Living labs and Ecomuseums:
integrating sustainability in higher education

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Sustainable Development:
the global response to managing the challenges

- environment
- economic
- <u>social/culture</u>

Sustainable Development

Plus concepts of:
- Intergenerational responsibility
- Need verses greed /equity
- Social justice, etc

Concepts Within SD

- Not anti-development in general but "precautionary principle" based

- Not prescriptive

- More a GPS showing where we are and the options

- But we must select the general destination

- SD is about learning and making wiser choices

The 4 Major Thrusts of ESD
(*Education, Public Awareness, and Training*)

1   Access to and retention in a quality education

2   Reorienting existing education to address sustainability

3   Public awareness and understanding of sustainability

4   Training programs for all sectors to address sustainability

Agenda 21 -92, UNESCO-96, UNCSD -98, JPOI-2002

UNU Regional Centres of Expertise

	Messengers				Local Information
Non Formal	**Formal**	**Informal**			Sources
Ngo's	Tertiary	Media			Regional/National
Zoo/etc.	Secondary	Peers			Local Government
Gov. Agencies	Elementary	Society			Private Sector
Corp Training	Preschool	Life Exp.			Research (HE, NGO) etc.

Outcomes

- Improved academic outcomes
- More knowledgeable/supportive citizenry
- More sustainably oriented production and consumption
- Perhaps a shift in behaviour as learning is relevant and in scale etc.
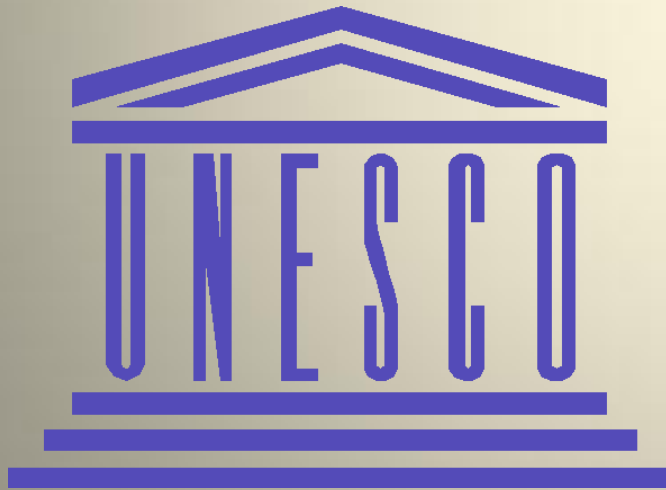- Process is crucial

RCEs - A Global Initiative

1/ The United Nations Decade of Education for Sustainable Development (2005 – 2014)

2/ Proposed Global Action Plan ESD (2015-2020)

Priority action areas

1. Advancing **policy**
2. Transforming **learning and training** environments
3. Building capacity of **educators and trainers**
4. Empowering and mobilizing **youth**
5. Accelerating sustainable solutions at **local level**

Global Action Programme

Where do we stand?

"We resolve to promote education for sustainable development ... beyond the United Nations Decade of Education for Sustainable Development."

RIO+20

- ✓ *Increased presence of ESD internationally and nationally.*
- ✓ *Major challenges:*
    - from pilot to policy
    - from small scale to large scale
    - from margin to mainstream
- ✓ *A Global Action Programme to scale up ESD.*
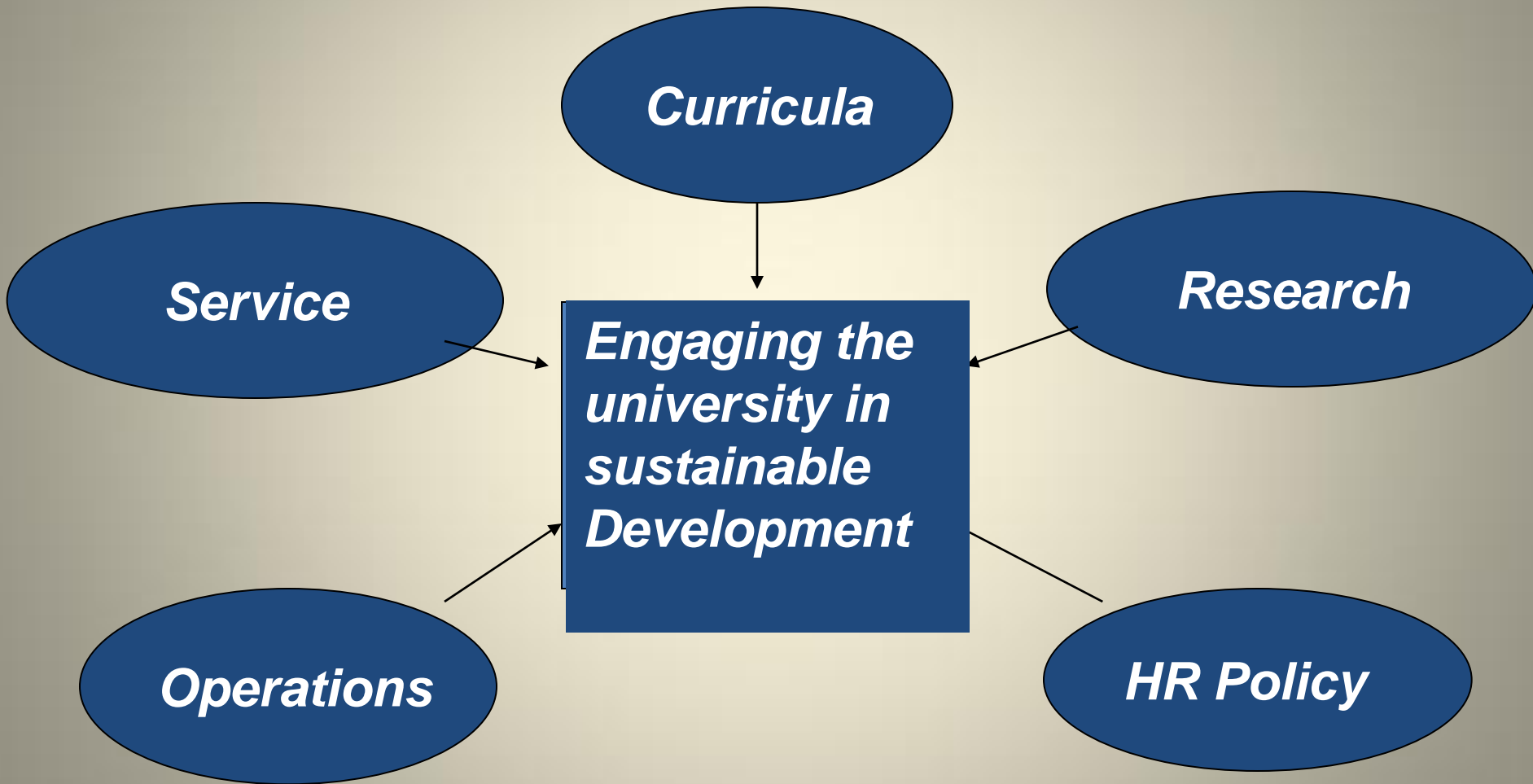
Role of Higher Education

3% - 80%

Responsibility/response

Systemic Approach

Curricula

Service

Research

Engaging the university in sustainable Development

Operations

HR Policy

Sustainability in HE Culture

- Education & Research

Curriculum reorientation

Community service/engagement (faculty/students)

Research foci

- Campus Operations

Climate change consideration (buildings, purchasing…)

Energy, water, waste

Transportation

Maintenance – Grounds, buildings

- *Planning, Administration & Engagement*

Human Resources – hiring, promotion

Assessments & Ratings

Coordination & Planning

Diversity & Inclusion

Funding

Endowments and Investments

Potential "Living Labs" and "Ecomuseums" are Everywhere

- The university itself

- Urban Neighbourhoods

- New subdivisions

- Traditional communities

- Indigenous communities

- Cultural heritage sites

- Industrial sites

Bloom's Taxonomy and ESD

1	2	3	4	5	
Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Remember previously learned information	Demonstrate understanding of facts	Apply knowledge to actual situations	Break into simpler parts to find generalizations	Compile ideas into a new whole or alternative solution	Make and defend judgements based on Internal evidence or external criteria
Define the principles inherent in sustainable development	Give example of an extreme unsustainable practice in your institution	Create a new more sustainable approach	Identify an emerging trend in unsustainable practice	Compile the total ecological footprint of your institution	Evaluate the impact of the new sustainability solution

Potential Opportunities

Living Labs/Ecomuseums	
Issues	**Stakeholders**
Creating Vision	Local/Global
Buy-in	Approachable
$$$$	Beneficiaries
Control	Local Actors
Causality	Knowledge

Unique filter e.g. Biomimicry TEK

Knowledge Understanding

Commerce

Societal Well-being

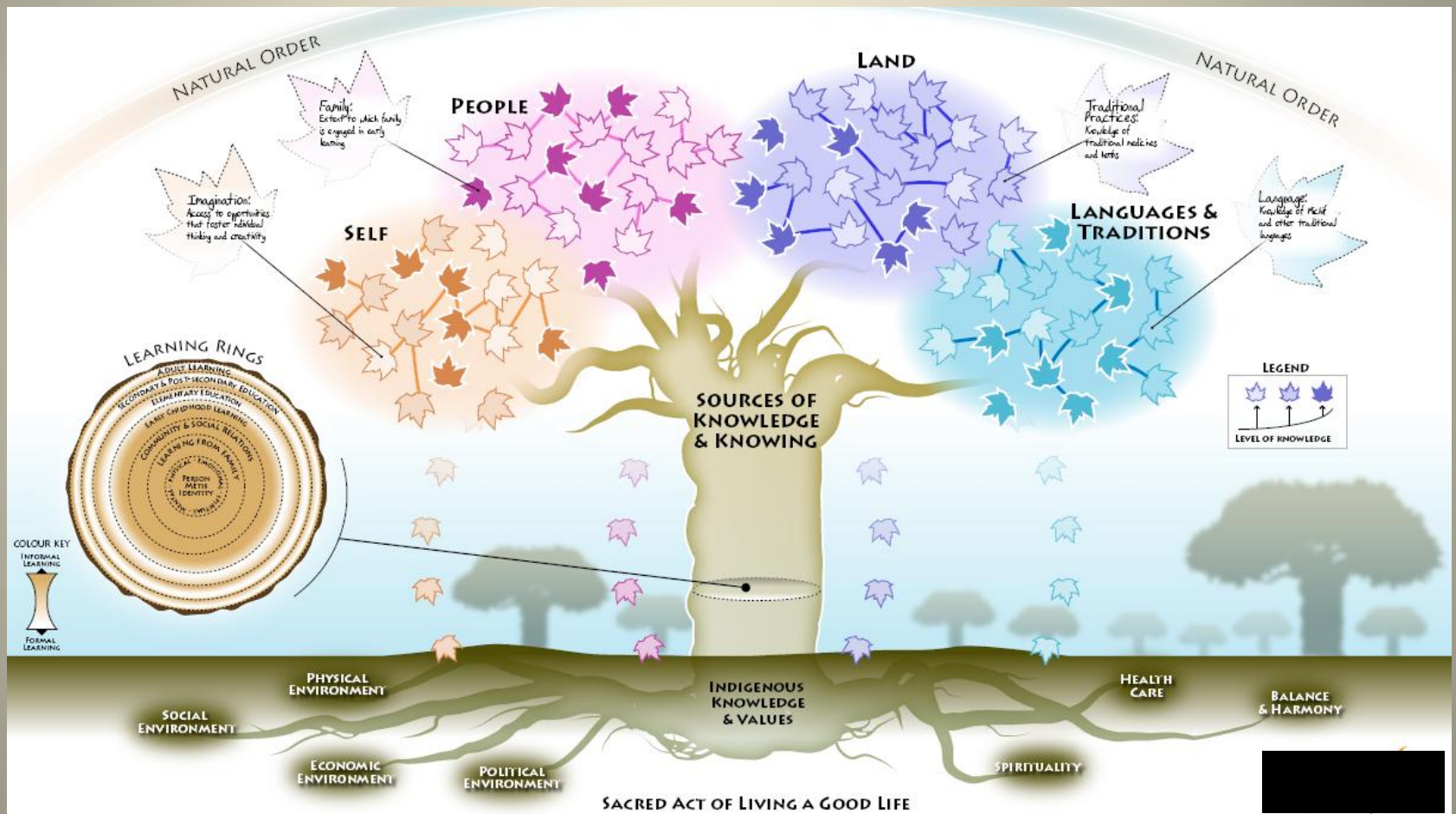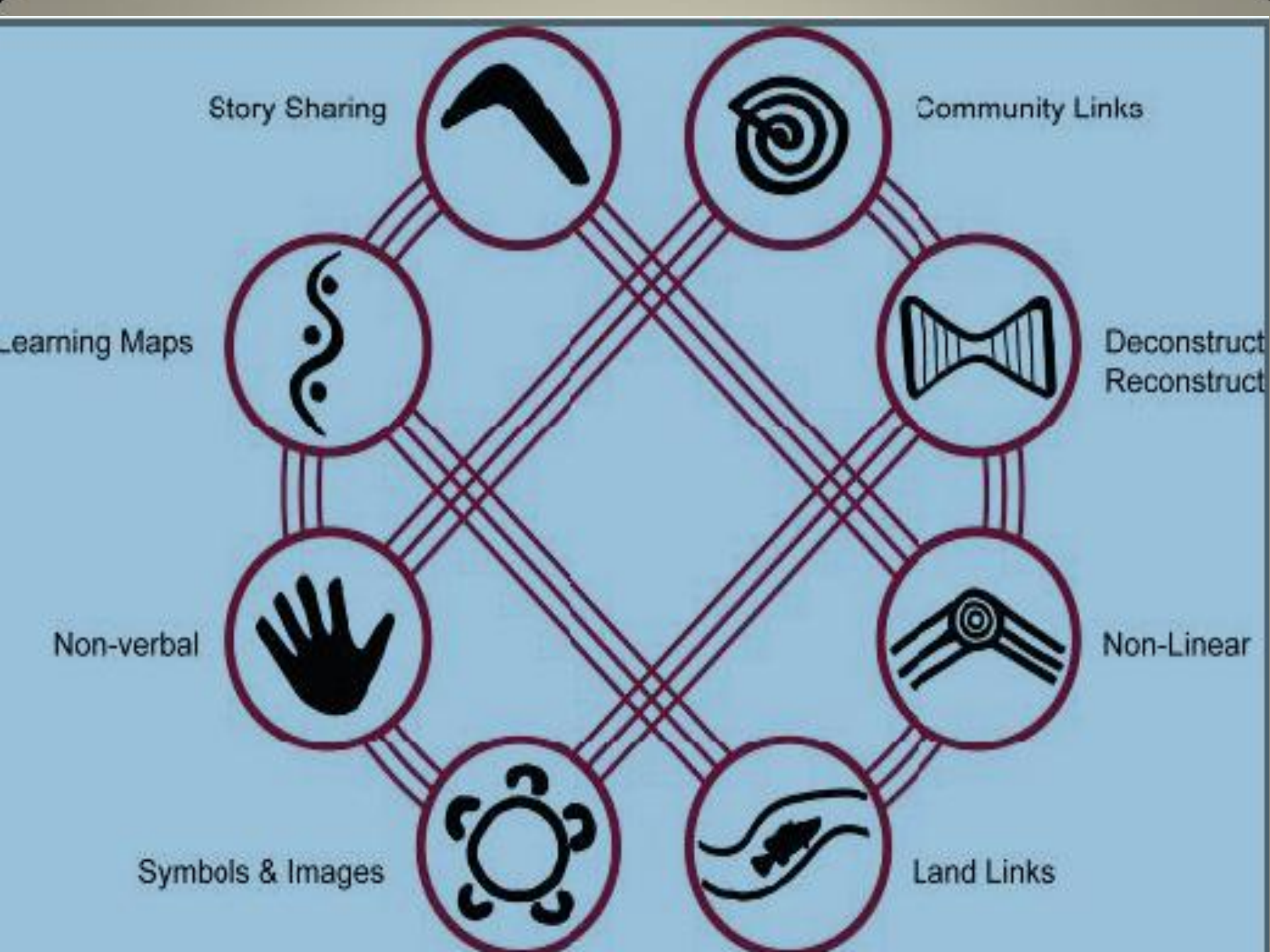**A scale that Higher Ed can manage**

MISSION

"Mino-pimatisiwin"

Teaching, applying, modelling and sharing First Nation knowledge, values, beliefs, practices and ideals in promoting sustainability in First Nation schools with guidance by elders, First Nation educaters and land-use practitioners for the purpose of ~~and~~ preserving Mother Earth for future generations

Aboriginal Learning Knowledge Centre: Métis Holistic Lifelong Learning Model

Story Sharing

Community Links

Learning Maps

Deconstruct
Reconstruct

Non-verbal

Non-Linear

Symbols & Images

Land Links

Australian Aboriginal 8-way Learning

- Story sharing
- Learning maps
- Non-verbal
- Symbols and images
- Land links
- Non-linear
- Deconstruct/reconstruct
- Community links

Knowledge framework

Scope/applications

- attempts to explain the nature and existence of humanity for a particular group of human beings
- incorporates a diverse range of systems including Inuits, Aymara Indians in Bolivia, Romani people and more

Concepts/language

- role of language in the knowledge system, for example storytelling
- use of metaphor and analogies
- maintaining traditions through written language
- oral traditions are dying because they are not written down
- conventions: role of elders, importance of group over individual
- key concepts: nomad, concept of home, honour, ownership

Methodology

- oral tradition handing down through the generations—role of memory
- ritual—shared emotion
- folklore
- music
- artefacts
- systems of reason
- explaining observed natural phenomena as being part of a total worldview—role of sense perception

Historical development

- impact of colonialization and globalization

Links to personal knowledge

- understanding the self—ancestry, place in the world, attitudes and behaviour towards others
- elders personally contributing to the form of the knowledge system
- collaboration: the enactment of ritual and tradition gives the possibility through a group effort of reinforcing the system of knowledge
- ancestral knowledge linked to the personal

Indigenous Wisdom

Step 1 - Individual Behaviour Change (IBC)

$$IBC = A + M(m1 + m2 + m3 + m4 + m5 + m6 + m7 + m8) + K + O + Sk + R + E + C(c1 + c2 + c3) + Gu$$

Step 2 - Shifting Societies (SS)

$$SS = IBC + Rew + Me + C\,Sq + Pw + G - + IC$$

M- Motivation

- m1 – commitment
- m2 – accountability
- m3 – relevance
- m4 – better, easier, etc.
- m5 – values alignment
- m6 – deemed helpful
- m7 – belief
- m8 – believed to be doable

C –Cultural acceptance

- c1 - societal
- c2 – institutional
- c3 – individual level

- **K** – knowledge
- **O** – opportunity
- **A** – awareness
- **R** – resources
- **Sk** – skills
- **Rew** – rewards (perceived)
- **Me** – meaningfulness
- **C 2** – Cultural accept (squared)
- **Pw** – Political will
- **G** – Governance
- **Ic –** International collaboration
- **E** – ease
- **Gu** – Guilt

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