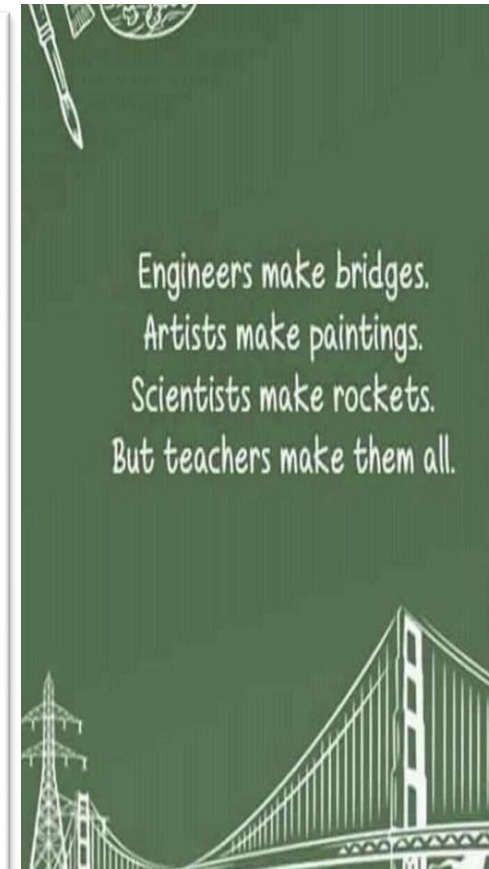




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# THE CRITICAL ROLE OF SCIENCE TEACHERS' VOICES: CAN INDIGENOUS RESEARCH AGENDAS FOSTER TRANSFORMATIVE AGENCY?



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**'Valuing Teacher Voices: Towards a New Social Contract for Education'**

University of Johannesburg, 24 October 2024





# PRESENTATION OUTLINE





# CONTEXT: WHERE FROM, WHERE ARE WE, AND WHERE TO?



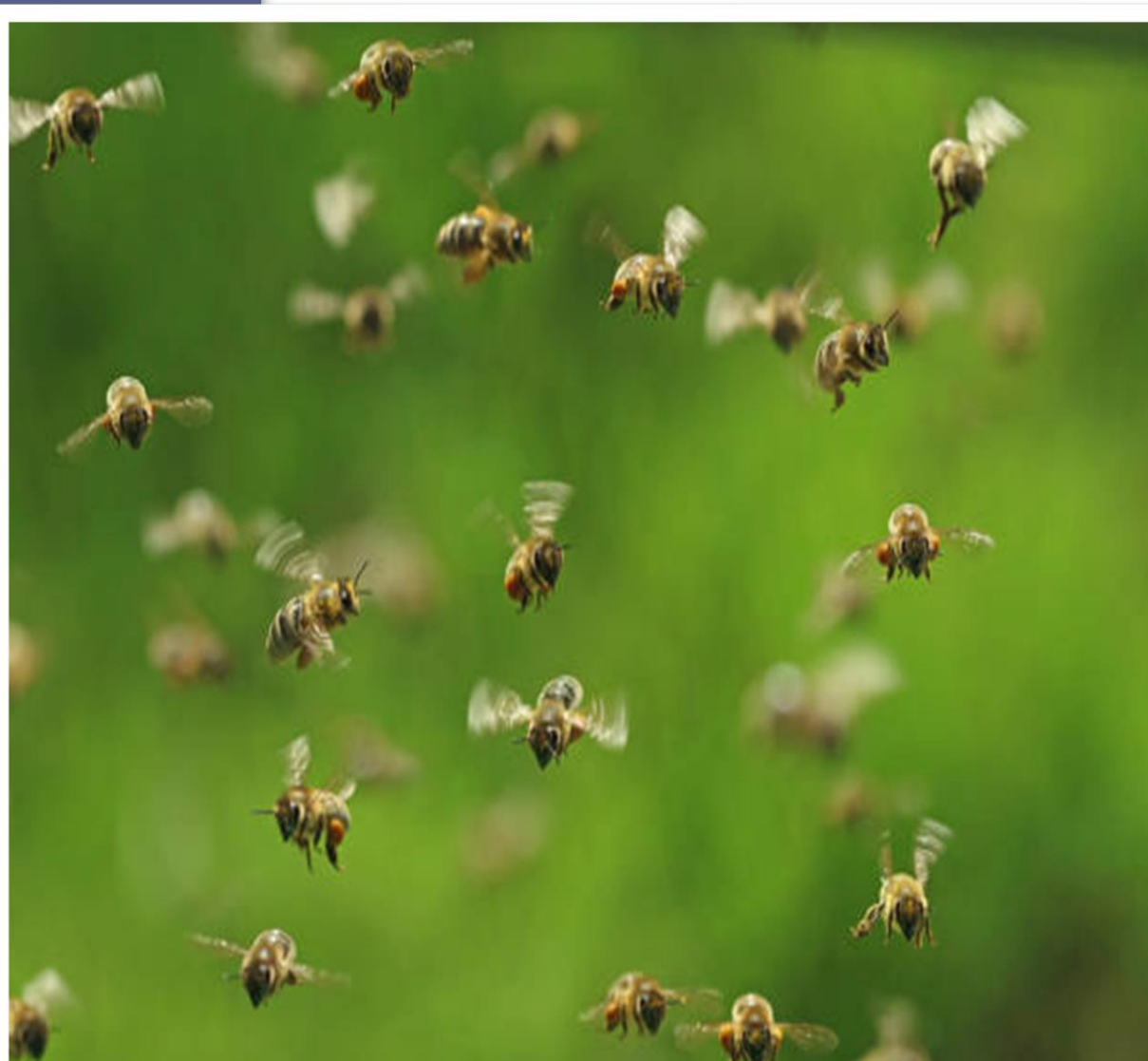
Tensions between curriculum formulation, implementation and attainment still persist.

Colonialism and apartheid denigrated and invisibilised other ways of knowing, thinking and being. In the process, silenced teachers' voices.

Calls for decolonisation and indigenisation of the curriculum and research: Could Ubuntu and resilience be the answer?



# CONTEXT: LIVING WITH NATURE - BEE VISITORS!



- *lindwendwe*: bringing good news to the family.
- Making or doing *Umqombothi* to thank the ancestors.
- A song: “*Ubonqonqoza xa ungena endlwini yam, ubothi molo xa ungena endlwini yama*” [You have to knock when you come to my house, you should greet when coming to my house].

Could it be that we were taught Ubuntu and how to preserve nature?





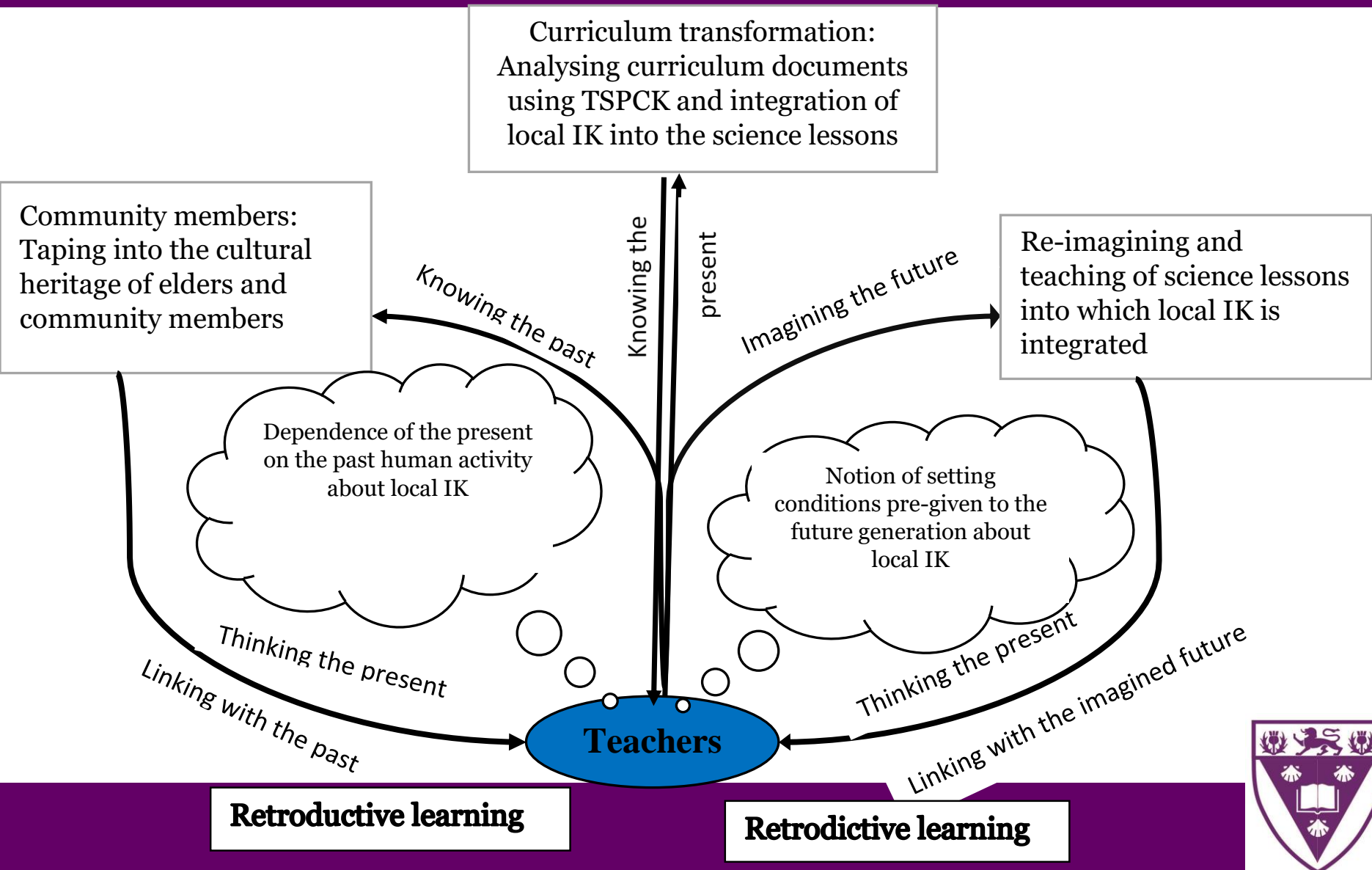
# MY POSITIONALITY AND REFLEXIVITY

- Positionality has to do with insider/outsider issues and how these influence biases in research (Holmes, 2020).
- However, it is more than power dynamics/gradients as the name seems to suggest.
- Instead, it has to do with ethnicity, culture, language, marital status, qualifications and so on.
- On the other hand, reflexivity has to do with reflecting and taking actions throughout the research process.



# MODEL TO OPERATIONALIZE IK INTEGRATION IN SCIENCE

Chikamori et al. (2019, p.9)



# SUSTAINING SCHOOL OF EXCELLENCE THROUGH RESEARCH

The main goal of the study was to leverage the use of a Lesson Study approach how to integrate IK to mediate learning of the topics of waves and sound and redox reactions in a township school.

Clan Names	Age	Gender	Academic/Professional qualifications	Teaching experience
MaNgconde	37	Female	BEd (science and Mathematics methods)	10
Madiba	43	Male	BSc (Physics & Mathematics majors); HDE	14
MaMyeka	55	Female	Senior Primary Diploma, ACE, BEd, currently completing BEd Honours	27
MaMhegeba	57	Female	Senior Primary Diploma, BEd Honours	29
Zizi	59	Male	Secondary Teacher's Diploma	32
MaMpehle	28	Female	Foundation Phase Teacher's Diploma	2
MaMsukwini (a critical friend)	29	Female	BA degree (English and Sociology) and PGCE Foundation Phase	3





# THE POWER OF REFLECTIVE JOURNALS

*The challenge I had before watching the video, I did not know how to start my reflective journal, but the videos made it easy for me, in terms of sharing my thoughts, insights, feelings, emotions and ideas, so I was able to start (MaMhegeba).*

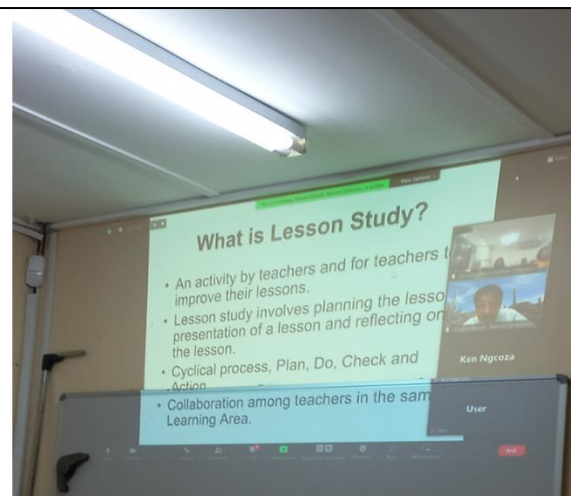


*After we had seen Grade 10 learners reading their reflective journals in a video format, it became clear that as educators we can get to understand if the learners understood the lesson that was taught (Madiba).*





# CAPACITY-BUILDING WORKSHOPS: TOWARDS TRANSFORMATIVE AGENCY!





# TAPPING INTO THE CULTURAL HERITAGE OF INDIGENOUS KNOWLEDGE CUSTODIANS

*It was an eye-opening and informative session; I have learned that indigenous knowledge cannot be separated from our curriculum because there is a strong connection between nature and the ancestors ... today I have learned that there is a strong connection between the moon and the sea through tidal waves.*



*I have observed that Majeke is highly knowledgeable man, his understanding of tides, the moon playing a great part in wind speed and tides is so amazing. I did not know that the moon had anything to do with tides in the sea, he opened my eyes, I have*



# TAPPING INTO THE CULTURAL HERITAGE OF INDIGENOUS KNOWLEDGE CUSTODIANS



*“Ukuba amanzi aphele isonka singekavuthwa, ungaze ugalele amanzi abandayo, galela amanzi abilileyo”* (If the water runs out before the bread is properly cooked, never add cold water, add boiling water instead). The teachers then asked why they must not add cold water but boiling water. *“Kaloku sizakunyela, sibemanzi ngoba usibuyisela umva, xa ugalele amanzi abilileyo uyasithuma sivuthwe kakuhle”* (Because if you add cold water that would delay the cooking of the bread and the final product would be damp) (MaMcirha).

Madiba exclaimed and said: *“Le Chatelier’s Principle, yes I have found a simple way to explain the effects of changes at equilibrium”*. Le Chatelier’s Principle states that if a dynamic equilibrium is disturbed by changing the conditions, the position of equilibrium shifts to counteract the change to reestablish an equilibrium.



# REFLECTIVE SPACE FOR TEACHERS AND INDIGENOUS KNOWLEDGE CUSTODIANS



When I was invited to come and show the teachers how to make homemade bread, I did not know that I would be contributing to education, and now when I hear the teachers speaking like this I am very happy and I feel appreciated (MaMcirha).

Thursday, 26 January 2023

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## Talk OF THE Town

### Principals share secrets to matric breakthrough

Ndlambe schools credit hard work, extra lessons as they celebrate best-ever results for class of '22

**FATH QINGA**  
Ndlambe school principals say a dedicated staff, extra classes and support from the community and other stakeholders is the winning formula for the success of the 2022 matric results.

Singing their way along the road in the rain at 11 pm on Thursday in anticipation of their results was how the celebrations started for Kuyasa Combined Schools' class of 2022.

The next day, a motorcade followed, celebrating the school's first 100% matric pass. Headmaster, Xolani Mayana, is the first principal to achieve this feat since the school's first matric exams in 1998.

Mayana took over the reins in 2008 following a 20% pass rate in 2007. He managed to improve the pass rate to 55% in 2008. From thereon, the school's performance got better and better each year.

"I start off with thanking God, their own inventor so that if the child doesn't have a parent at home, we step in", he said. Mayana thanked the parents who allowed their children to attend extra classes.

"Wherever we call in the parents for support, their response has been amazing," he said. "We are at a stage now where the school has branded itself as the school of choice and a school of excellence in the area." "We are confident that the best is yet to come. I believe that God will give us a new blessing each time," said the proud headmaster.

The school's top performing learners, Ndyamthanda Mphurwana and Kingawo Mdingi also received the MEC's award for being the Sarah Baartman District's top two achievers in the IEC category.

They will both be furthering their studies at Rhodes University.

"Without bragging, the quality of

"Over and above that, we have a team which works with unity and in coherence," said Mayana. He praised his staff for going beyond the call of duty and sacrificing their own time to ensure the learners pass.

"We have a mentoring programme at the school where

Turn to PAGE 2





# TAPPING INTO THE CULTURAL HERITAGE OF INDIGENOUS KNOWLEDGE CUSTODIANS





# TEACHERS' VOICES MATTER!

It is easy to say that one needs to **apply IK in your classroom and link science in the classroom to everyday experiences**. But it is something different to apply what you say!

Interesting to this process for me was to try and identify all **science concepts** and **skills** (estimation, ratios, separating substances, fermentation, test for CO<sub>2</sub>, etc.) without Mama Joyce knowing how **scientific** she actually is.

Except for the scientific part I also got a bit of **life skills** during this process. Never judge before you have proof!

When reflecting on the whole process of making *Umqombothi*, I can only say WOW, an **experience of my life!**

It gave me a sense of “**belonging**” to a special group of people! As part of the western culture, I am not really aware of such **rich cultures** and beliefs in other cultures.

The “**storytelling**” that accompanied the process was really interesting and informative.

# SUCCESS STORIES: TEACHING AWARDS IN 2019 & 2021



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# THREE DISTINCTIONS FOR MASTERS: WHY ANONYMITY?



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# FOOD FOR THOUGHT – RETELLING THE STORY!

There was a farmer who grew excellent quality corn. Every year she won an award for the best-grown corn. One year a journalist went to interview her and learned something interesting about how she grew the corn. The journalist discovered that the farmer shared her seed corn with her neighbours.

*“How can you afford to share your best seed corn with your neighbours when they enter a corn competition with you each year?”* The journalist asked.

*“Why sir”,* said the farmer, *“Didn’t you know? That the wind picks up pollen from the ripening corn and swirls it from field to field. If my neighbours grow inferior corn, cross-pollination will steadily degrade the quality of my corn. However, if I am to grow good corn, I must help my neighbours grow good corn too”*.

The morale of this story is that, those who want to live meaningfully and well, must help enrich the lives of others (including bees), for the value of a life is measured by the lives it touches. Herein lies the importance of Ubuntu!



“To reopen the future of our planet to all who inhabit it, we will have to learn how to share it again among humans, but also between humans and nonhumans, between the multiple species that populate our planet. It is only under these conditions that, becoming aware of our precariousness as a species in the face of ecological threats, we will be able to overcome the possibility of outright human extinction opened up by this new epoch, the epoch of the Anthropocene”.

Achille Mbembe (2021, p.39)



# CONCLUDING REMARKS



- Ubuntu storytelling entails people sitting around the fire getting equal heat.
- Knowledge and wisdom are passed on in the form of stories.
- Ubuntu entails connectedness and humble togetherness.

Liveve (2022)



**SIYABULELA! KEA LEBOGA! KEA LEBOHA! THANK  
YOU! BAEI DANKIE!**

***“Nazi iinyawo, nantsi indlela”***  
**(Here are the feet, here is the road) (5 year old)**

**If you want to walk fast, walk alone.  
If you want to walk far, walk together.**

- African proverb -





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