



## IB AFRICA, EUROPE & MIDDLE EAST REGIONAL CONFERENCE 2014

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# Indigenous Knowledge Systems – Crossing Epistemological Boundaries in Education

By Ruairidh C MacKenzie





# Compass International School Doha

A NORD ANGLIA EDUCATION SCHOOL

## IB ESS iGCSE Environmental Management





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- ***“Real freedom will only come when we free ourselves of the domination of Western culture, Western education and the Western Way of being.”***

– Mahatma Ghandi

- ***“The school has been the main tool of the state to destroy the culture of Indigenous people.”***

– Public Declaration of Indigenous People Oxaca,  
Mexico 1997

If you wanted to change an ancient culture in a generation, how would you do it?  
***You would change the way it educates its children.***

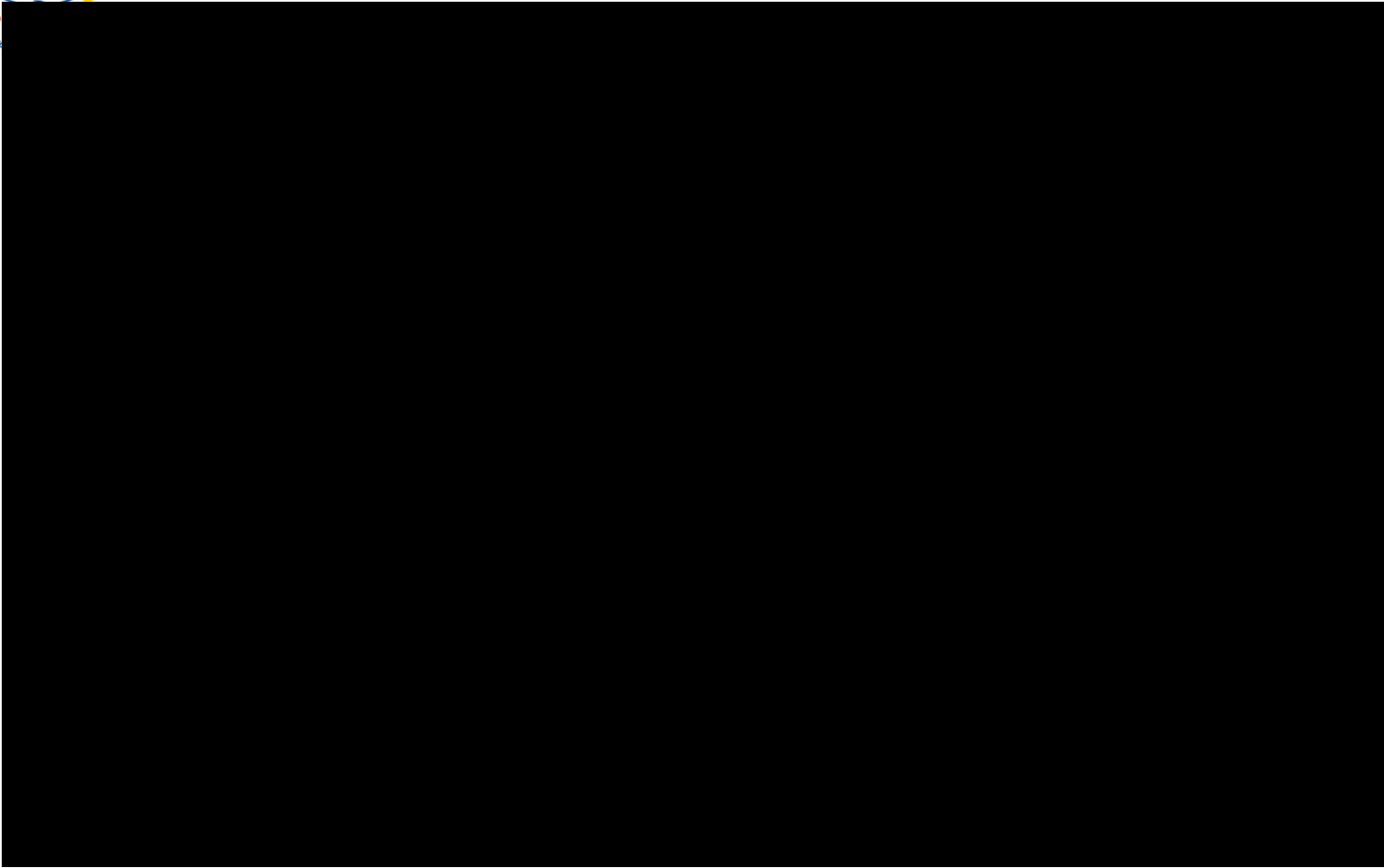
- [www.schoolingtheworld.org](http://www.schoolingtheworld.org)



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*“Interestingly, the modes of learning characteristic of many indigenous cultures have the kind of flexibility, open-endedness, and intuitive nature that may be better suited to the organic growth of human intelligence and creativity than the modern regimes of state-standardized curricula and testing”.*

Carol Black- Blog [www.schoolingtheworld.org](http://www.schoolingtheworld.org)



Schooling the World – The Whiteman’s Last Burden



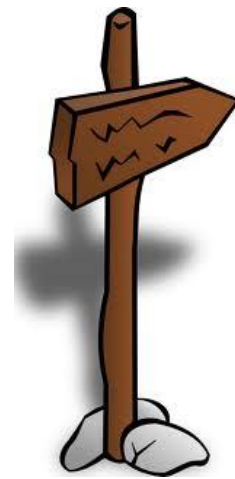
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- Why might (some) Indigenous groups reject modern schooling?
- Do we have anything to learn from indigenous education models?
- Where does the IB, ESS and TOK fit into all this?



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## Part 1

- Introduction
- Establish concept of different ways of knowing

## Part 2

- Identification of IK and 'Universal Knowledge' – divergence of knowledge systems
- Justification for reevaluation IK – post colonial framework

## Part 3

- Implications of divergence in education



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## Part 4

- Crossing epistemological boundaries in education – BE/ICBE

## Part 5

- Case study: Incorporating IKS into modern school curriculum - Local Curriculum Mozambique findings

## Part 6

- Implications of findings for Western Education
- What can we learn from IE models?
- How does IB, ESS and TOK fit into this?
- **Question and Answer**





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# Definitions of terms:

## Cognition

the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.

[www.thefreedictionary.com](http://www.thefreedictionary.com)

## Epistemology

"the nature of human knowledge and understanding that can possibly be acquired through different types of inquiry and alternative methods of investigation."  
(Hirschheim et al., 1995:20)

## Ontology

"a branch of philosophy concerned with articulating the nature and structure of the world."  
Wand and Weber (1993:220)



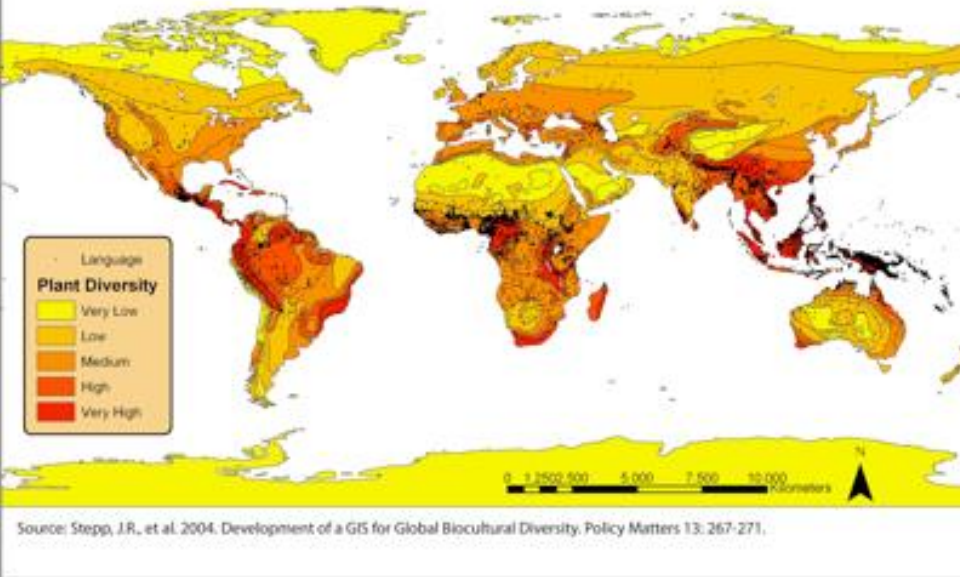
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# Background

## Bio-diversity/ethno-diversity

## Cultural relevancy

Plant Diversity and Language Distribution

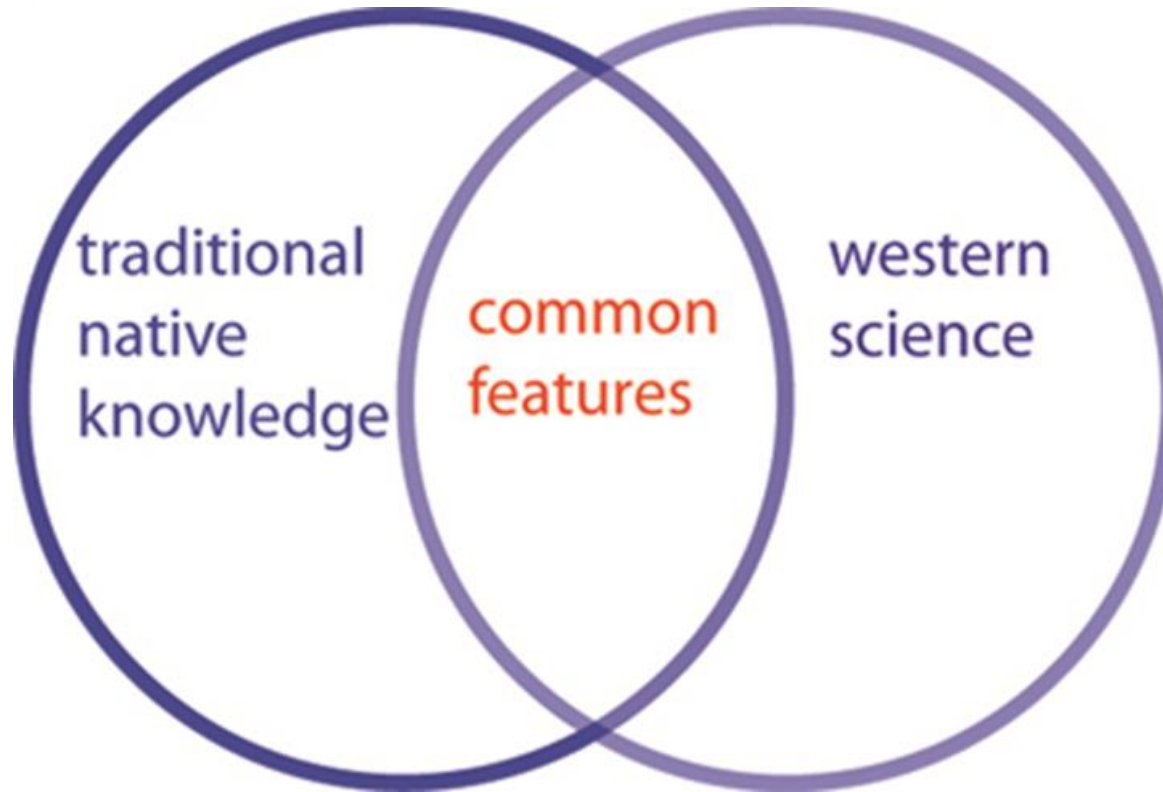


- IK and IE in development of local communities
- Counter-point to uniformity of global education models



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# Integration of both models



***“a need to open up new moral and cognitive spaces which constructive dialogue between people and between indigenous knowledge systems (IKS) can occur”***

Visvanathan 1997 cited in Odora-Hoppers 2002:4



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“The concept of knowledges, in contrast to a single knowledge, assumes the existence of multiple ways of seeing the world” (Spring 2009:145).

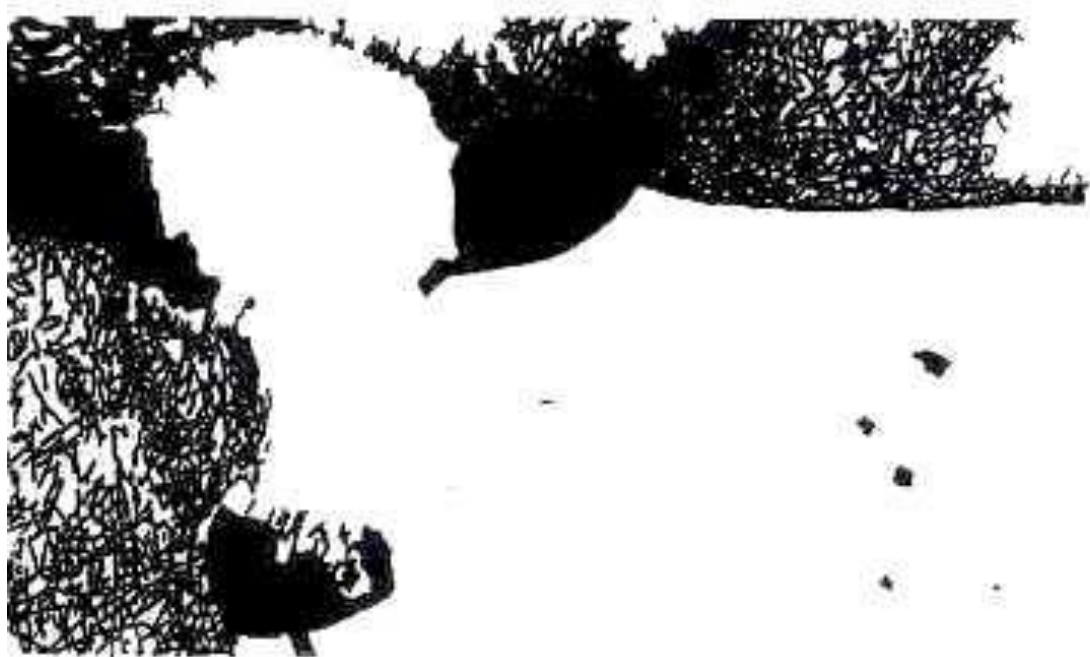




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# Perception – What do you see?





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# Perception – What do you see?





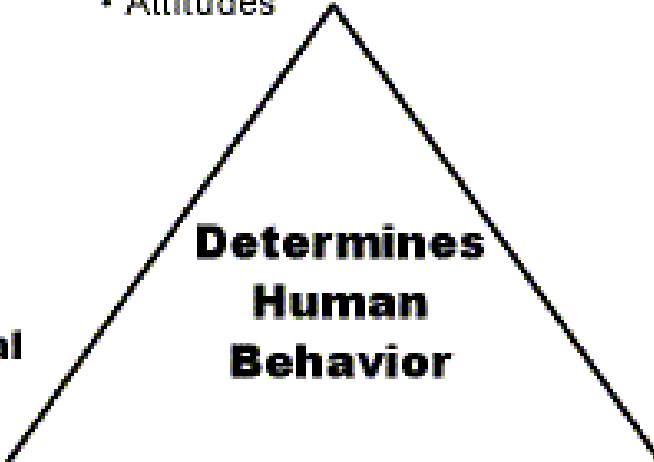
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# 'Grounded Cognition' – cultural transmission of knowledge

## **Cognitive Factors**

(also called "Personal Factors")

- Knowledge
- Expectations
- Attitudes



**Determines  
Human  
Behavior**

## **Environmental Factors**

- Social Norms
- Access in Community
- Influence on Others  
(ability to change own environment)

## **Behavioral Factors**

- Skills
- Practice
- Self-efficacy



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# Part 2

## Clash of Knowledge Systems





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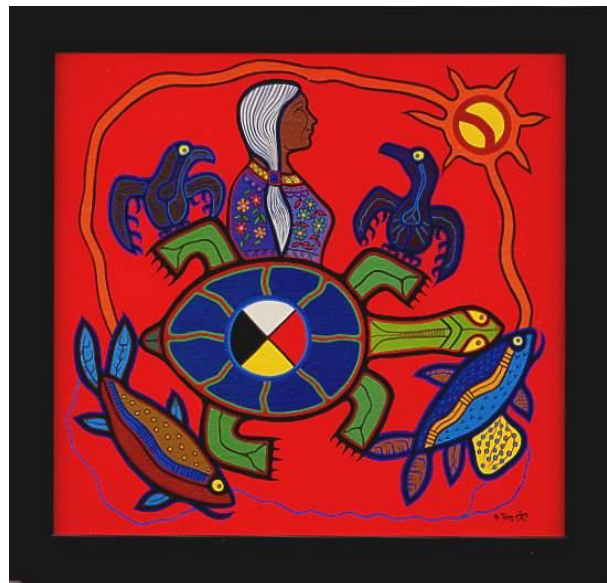
## Indigenous people - characteristics:

- long-term occupancy of the land
- tribal organization and subsistence-oriented production

a social and cultural identity distinct from dominant societies

Spring 2009:172

# Indigenous Knowledge Systems



IK as **'holistic'** knowledge and in which humans, nature and the spirit world are all interconnected

Spring 2009: Breidlid 2009: 143; Odora-Hoppers 2002: 30



# Soil and Soul - Land and Community





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## 'Seeing' 30 secs



[www.survival.org](http://www.survival.org)



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## A Thousand Suns – (0.00-25)



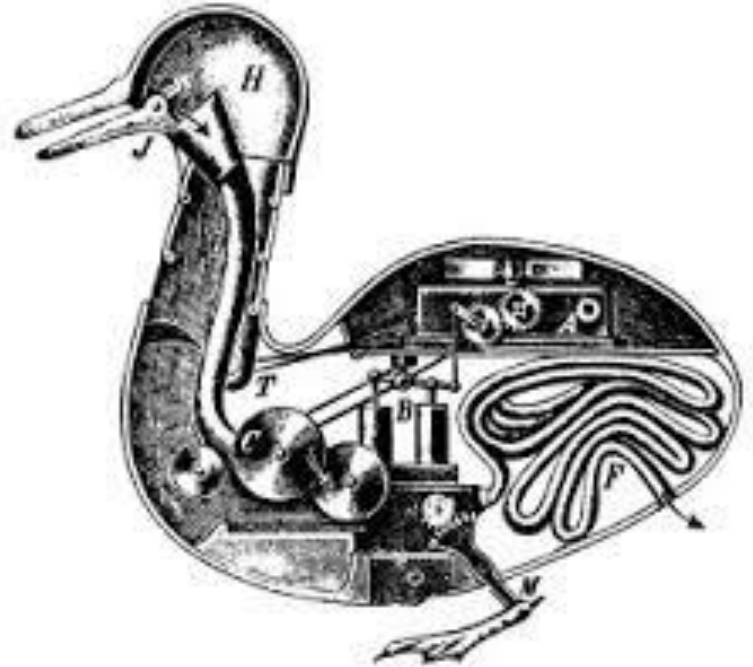
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## Indigenous Knowledge Systems



Circle of life

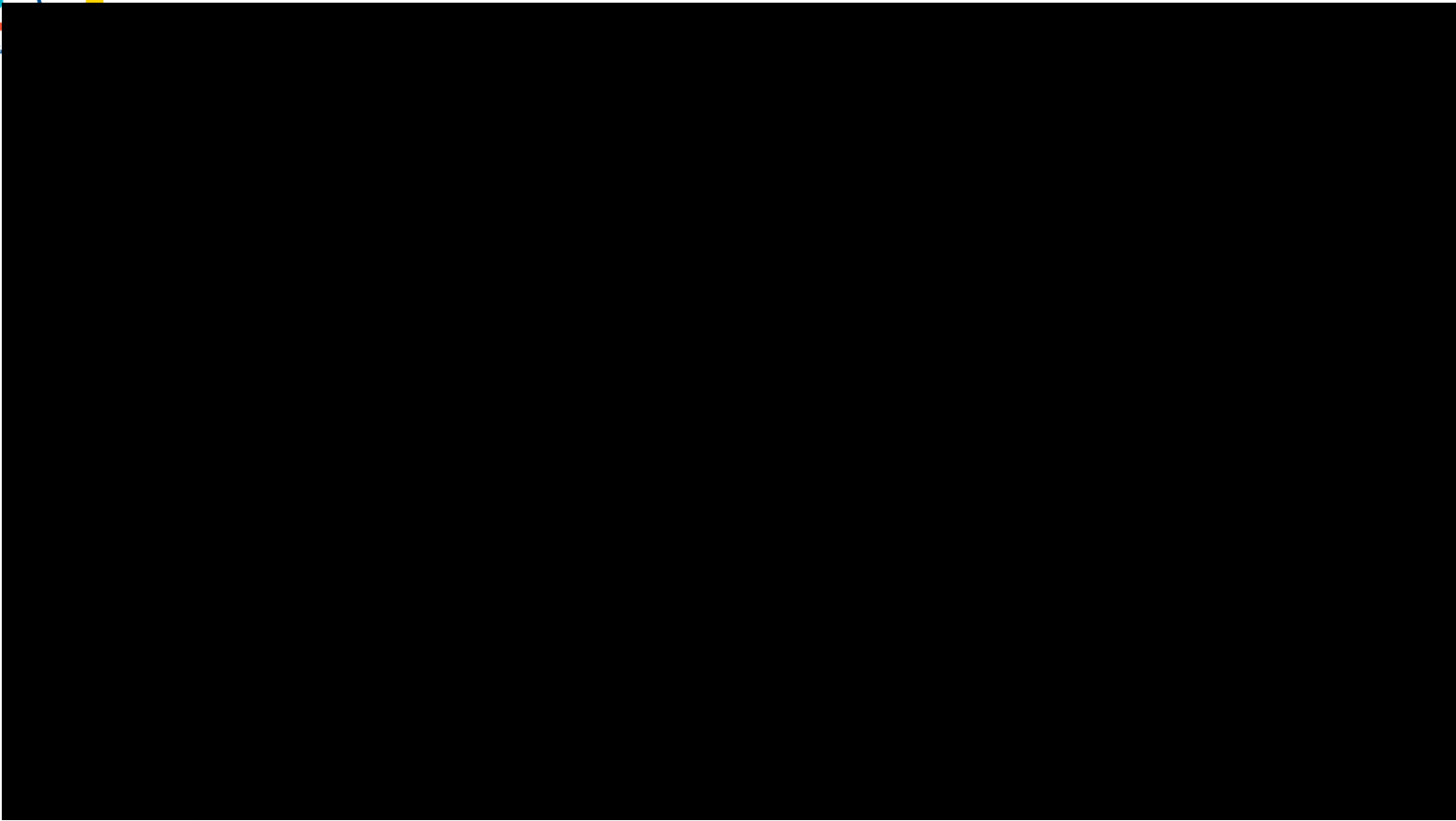
## Western 'Universal' Knowledge





# Legitimisation of IKS – Post Colonial framework

- **RACISM**
- **CULTURAL IDENTITY**
- **HYBRIDSM**
- **AGENCY**



The Things They Said [www.survival.org](http://www.survival.org)

2.21

- New unbalanced relationships in globalisation & global capitalism



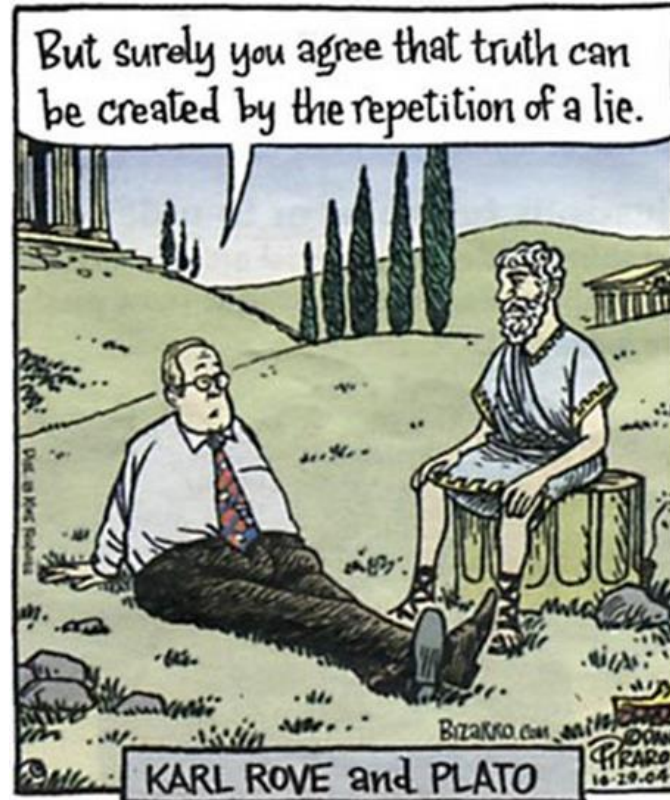


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**“Non-western societies’ knowledge systems that sustained them are now taken as obsolete. In the rush towards modernity, we, the newly modernised have not wanted to give those on who we have imposed the signifier of the obsolescence a voice.”**

**(Odora-Hoppers 2002:3)**

- Primacy of the written word
- Strategic disempowerment of traditional societies



*“In this system a professional class of intellectuals serves the structures of organised domination by assessing, labeling, naming and constructing knowledge and reality .”*

(Odora- Hoppers 2002:15)



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# Hybridism



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- Disproportionate influence of Western 'Knowledge' & cultural norms
- Overall negative impacted indigenous people in many ways



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*'I say what kind of development is it when the people live shorter lives than before? They catch HIV/AIDS. Our children are beaten in school and won't go. Some become prostitutes. They are not allowed to hunt. They fight because they are bored and get drunk. They are starting to commit suicide. We never saw that before. Is this development?'*

**Roy Sesana Gana Bushman, Botswana**  
**([www.survival.org](http://www.survival.org))**



# Question of Agency?



- Edward Said's *Orientalism* dichotomy between the 'coloniser' and the 'colonised us'
- Indigenous people as passive
- Danger of talking on behalf/for the other – 'Cultural logic of predation'



## **Stone Age tribe kills fishermen who strayed on to island**

One of the world's last Stone Age tribes has murdered two fishermen whose boat drifted on to a desert island in the Indian Ocean.

The Telegraph Saturday 4<sup>th</sup> October 2014

## **Face to face with Stone Age man: The Hadzabe tribe of Tanzania**

Daily Mail 20<sup>th</sup> July 2007

- IKS taken as **STATIC**

(Nel 2006:102)

*“African worldviews and wisdom look like myth and superstitious metaphysics”*

(Breidlid 2009:142)



Primitive [www.survival.org](http://www.survival.org)

30 secs



- Re-evaluation of IK is there justified within the context of sustainable development because,

*“it poses and alternative view to narrowly-focused scientific disciplines which may neglect the interconnectedness of natural phenomena”*

(Breidlid 2009:242)



## QUESTION:

- Which lens' should IK be engaged within education, to prevent it from being de-contextualised from its own rationality through the lens of an imposed way of knowing?



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# **Part 3**

Implications of clash of knowledge Systems on Education

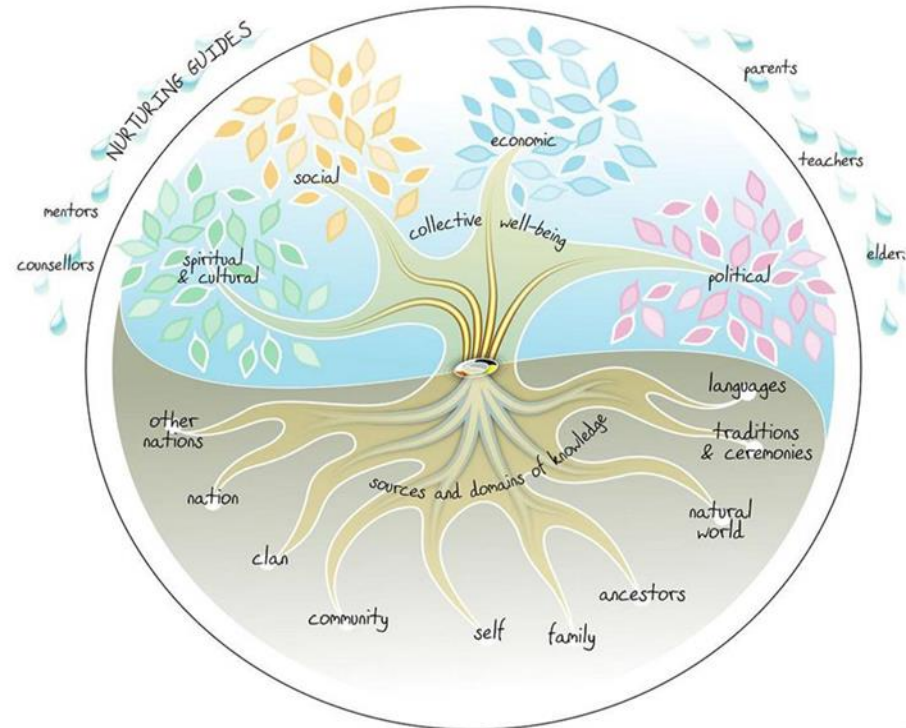


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# The Traditional - Modern Dichotomy



First Nations Holistic Lifelong Learning Model





## Premise of 'Western knowledge'



- Emphasis on universalism and compartmentalisation of knowledge
- At odds with holism of traditional knowledge

*“..the African child finds him/herself having to cross the cultural border between his/her African world view to that of the school science as he/she learns scientific concepts presented to him or her in the classroom”*



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# Problem of single language

*'For many people ... the loss of language brings loss of identity and sense of community, loss of traditional spirituality, and even loss of the will to live'.*

**Daniel Everett linguist lived with Pirahã Brazilian Amazon**

[www.survival.org](http://www.survival.org)

**school failure  
high drop out**

**cultural alienation  
rejection of the community**



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# Story so far..

- Existence multiple ways of knowing
- Recognition of IK as different to universal knowledge
- Need to reevaluate IK due to violence of colonial and neocolonial encounter through globalisation
- IKS as dynamic and hybridised



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- How can IK be transported into mainstream education?
- Should it be transported to the classroom?
- Due to 'holistic' nature of IK would it lose its intrinsic value as soon as it is removed from the community in which it is embedded?



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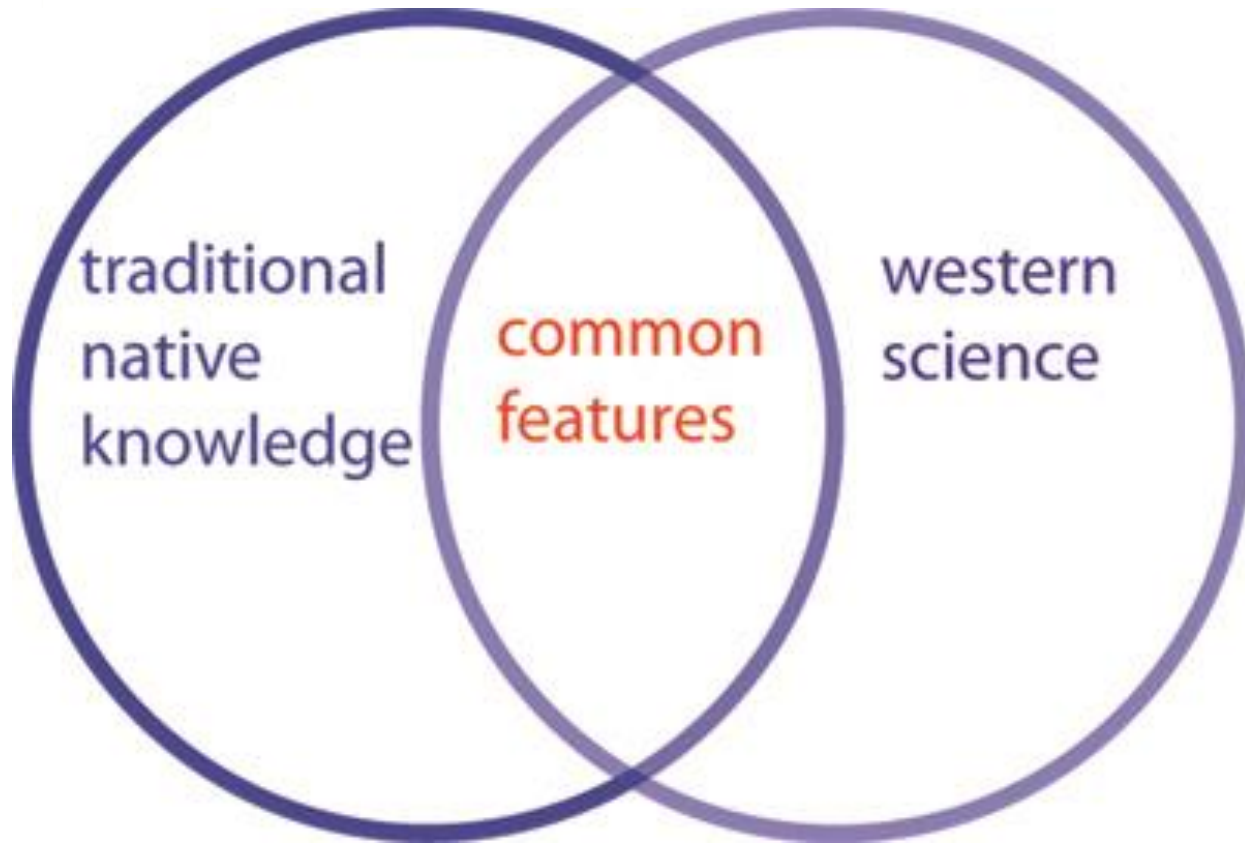
# PART 4

Crossing Epistemological Boundaries in education





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- **Bilingual Education (BE)** - the instruction given to students of minority groups in their native language, with gradual introduction of a dominant language
- **Intercultural Bilingual Education (IBE)** - aims to incorporate minority groups own language, culture and history and knowledge base into the curriculum and classroom instruction thereby increasing cultural relevance



# Importance of Mother Tongue



*“place where the relationship of exclusion and domination is crystallized, but also where these relations are negotiated, produced and reproduced”*

**Semprini 1999: 67**

- Key to communication in classroom
- Single language still dominates education in many LEDCs
- Tension cultural relevancy vs national unity
- Dilution of cultural differences for sake of EFA



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## Objectives of BE and IBE:

- **LEARNING and PRESERVATION OF IDENTITY**
- **Instrumental use'** of both L1(mother tongue) and IK in basic education
- Link to Human capital theories of development and education
- Bilingual element successfully employed VS intercultural aspect was side-lined



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# More of the same?



Emphasis on technical aspects of IK within a modern curriculum

= 'a continuation of the same exploitative and unequal relationship between the 2 systems'





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# RECAP:

## ACTIVE COMMUNITY PARTICIPATION

### THE USE OF MOTHER TONGUE / L1

- the need for *the reciprocal valorisation amongst knowledge systems*

(Houtondji cited in Odora-Hoppers 2002:V)



## PART 5

The Local Curriculum - Mozambique  
'pluri-lingual and pluri-cultural reality'





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# Local Curriculum Mozambique



República de Moçambique  
Ministério da Educação





# Ideological Background to LC



República de Moçambique  
Ministério da Educação

a component of the LC making 20% of the curriculum of the total time for the teaching of each discipline. This component is constituted by contents defined locally as being relevant, for the integration of the child into his community

(INDE 2003 cited in Castiano 2006:16)

- **OBJECTIVE:**

...is to train/form citizens capable of contributing to the bettering of their life, the life of their family, of the community and of the parents, taking into consideration local knowledge from the communities where the school is situated



(INDE 1999 cited in ibid 2006:16)

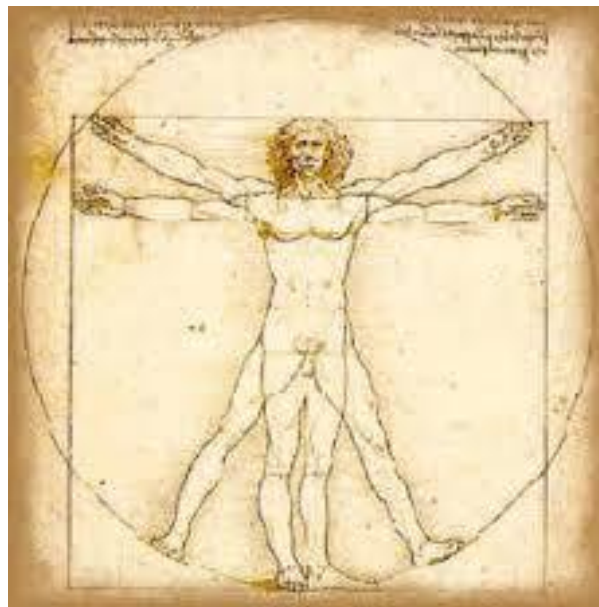


**“Open a space for local knowledge to enter into basic education.”**

Castiano 2006:16



# Re-Evaluation of 'Universal' Science



- African countries reduced to exporters of both primary materials and empirical data to Western countries
- monolingual education system in Mozambique facilitates but incentivises this extractive model and the continuing exclusion of the majority of its citizens
- **imitate Western Science and technologies**



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# How to elevate the status of IK?

“Local solutions to local problems”





# Search for African Epistemology





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# LC - best of both worlds?





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# Future of the Local Curriculum

- need “to explore immediate ways that can have an impact on the bettering of lives of the people through school and the other to explore the spiritual life of the communities”  
(ibid 2006:18)
- “..under equal conditions and an atmosphere of cultural tolerance”  
(ibid 2006:18)



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# Research Questions

- What is the current value of IK amongst teachers and community?
- How far is community still involved?
- How much is L1 being used?
- How much are more intangible aspects of IK (diffused spirituality) being addressed?
- Has LC managed to reduce the negative effects of divergence between traditional and modern knowledge systems?



# Field work – 9<sup>th</sup> of April and 20<sup>th</sup> of April 2011

- Qualitative Research
- Pedagogical University of Maputo
- Centre of Mozambican and Ethno-sciences (CEMEC)
- National Institute for the Development of Education (INDE)
- School 1 **Nhamadjessa Primary school** (semi-urban)
- School 2 **Chichira Primary school** (rural)





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# Summary of findings by Theme



# Conceptualisations of IK

- Much IK is knowledge that we have for example, from the local reality ..... Er.. if a child grows to know anything, wants to learn to speak, he begins to deal with living with what he sees locally..... So practically, local knowledge is the knowledge that the child or any individual learns from their birthplace in order to grow and take into account the rest of the world isn't it?

(HP in S1)

“modernised traditional knowing systems” (Maila & Loubser 2003:278)



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# Findings by theme:

- **Theme 1: *Value of IK by Stakeholders and the Relationship with the LC***
- **Theme 2: *The Local Community and the LC***
- **Theme 3: *The Use of Local Languages in the LC***
- **Theme 4: *Dealing with Divergence between Different Ways of Knowing***
- **Theme 5: *The Challenges to IK and the Impact of Globalisation***



# Theme 1: Value of IK by Stakeholders and the Link with the LC

“Ultimately what we are doing is the following, we want to teach a child about a subject then we look for what the child already knows then can introduce the LC in the place (in the New Curriculum *sic*) that we want to teach”

(Teacher S2)

“Our culture cannot be overlooked as a whole ... it has to be valued and culture is the basis of everything....”

(Teacher S1)

“IK has not entered into the school with its’ own authority....that it has entered but in submission to the pre-existing traditional curriculum framework”

(Head of Ethno-Sciences University of Maputo)

# Cont....

“We learn Science as a way of surviving not because we want to..... then Science is not a way of life but a way of surviving.”

“..in fact we have not a science, we have various sciences, we have various ways of life and being human we have to share, learn from and teach others what we know....”

“during the struggle to defend local culture the new knowledge is left out ..... it holds people back.”

**(Head of Science Maputo University)**



- I. usefulness of its practises transmitted through the LC to provide children with important life skills
- II. provide an access point to subjects in the rest of the curriculum – easier
- III. identity and preservation of disappearing local cultural practises (dilution)



## Theme 2: The local community and the LC



**“The culture of community is the same one as of the school.”**

Head Teacher S2







# *Theme 3: The use of L1s in the LC*



## Theme 4: Dealing with divergence between different ways of knowing

“there exist certain initiation rites that enter into contradiction with modern education. But in terms of cultural values in respect to elders or whichever situation is normal for society and others that are useful for children but certain practices collide with our modern education.”

(Head Teacher S1)

“I think they (children *sic*) end up suffering. They end up feeling a pressure.....er... a pressure that they end up feeling because they have a thought which corresponds with the region and they have another type of thought at school which is different. Then they end up..... I mean..... getting it but it is a big effort to do it. It is a sacrifice for them.”

(Teacher S2)

“if a child fell ill it may be attributed to local beliefs or myths, not because they have probably drunk dirty water but because it was drunk from a forbidden place.”

(Teacher S1)

# Theme 4: Dealing with divergence between different ways of knowing



## Theme 4:

# Dealing with divergence between different ways of knowing cont...

- impartiality and flexibility of the teachers as mediators between knowledge systems

“it is necessary to value it in order that you may offer both perspectives .....if you tell the people that such and such doesn't exist you end up entering into the divergence with them.”

(Teacher S1)

- Process of editing – ‘Systemisation of data’ – e.g. looking at rituals

“..in a way to see to what extent this traditional ceremony helps us or hurt us, right?... I think it's a point of view isn't it? It has a value because it has an educational value right?”

(GTZ Operative)



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# *How to reconcile divergence?*

**THINK AND BEHAVE ACCORDING TO YOUR LOCALE!**

**S1 - LC is to preserve and even rescue IK**

**S2 - maintaining and creating a discussion space between the two ways of knowing**



## Theme 5: Impact of Globalisation on IK



“I think that it is preventing in a way that is to say our culture and our own development because children very often now don't have time to discuss it, those stories, our history because they are running to watch films, soaps. They think it is better to imitate what they see in soap operas than our own culture.”

**Teacher S1**



“..whoever is here (in the community *sic*) already has a garden, has banana trees, has a small holding. So to go there (the city *sic*) to do what?”  
(Teacher S2)

“I am from here. Then I left here to study there (the city *sic*). Then after studying there other children don’t want to come back because they get money and manage to buy stuff and they stay there but my-self him, him and him we are from here. We came back or rather we are here to develop this area.”  
(Teacher S2)





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# RECAP/ Conclusion

**“The more you actively involve the community in school, the more IK is valued implicitly and the better it can be integrated into formal education to the benefit of all.”**





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- “IK needs to be brought out from the wings of the main curriculum and placed centre stage with modern ways of knowing”.
- “This process needs to be paralleled with a re-conceptualisation of ‘universal’ scientific knowledge so that it humbly acknowledges the myriad cultural perspectives that have contributed to it.”

(Castiano 2006)



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*Who really benefits when every child on the planet learns in the same way?*



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## Part 5

- Implications of findings for Western Education
- What can we learn from IK and IE models?



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## What does the world lose when a tribal language is lost?

“It loses another way to solve problems of how best to live in the world. It loses knowledge of the earth and alternative relations to the earth and alternative categorizations of the world around us.”

*Daniel Everett linguist lived with Pirahã Brazilian Amazon*  
[www.survival.org](http://www.survival.org)



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# Agree or disagree?



- *“Our schools are, in a sense, factories, in which the raw materials – children – are to be shaped and fashioned into products... The specifications for manufacturing come from the demands of 20th century civilization, and it is the business of the school to build its pupils according to the specifications laid down.”*

**Ellwood P. Cubberly, Dean, Stanford University School of Education, 1898**

- *“I think the way western education has grown over the last few centuries, especially with the rise of industrialization, was basically **not** to create human beings fully equipped to deal with life and all its problems, independent citizens able to exercise their decisions and live their responsibilities in community, but **elements** to feed into an industrial production system.”*

**Vandana Shiva, [www.schoolingtheworld.org](http://www.schoolingtheworld.org)**



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Do you agree with the following as  
important in education? **Discuss!**





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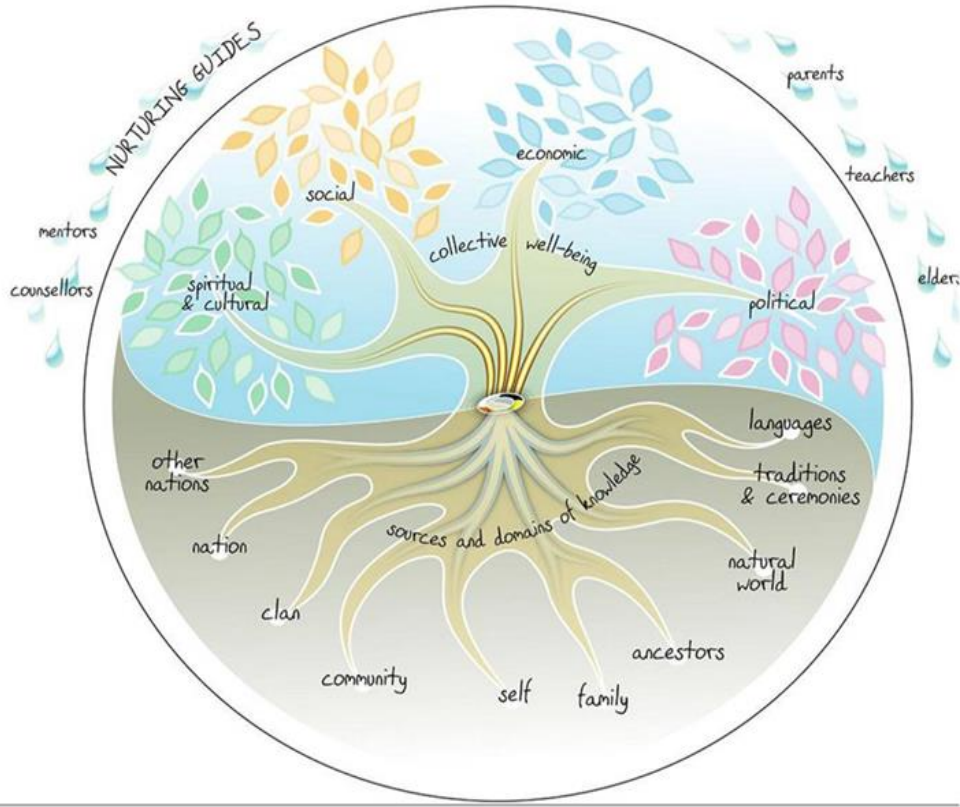
**What as educators, can we do to make our school programmes more like Indigenous Education models?**



# Does IB make Holistic Thinkers?



First Nations Holistic Lifelong Learning Model







# IK & Environmental Systems and Societies



“An ancient culture is an ecosystem, a complex web of relationships between human beings and the land they live on. As in every ecosystem every element is intertwined with all the others. And as in any ecosystem sudden changes have unpredictable effects.” (Schooling the World)

The systems approach of the subject raises some points of comparison and contrast with conventional models of scientific method – ‘holistic’ rather than reductionist



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“Human cognitive diversity *exists for a reason*; our differences are the genius – and the conscience – of our species.”

Carol Black <http://schoolingtheworld.org/a-thousand-rivers/>





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# Links

- <http://schoolingtheworld.org/big-box-schooling/>
- <http://www.theeconomicsofhappiness.org/>
- <http://www.survival.org>
- <http://www.theecologist.org/magazine/resurgence-ecologist/>

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