

INDIGENOUS MATHEMATICS IN EARLY CHILDHOOD DEVELOPMENT

ECD Practitioners' Workshop on Knowledge for Change

by:

DST-NRF Centre in Indigenous Knowledge Systems (CIKS), University of KwaZulu-Natal (UKZN), South Africa in collaboration with South African Knowledge for Change hub of the Durban University of Technology (DUT)/UNESCO Chair in Community Based Participatory Research and Social Responsibility in Higher Education

Workshop Background

The initiative for this workshop is based on the organisers' realisation that the attainment of numeracy knowledge and skills is widely considered as one of the key prerequisites for active participation in modern society. Consequently, educational systems devote considerable time and resources to the teaching and learning of numeracy. However, research from national and international benchmarking platforms, including South Africa, clearly indicate that not all learners attain satisfactory numeracy outcomes



from their schooling experiences. Learners from marginalized communities, as a group, achieve lower level outcomes than others on these benchmark achievement tests.

The organizers of this workshop advance the view that indigenous knowledge (IK) is an important instrument for fostering knowledge for change as it builds on what the learner already knows from their lived experiences. Research across cultures on early childhood development show that young children bring an abundance of mathematical knowledge gathered from their everyday experiences to school than previously believed. This is based on their inquisitiveness, energy, a wide range of social, intellectual and emotional experiences. They are frequently engaged in a range of mathematics, including pattern and shape, magnitude, enumeration, spatial relations, classification and dynamic change.

Indigenous mathematics, including African mathematics is a valuable tool for facilitating knowledge for change because it builds on the community knowledge, skills and cultural practices of the learners. This is based on the recognition that mathematics is embedded in a particular cultural context as it is a socially and culturally constructed way of encoding, interpreting and organising the patterns and relationships emerging from the human experience of physical, spiritual and social phenomena. This implies that learning mathematics is a form of acquiring the characteristics and norms of a culture. Learning mathematics is therefore cultural and place-based. It recognizes the intimate relationship between learners and their cultural heritage. For instance, the existing mainstream school mathematics curriculum in Africa is based on western mathematics cultural paradigm. There are many differences between this paradigm and the framework in which African indigenous mathematics is embedded.

It is also important for ECD practitioners to realize the unique ways in which young children think in mathematical situations. This is based on the realisation that “good teachers interpret what the child is doing and thinking and attempt to see the situation from the child’s point of view”.

Therefore, the workshop is meant to sensitize ECD practitioners on how to build on children's mathematical knowledge and experiences with an inquiry-based approach, developing purposeful and meaningful mathematical experiences in the classroom through storytelling, dance, songs and rhymes. This emphasises the importance of indigenous languages in ECD mathematics education. Language is the most fundamental way that cultural and mathematical knowledge and skills is communicated and preserved. The integration of indigenous communication tools, including language, allow young children to be co-creators of knowledge in mathematics. Therefore, ECD practitioners should see mathematics as a reflection of the learners' life experiences and other subject areas like science and the arts.

Date: 28 May 2018

Venue: Block B, Level 1 Multipurpose Room, University of KwaZulu-Natal, Westville Campus, Durban, South Africa

Time: 08h15 – 15h30



Provisional Programme

TIME	ACTIVITY	FACILITATOR
08h00 – 08h45	Welcome, Arrival and Introductions	Programme Director: Prof HO Kaya, Director, CIKS, UKZN
09h00 – 09h10	Background to the Workshop and Profile of the DST-NRF Centre in Indigenous Knowledge Systems	
09h10 – 09h20	Profile of UNESCO Knowledge for Change (K4C) Project	Prof Darren Lortan, South African Programme Supervisor, Durban University of Technology
09h20 – 09h30	Completion of Pre-workshop survey	K Padayachee, ECD Project Coordinator, Durban University of Technology
09h30 – 09h50	Contextualising Childhood Education and Development using Indigenous Knowledge Systems Epistemologies	Prof GM Nkondo, Member of Freedom Park Council
09h50 – 10h15	Discussions	ALL
10h15 – 10h30	<i>Group Photo and Tea Break</i>	ALL
10h30 – 11h30	Improving Numeracy Knowledge And Skills using African Mathematics and AFRICAN ABACUS™ Games™: Presentations and Demonstrations	Mr Kenyatta Byrd, Founder and Director, AFRICAN MATH(S)™
11h30 – 12h00	Group Exercises	ALL
12h00 – 12h30	Follow-on Demonstrations	Mr Kenyatta Byrd, Founder and Director, African Math
12h30 – 13h00	Group Exercises	ALL
13h00 – 13h30	Lunch	ALL
13h30 – 14h20	Feedback session	Dr M Chinsamy, Research Manager, CIKS, UKZN
14h20 – 14h50	Practitioner Creative Content	
14h50 – 15h30	Way Forward	Prof HO Kaya and Prof GM Nkondo
15h30	Closure	