedagogies: Contributions of COVID-19 in Decolonising Higher Education. *Alternation* (Durban). DOI: 10520/ejc-alt_v41_nsed_a5
- Kgope, T. V. (2023). The indigenous knowledge system of Credo Mutwa: A pedagogical challenge in higher education in South Africa. *Curriculum Perspectives*, 43(S1, Suppl 1), 95–103. DOI: 10.1007/s41297-023-00182-2
- Khumalo, N. B., & Baloyi, C. (2017). African indigenous knowledge: An underutilised and neglected resource for development. *Library Philosophy and Practice*, 1663, 10–25.
- Kigozi, F. (2021). Teachers' Indigenous Knowledge awareness and how to implement it in teaching and learning sciences in South African schools (Master's thesis, University of the Witwatersrand, Johannesburg (South Africa)). DOI: 10539/32248
- Kincheloe, J. (2006). Critical ontology and Indigenous ways of being: Forging a post-colonial curriculum. In Kanu, Y. (Ed.), *Curriculum as cultural practice* (pp. 181–202). University of Toronto Press. DOI: 10.3138/9781442686267-010
- Kolawole, O. D. (2012). Intersecting Western and local knowledge: Critical issues for development research in Africa. *Journal of Knowledge Globalization*, 5(2), 1–23. DOI: researchgate.net/publication/236606160
- Kubow, P. K. (2007). Teachers' constructions of democracy: Intersections of Western and indigenous knowledge in South Africa and Kenya. *Comparative Education Review*, 51(3), 307–328. DOI: 10.1086/518479
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465–491. DOI: 10.3102/00028312032003465
- Ladson-Billings, G. (2021). *Culturally relevant pedagogy: Asking a different question*. Teachers College Press. DOI: ED614975
- Larsen, P. B., & Gilbert, J. (2020). Indigenous rights and ILO convention 169: Learning from the past and challenging the future. *International Journal of Human Rights*, 24(2-3), 83–93. DOI: 10.1080/13642987.2019.1677615

- Latulippe, N., & Klenk, N. (2020). Making Room and Moving Over: Knowledge co-production, Indigenous knowledge sovereignty and the politics of global environmental change decision-making. *Current Opinion in Environmental Sustainability*, 42, 7–14. DOI: 10.1016/j.cosust.2019.10.010
- Madden, B. (2015). Pedagogical pathways for Indigenous education with/in teacher education. *Teaching and Teacher Education*, 51, 1–15. DOI: 10.1016/j.tate.2015.05.005
- Madimabe, M. P., Omodan, B. I., & Tsotetsi, C. T. (2022). Incorporation of Indigenous knowledge in the mathematical geometry discipline at a TVET college. *Journal of Research in Mathematics Education*, 11(3), 296–312. DOI: 10.17583/redimat.7890
- Maistry, S. (2021). Curriculum theorising in Africa as social justice project: Insights from decolonial theory. *Curriculum theory, curriculum theorising and theories: The African theorising perspective*, 133–147. DOI: 10.1163/9789004447943_008
- Makuvaza, N., & Shizha, E. (2017). Introduction: Re-thinking education in postcolonial sub-Saharan Africa–Post-millennium development goals. In *Re-thinking Postcolonial Education in Sub-Saharan Africa in the 21st Century: Post-Millennium Development Goals* (pp. 1–11). SensePublishers. DOI: 10.1007/978-94-6300-962-1_1
- Maluleka, P. (2023). Towards a decolonized and Africanized school history curriculum in post-apartheid South Africa. Unpublished doctoral thesis, Wits University. DOI: hdl.handle.net/10539/41417
- Mandikonza, C. (2019). Integrating Indigenous knowledge practices as context and concepts for the learning of curriculum science: A methodological exploration. *Southern African Journal of Environmental Education*, 35. DOI: 10.4314/sajee.v35i1.13
- Maposa, M. T. (2017). Ubuntu as a theoretical framework for teaching Social Sciences. In Wassermann, J. (Ed.), *Teaching social sciences: Intermediate and senior phases* (pp. 19–43). Oxford University Press Southern Africa. DOI: 10.4102/td.v14i2.482
- Maseko, P. N. (2018). Transformative praxis through critical consciousness: A conceptual exploration of a decolonial access with success agenda. *Educational Research for Social Change*, 7(SPE), 78–90. DOI: 10.17159/2221-4070/2018/v7i0a6
- Masenya, M. J. (2021). Toward a relevant de-colonized curriculum in South Africa: Suggestions for a way forward. *SAGE Open*, 11(4), 21582440211052559. DOI: 10.1177/21582440211052559
- Mashego, S. L., Maditsi, M. E., & Bhuda, M. T. (2021). A response to Covid-19: Perspectives from AIKSs. *Gender & Behaviour*, 19(1), 17242–17254.
- Masuvhe, L., Ramulumo, M., & Gumbo, M. T. (2024). A Systematic Review of Indigenous Knowledge in Grade 7 Natural Science Education. *UnisaRxiv*. DOI: 10.25159/UnisaRxiv/000099.v1

- Mawere, M. (2015). Indigenous knowledge and public education in sub-Saharan Africa. *Africa Spectrum*, 50(2), 57–71. DOI: 10.1177/000203971505000203
- Mawere, M. (2024). *Culture, Indigenous Knowledge and Development in Africa*. African Books Collective.
- Mbah, M., Ajaps, S., & Molthan-Hill, P. (2021). A systematic review of the deployment of indigenous knowledge systems towards climate change adaptation in developing world contexts: implications for climate change education. *Sustainability*, 13(9), 4811. DOI: 10.3390/su13094811
- Mekoa, I. (2015). Challenges and opportunities for IKS in higher education institutions in South Africa: Politics, ideological, institutional cultures and structural dimensions. *Indilinga*, 14(1), 12–24. DOI: 10.10520/EJC174407
- Membele, G. M., Naidu, M., & Mutanga, O. (2022). Integrating indigenous knowledge and geographical information system in mapping flood vulnerability in informal settlements in a South African context: a critical review. *South African Geographical Journal*, 104(4), 446–466. DOI: 10.1080/03736245.2021.1973907
- Menkes, J., & Suska, M. (2023). THE ISSUE OF INDIGENOUS PEOPLES AT THE UNITED NATIONS: SELECTED PROBLEMS. *Studia Iuridica*, 96(96), 232–252. DOI: 10.31338/2544-3135.si.2023-96.12
- Mji, G., Kalenga, R., Ned, L., Alperstein, M., & Banda, D. (2017). Indigenous knowledge exclusion in education systems of Africans: Impact of beingness and becoming an African. In *Handbook of research on social, cultural, and educational considerations of indigenous knowledge in developing countries* (pp. 36–59). IGI Global. DOI: 10.4018/978-1-5225-0838-0.ch003
- Mlotshwa, N. P., & Tsakeni, M. (2024). Exploring Indigenous Knowledge Systems Integrated in Natural Sciences Practical Work in Selected South African Schools. *International Journal of Learning, Teaching and Educational Research*, 23(9), 383–400. DOI: 10.26803/ijlter.23.9.20
- Modiba, M., & Stewart, S. (2018). Changing teaching practice in South African schools: An examination of teacher development initiatives. In *Leading Change in Teacher Education* (pp. 146–160). Routledge. DOI: 10.4324/9780429459122-11
- Moyo, P. V., & Kizito, R. (2014). Prospects and challenges of using the argumentation instructional method to indigenise school science teaching. *African Journal of Research in Mathematics. Science and Technology Education*, 18(2), 113–124. DOI: 10.1080/10288457.2014.912831
- Mpofu, V. (2016). Possibilities of integrating Indigenous knowledge into classroom science: The case of plant healing (Doctoral dissertation). DOI: hdl.handle.net/10539/20706

- Mudaly, R. (2018). Towards decolonising a module in the pre-service science teacher education curriculum: The role of indigenous knowledge systems in creating spaces for transforming the curriculum. *Journal of Education (University of KwaZulu-Natal)*, (74), 47-66. DOI: 10.17159/2520-9868/i74a04
- Mudaly, R., & Ismail, R. (2013). Teacher learning through tapping into indigenous knowledge systems in the science classroom. *Alternation*, 20(1), 178-202. DOI: researchgate.net/publication/274068821
- Mvenene, J. (2017). The infusion of indigenous knowledge systems in the teaching and learning of South African history in the further education and training phase. *Indilinga*, 16(1), 100–117. DOI: 10.10520/EJC-8fad9880b
- Naah, A. M., & Osei-Himah, V. (2024). Perspectives of Pre-services Teachers on Indigenous Knowledge Practices and Their Integration into the Teaching and Learning of Science. *European Journal of Education and Pedagogy*, 5(4), 1-10. DOI: 10.24018/ejedu.2024.5.4.834
- Naidoo, J. (2021). Integrating indigenous knowledge and culturally based activities in South African mathematics classrooms. *African Journal of Teacher Education*, 10(2), 17-36. DOI: 10.21083/ajote.v10i2.6686
- Ndebele, H. (2014). Promoting indigenous African languages through information and communication technology localisation: A language management approach. *Alternation (Durban)*, 13(Special Issue), 102–127. DOI: researchgate.net/publication/338896779
- Ndlovu-Gatsheni, S. J. (2021). The cognitive empire, politics of knowledge and African intellectual productions: Reflections on struggles for epistemic freedom and resurgence of decolonisation in the twenty-first century. *Third World Quarterly*, 42(5), 882-901. DOI: 10.1080/01436597.2020.1775487
- Ndofirepi, A. P. (2011). Philosophy for children: The quest for an African perspective. *South African Journal of Education*, 31(2), 246–256. DOI: 10.15700/saje.v31n2a278
- Ndofirepi, A. P., & Gwaravanda, E. T. (2019). Epistemic (in) justice in African universities: A perspective of the politics of knowledge. *Educational Review*, 71(5), 581–594. DOI: 10.1080/00131911.2018.1459477
- Ngcamu, B. S., & Chari, F. (2020). Drought influences on food insecurity in Africa: A systematic literature review. *International Journal of Environmental Research and Public Health*, 17(16), 5897. DOI: 10.3390/ijerph17165897 PMID: 32823825
- Ngobeni, N. R., Chibambo, M. I., & Divala, J. J. (2023, June). Curriculum transformations in South Africa: Some discomfoting truths on interminable poverty and inequalities in schools and society. [J]. *Frontiers Media SA.*]. *Frontiers in Education*, 8, 1132167. DOI: 10.3389/feduc.2023.1132167

- Njoh, A. J., Esongo, N. M., Ayuk-Etang, E. N., Soh-Agwetang, F. C., Ngyah-Etchutambe, I. B., Asah, F. J., Fomukong, E. B., & Tabrey, H. T. (2024). Challenges to indigenous knowledge incorporation in basic environmental education in Anglophone Cameroon. *Journal of Asian and African Studies*, 59(5), 1387–1407. DOI: 10.1177/00219096221137645
- Nkosi, N. D. (2021). Experiences of senior phase social sciences teachers in curriculum integration: considerations for curriculum development. University of Johannesburg. DOI: hdl.handle.net/10210/486787
- Odora Hoppers, C. A. (2001). Decolonizing the curriculum, indigenous knowledge systems and gobalization. Unpublished paper delivered at the Gauteng Institute for Curriculum Development, April. DOI: hdl.handle.net/20.500.11910/8666
- Opoku, M. J., & James, A. (2021). Pedagogical model for decolonising, indigenising and transforming science education curricula: A case of South Africa. *Journal of Baltic Science Education*, 20(1), 93–107. DOI: 10.33225/jbse/21.20.93
- Owusu-Ansah, F. E., & Mji, G. (2013). AIKS and research. *African Journal of Disability*, 2(1), 1–5. PMID: 28729984. DOI: 10.4102/ajod.v2i1.30
- Paquin, A. (2023). The Integration of Indigenous Knowledge in Education.
- Pewewardy, C. D., Lees, A., & Clark-Shim, H. (2018). The transformational Indigenous praxis model: Stages for developing critical consciousness in Indigenous education. *Wicazo Sa Review*, 33(1), 38–69. DOI: 10.5749/wicazosareview.33.1.0038
- Phillips, J. S. (2015). The rights of indigenous peoples under international law. *Global Bioethics = Problemi di Bioetica*, 26(2), 120–127. DOI: 10.1080/11287462.2015.1036514
- Pulhehe, N. (2024). Indigenous knowledge in Indonesia curriculum development: Literature review of Indonesia's education policy. *Inovasi Kurikulum*, 21(1), 97–108. DOI: 10.17509/jik.v21i1.61910
- Reber, R. (2019). Making school meaningful: Linking psychology of education to meaning in life. *Educational Review*, 71(4), 445–465. DOI: 10.1080/00131911.2018.1428177
- Reddy, C., De Beer, J., & Petersen, N. (2017). The Indigenous knowledge debate in life sciences: What about Indian Indigenous knowledge? In *Towards effective teaching and meaningful learning in Mathematics, Science and Technology Education*, 8th International Conference on Mathematics, Science and Technology Education, ISTE 2017 Proceedings, Kruger National Park, South Africa (pp. 141-147). DOI: uir.unisa.ac.za/handle/10500/23424
- Richard, M. M. (2021). The Impact of Micro Teaching Lessons on Teacher Professional Skills: Some Reflections from South African Student Teachers. *International Journal of Higher Education*, 10(2), 164–171. DOI: 10.5430/ijhe.v10n2p164

- Robinson, M., Rusznyak, L., & Modiba, M. (2024). Fifty years of teacher education in South Africa: Towards systematic learning and social transformation. *Journal of Education for Teaching*, 50(5), 766–782. DOI: 10.1080/02607476.2024.2413449
- Sabyasachi Das & Panda, B.N. (2022). INTEGRATING INDIGENOUS KNOWLEDGE INTO SOCIAL SCIENCE TEACHING IN SECONDARY SCHOOLS OF KANDHAMAL DISTRICT OF ODISHA: AN EXPLORATORY STUDY.
- Seehawer, M. (2018). South African science teachers' strategies for integrating indigenous and Western knowledges in their classes: Practical lessons in decolonisation. *Educational Research for Social Change*, 7(SPE), 91-110. DOI: 10.17159/2221-4070/2018/v7i0a7
- Seleke, B., Els, C. J., & De Beer, J. (2019). Utilising Indigenous Knowledge in Higher Education for the Professional Development of Culturally Responsive Technology Teachers. A Scholarly Approach to Student Success in Higher Education. Ivyline Academic Publishers.
- Selepe, K., Ramsaroop, S., & Carolin, A. (2022). Incorporating indigenous knowledge in the teaching of weather and climate in primary school classrooms in KwaZulu-Natal, South Africa. *The Journal of Geography Education in Africa*, 5, 1-25. DOI: 10.46622/jogea.v5i1.3953
- Seroto, J. (2019). The embodiment of the indigenous people by European travel writers at the Cape colony, Southern Africa. *Education as Change*, 23(1), 1–24. DOI: 10.25159/1947-9417/5643
- Shizha, E. (2014). The Indigenous knowledge systems and the curriculum. In *AIKS and the disciplines* (pp. 113–129). Brill. DOI: 10.1007/978-94-6209-770-4_11
- Sithole, N. V. (2023). The efficacy of microteaching in a teacher education programme during the lockdown at a university in South Africa. *International Journal of Learning, Teaching and Educational Research*, 22(2), 76–91. DOI: 10.26803/ijlter.22.2.5
- Tarisayi, K. S. (2020). Integrating Indigenous Knowledge in South African Geography Education Curricula for Social Justice and Decolonization. *Research for Development*, 39(1), 26–38. DOI: 10.38159/ehass.20245711
- Taylor, D. L., & Cameron, A. (2016). Valuing IKS in successive South African physical sciences curricula. *African Journal of Research in Mathematics. Science and Technology Education*, 20(2), 35–44. DOI: 10.1080/10288457.2016.1147800
- Thornberry, P. (2013). Indigenous peoples and human rights. In *Indigenous peoples and human rights*. Manchester University Press. DOI: 10.7765/9781847791221
- Tisani, N. (2004). African indigenous knowledge Systems (AIKSs): another challenge for curriculum development in Higher Education?: perspectives on Higher Education. *South African Journal of Higher Education*, 18(3), 174–184. DOI: 10.4314/sajhe.v18i3.25489