



**Back to  rth
Playgrounds:
addressing sensory
needs of children in
deprived settings**

WFOT Congress 2018

Presented by Annamarie van
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With special acknowledgement: Erna
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GESONDHEIDSWETENSKAPPE

OUTCOMES OF THE PRESENTATION

- The presentation will tell the story of how an interdisciplinary, collaborative effort between the UFS & communities in the Southern Free State led to the building of low cost, sustainable playgrounds

Provide a glimpse on research results of the impact of a sensory rich programme presented on a playground

REALITIES

- Nearly 60% of children in SA live in poverty
- The minority (about 20 %) of population have access to private healthcare & thus “gold standard” assessment & intervention
- Although early childhood development receives attention, focus is on:
 - providing basic health care services,
 - basic nutrition,
 - basic education &
 - social services

QUESTIONS

- If development is dependent on sensory experiences to nourish the brain & contribute to development (Ayres, 1977; Schaaf & Smith Roley, 2006) what happens if.....
 - A child is deprived of quality sensory experiences?
 - A child grows up in unorganised sensory environment?

SA research:

1. Children from low socio-economic settings are more prone to sensory integration difficulties (Van Jaarsveld, Venter, Van Vuuren & Joubert, 2001a; Van Jaarsveld, 2010)
2. Improvement in development & SI functions are evident when children from low SES are exposed to a SI orientated stimulation program (Van Jaarsveld, Venter, Van Vuuren & Joubert, 2001b)

In middle- to high socio economic settings:
Children with delays contributing to poor school performance
are usually referred to an occupational therapist

20%.....



...the other 80%??



Involvement of the Dept of Occupational Therapy,
University of the Free State in rural communities in
the Southern Free State led to the questions:

How do we address these challenges??

How do we reach more children growing up in low
SES in rural communities??

In 2015 our 3rd year OT students were introduced to a sustainable building method aimed at shack replacement



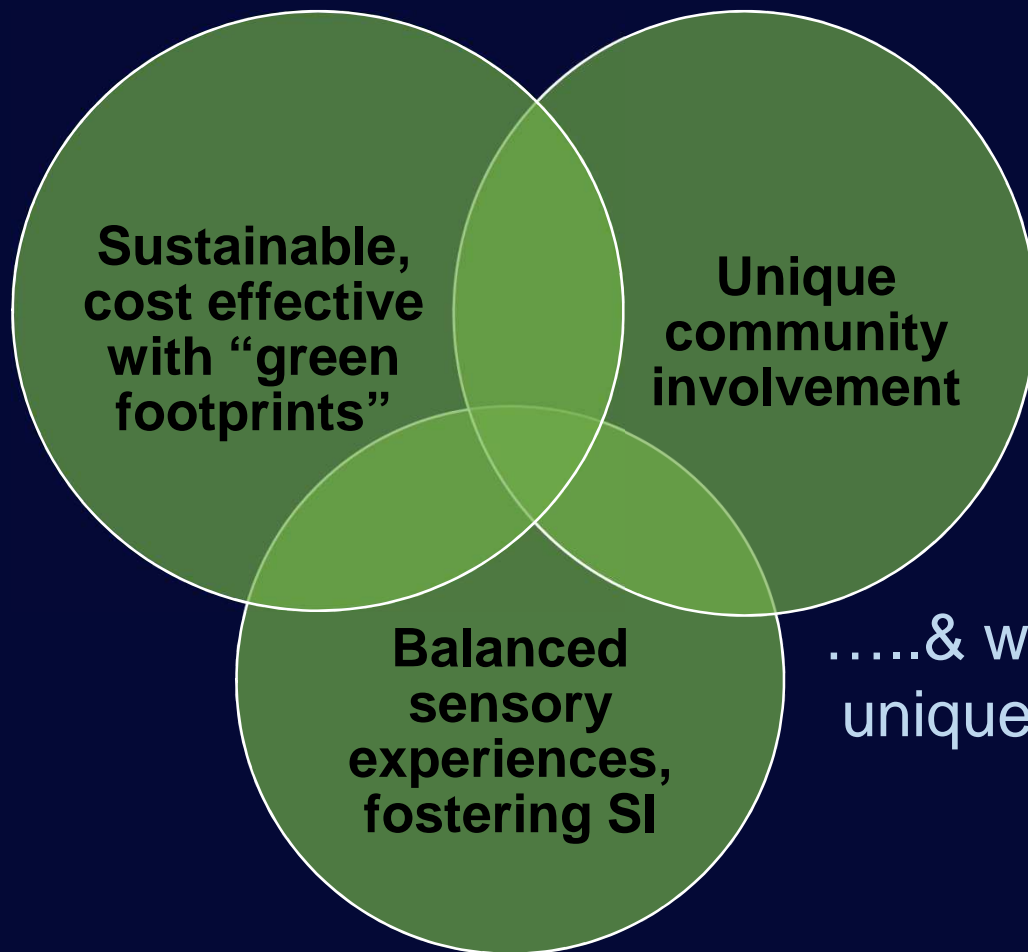
Green social entrepreneurs by excellence

- QPT aim to show that it is possible to develop low-income innovative affordable implementable strategies to raise sustainable awareness in the built environment.

Through interdisciplinary collaboration we aspire to be agents of change to create REAL sustainable human settlement.

If this method allows for sustainable building of houses.....

.....why not build sustainable low cost playgrounds that will “foster” sensory integration??



.....& will additionally allows for a unique training platform for students

Led to the conception of.....

“Back to Urth” Playgrounds©

“Back to Urth” Playgrounds (BUP’s) are cost effective, sustainable & unique, providing in the sensory needs of children growing up in deprived rural settings (3rd world settings)

The first “Back to rth” Playground[©] was built at a school in Springfontein in 2015



Collaborative effort between UFS, Qala Phelang Tala, Dept of Education, Springfontein community members and the Engineering Dept of the Central University of Technology, FS

THE UNIQUENESS OF THESE PLAYGROUNDS:

- Each part of the playground is developed using the Adapted Version of the Wall Model & research results
 - Focusing on abilities supported by especially the vestibular, proprioceptive & tactile systems, such as:
 - Postural control
 - Balance
 - Dissociation between movements
 - Midline crossing
 - Bilateral integration
 - Sequencing
 - Praxis
- Ensuring that there is possibilities for sensory modulation, discriminatory functions, refined use & praxis

Second playground was built in Fauresmith in 2016

Video:

With special thanks & appreciation to
Ané Otto &
Cara Mc Donald
4th year OT students, 2016



What are the impact of the playgrounds on development?

RESEARCH 2017

Aim: To investigate the impact of a sensory-motor stimulation programme, presented by educators on a sustainable, low cost playground that was designed for enriched sensory experiences, on the development & functioning of Grade R & 1 learners of a rural school in the Free State

Researchers: Annamarie van Jaarsveld (UFS),
Erna Liebenberg (DOE),
Elize Janse van Rensburg (UFS) &
Cornél van Rooyen (UFS)

METHODOLOGY

- A classic experimental non-randomised pre-test-post-test control group design was used for this study
- Research population:
 - Grade R & 1 learners from two schools in the Southern Free State
 - (one school was the experimental school & the other the control school)
- Measuring Instruments:
 - BOT-2 (short form), Revised Ayres Clinical Observations (SAISI) and OPTIMA School readiness test

RESULTS

1. BOT-2 Test of motor proficiency

- Post-testing results indicated no statistical differences in the sub-test scores but on total test scores:
 - Experimental School's total test scores were significantly higher than control school (Kruskal-Wallis Test $Pr > \text{Chi-Square} = <.0001$)

2. Revised Ayres Clinical Observations:

- Learners of the experimental school performed better in 22 of the 26 test items
- Statistical significant differences in:
 - Equilibrium Reactions four-point: Fisher's Exact Test $Pr < = P 0.0337$
 - Equilibrium Reactions long sit: Fisher's Exact Test $Pr < = P 0.0064$
 - Equilibrium Reactions long sit: Fisher's Exact Test $Pr < = P <.0001$
 - Standing Balance Eye Closed R Fisher's Exact Test $Pr < = P 0.0252$


RESULTS CONTINUED....

- The biggest surprise for us as researchers was the results of the Optima Test for School Readiness:
- Statistical significant differences on 14 of the 21 test items
 - Experimental School's test scores were significantly higher than control school

Test Item	p-value
Test 1.2 Perception of shapes	0.0009
Test 1.3 Fore/Background discrimination	0.0213
Test 1.4 Incomplete man drawing	<.0001
Test 1.5 Gestalt Perception	0.0007
Test 1.7 Visual Sequence	0.0047
Test 2.1 Discrimination	<.0001
Test 2.2 Memory	<.0001
Test 2.5 Picture Riddles	0.0181
Test 3.2 Sense of direction	0.0002
Test 3.3. Midline crossing	0.0023
Test 3.4 Number concepts	0.0004
Test 4.3 Life skills	<.0001
Test 5.1 Fine motor coordination	<.0001
Test 5.2 Gross motor coordination	<.0001

This study provides support for Ayres' hypothesis that through the provision of enriched sensory opportunities at brain stem level, higher level adaptive responses can be made possible (Ayres, 1979)

THE WAY FORWARD.....

- Publication of research results
- Longitudinal study planned for 2019
- Explore funding opportunities & build more Back to rth playgrounds & provide training to educators on the optimal use of playgrounds

ACKNOWLEDGEMENTS:

Without whom this journey would not have been possible...!!



“Back to rth” Playgrounds©

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Thank You

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