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HIGHER EDUCATION

STADIO 2024 ACADEMIC CONFERENCE

UNLOCKING THE ACTIVE RRITE CURRICULUM

25 - 27 SEPTEMBER 2024 | STADIO CENTURION CAMPUS



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Learning science



Mismatch between school & home culture

Challenges experienced by indigenous learners in learning science – border crossing

INTRODUCTION



Decolonising the Curriculum: My Views

Mismatch



Mismatch between school & home culture

Learning science



Challenges experienced by indigenous learners in learning science - border crossing

Access & ownership

To offer indigenous learners uninhibited epistemic access and ownership to school Science and Technology

Education



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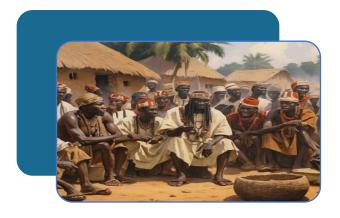
Social learning



Learning is a social process mediated by the learner's environment, and the learner's prior or indigenous knowledge is significant in accomplishing the construction of meaning in a new situation (Jedede & Aikenhead, 2001).

Mismatch between Language of Instruction & Home language





"Then, I went to school, a colonial school, and this harmony was broken. The language of my education was no longer the language of my culture. I first went to Iwa Primary school. Our language of education was not Kiswahili. My struggle began at a very early age constantly trying to find parallels in my culture with what was being taught in the classroom. In school we followed the British colonial syllabus. The books we read in class had been written by Mrs. Bryce, mostly adapted and translated into Kiswahili from British curricula. We read stories and sung songs about having tea in an English garden, taking a ride on the train, sailing in the open seas, and walking the streets of town. These were unfortunately stories far removed from our life experiences. As expected, we memorized them even though they were meaningless. By the time I was in fifth grade Swahili was no longer the medium of instruction. English had taken over and Kiswahili was only a subject taught once a week. Kichagga was not to be spoken at any time and if caught speaking we were severely punished. Thus, one of the most humiliating experiences was to be caught speaking Kichagga while still in the school grounds. The culprit was given corporal punishmentthree to five strokes of the cane on the buttocks" (Macedo, Semali, & Kincheloe,1999 p.13)

What is our conceptualisation of education & science? Is science what we seek or what we live?

All responses to your question will be shown here



Each response can be up to 200 characters long

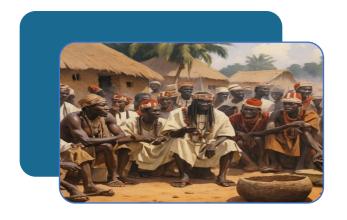
Turn on voting to let participants vote for their favorites

From Holistic Indigenous Education to Western Education/Schooling My Science learning experience





- School Science and Technology whilst narrated as universal knowledge are dominated (symbolism, form, content & language) in norms & concepts rooted in Western worldviews & conceptions of Knowledge hence resulting in many learners being excluded from learning science and technology meaningfully
- Science and Technology learning is regarded as a transcultural experience (Lee et al, 2012)
- To acquire the culture of science, indigenous learners must travel from their everyday life-world to the world of science found in their science classroom (Jedede & Aikenhead, 2001)
- Border crossing (Aikenhead, 2001)



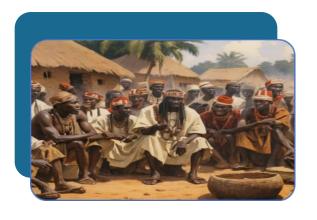
The decolonisation of schools and universities involves people who were previously marginalised under apartheid/colonialism, choosing to embrace and recognise their own cultures, tell their own histories, study from books written by Africans, and run institutions based on values that are reflective of African culture, as opposed to Eurocentric models (Du Plessis, 2021)

Acknowledge:

- Conflation with transformation
- Confusion with Africanisation
- Mixed bag of meanings and intentions?

Decolonization in education





- What do I see as possibilities
- Recognition that something is not just right
- Implying that there can be a solution (even if contested)
- It is possible to re-configure the aims as outcome of the curriculum
- It is possible to address the praxis of teaching and learning

Searching for clarity & Answers





- ME.d which explored Basic 7-9 Science and Technology Teachers' conceptions and knowledge of indigenous Knowledge system
- Key Questions: What are basic 7 9 teachers' conceptions of IKS as drawn from their lived experiences?

Key findings - Teachers' Conceptions of IKS - IKS is Scientific Knowledge

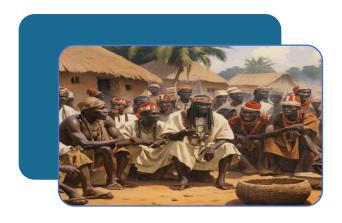




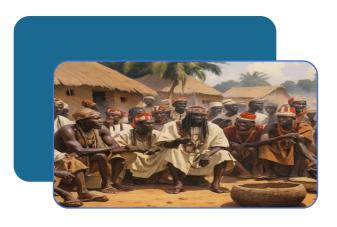
On many occasions when a child or children have convulsion you will see the old women or men rush into the bush and get one or two leaves (nchuawuta -Scent leave/Clove Basil; Ocimum gratissimum), but as a person who doesn't know the leaves too well, I don't know how they are able to know the particular leaves that can cure so many diseases like convulsions. To some people it looks like magic but to me, I believe that there is certain evidence of science there. Although they are not able to test the particular ingredient curing those sickness, but there is always a leaf that cures those sickness"

Key findings - Teachers' Conceptions of IKS - IKS is Scientific Knowledge



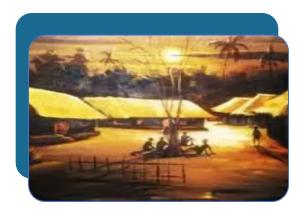


"If I want to prepare fufu (fermented cassava), instead of leaving it to stay for four days and be smelly, what I will do is to grind it as if I want to use it for garri (processed cassava). After grinding it, I will not squeeze out the water the way we do for garri, rather I will cover it and sprinkle more water and allow it to stay for two days instead of the normal four days. You know because you have increased the surface area for the reaction, so within those two days it will be like you have fermented it up to the normal four days and the smell will not be there. So that one is science, because you have increased the reaction, you know the surface area, so it reacts, it ferments, and the smell will not be there"

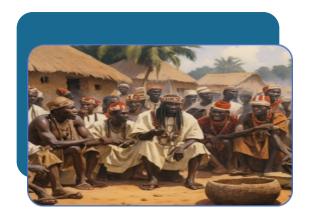


IKS is conceived as Informal Knowledge:

- I think IKS means the things you learn casually. Acquired at home, outside the classroom, you just learn them casually without attaching any importance to them, maybe you see people doing it or you see your mother or father doing it you learn it, and maybe at the end of the day, no examination on it"
- "These are informal knowledge acquired informally...
 acquired outside the four walls of the classroom, there is
 no exam to it, but it helps us in our day-to-day activities,
 they are IK".



- Processing of scent leave (nchuawuta) for medicinal purposes: Grinding, extracting & administering medicinal liquid content
- Processing of cassava tuber: Grinding & fermentation: Not squeeze water out because water is needed for hydrolysis (breaking down) of glycoside & lowers the cynide level by 70-95% (cassava is high in cynide)
- Teachers are appropriately positioned to manage the gap that exist between what students bring to school and what the school wants them to take home (Brayboy & Castagno, 2008)



- Mainstreaming of IKS into school science and technology will improve the educational achievement of learners and also help in actualizing global targets of science and technology for all (Jegede & Aikenhead, 1999, Nwokocha & Legg-Jack, 2024).
- Need for effective mentorship and support for teacher through learning communities with elders to prompt them to become cultural brokers
- Teachers must encourage inter-epistemological dialogue in their science and technology classrooms

The link to decolonization discuss: key takeaways





- Teaching and learning of science and technology becomes meaningful, inclusive and relevant to learner's culture (Ogunniyi, 2007, Lee at al, 2012).
- Opens up access for learners (DoE, 2002)
- Increases participation & interest
- Plurality of knowledge is encouraged in the teaching and learning processes

- Science and Technology remains abstract & inaccessible
- Non-Western

 (Indigenous) learners will continue to operate at the peripheries of the domains of science & technology
- Low participation

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In what ways does the decolonisation discourse hold value for PHEIs?

All responses to your question



Each response can be up to 200 characters long

Turn on voting to let participants vote for their favorites

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- Curriculum Relevance and Inclusivity reassessing the teacher development education & training imperatives
- Institutional Reputation and Appeal
- Cultural Competency and Global Competitiveness
- Adding a perspective to the discourse
- Find intersections to further debate and scholarship

SUGGESTIONS FOR THE WAY FORWARD



Reframing the decolonization discourse for clarity by:

RECONCILING

Reconciling the contestations and divergence of meanings

MOVING

Moving from rhetoric to enactment working with possibilities and common understanding of meanings

LOCATING

Specifically, locating the relevance of the Natural Science & Technology curriculum within the broader discourse

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THANK YOU!