

Activating the child's own natural desire to learn

USING NEUROSCIENCE AS A WAY TO UNDERSTAND KEY ISSUES IN EARLY CHILDHOOD DEVELOPMENT AND EDUCATION.

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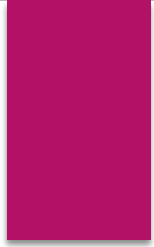
**Class of
1985**



LET'S GO DOWN MEMORY LANE

Think about your own
childhood... memories of
school, teachers, lessons ...

What are your memories
today?

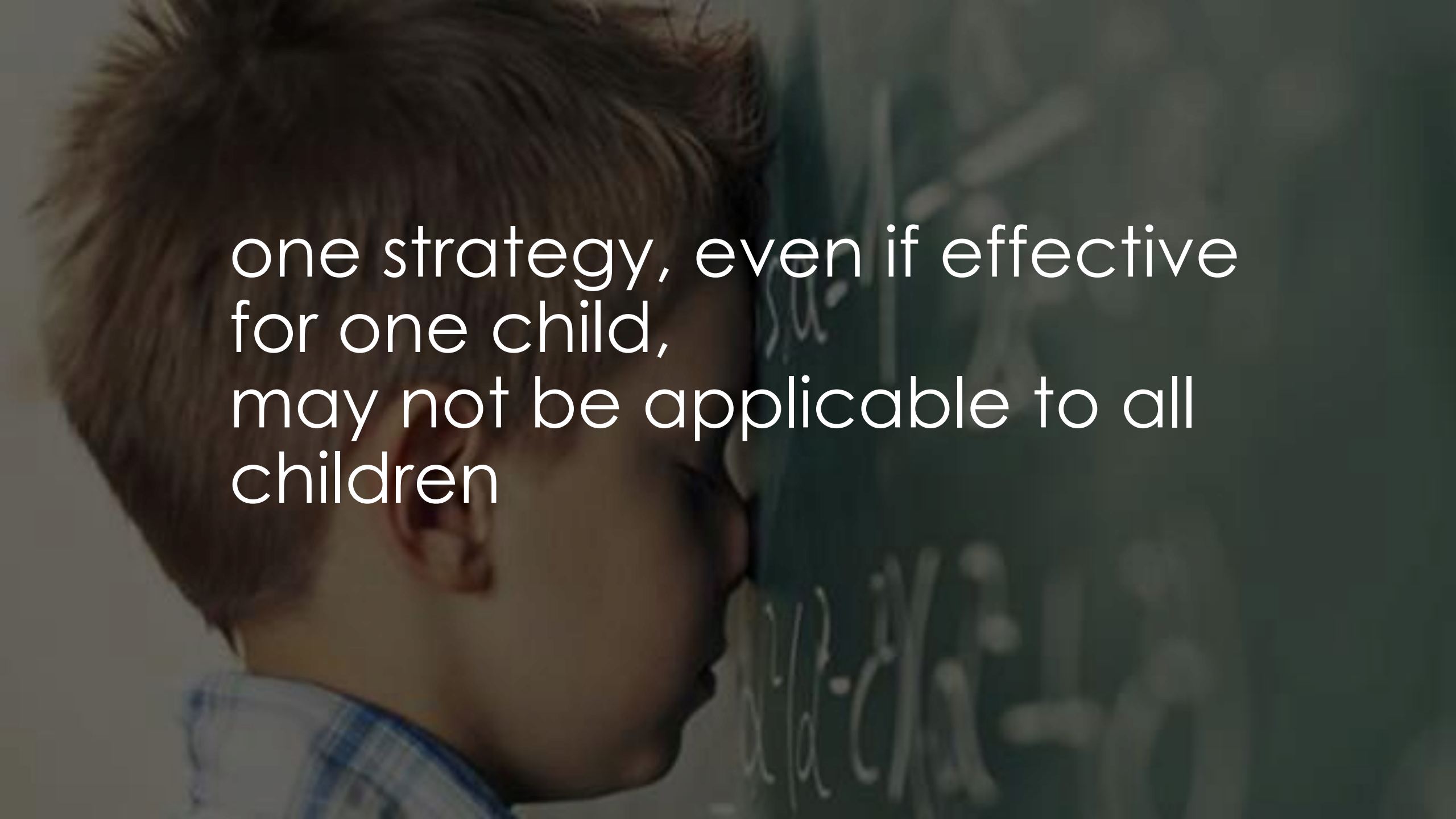


Imagine
having this
student in
class...
give a brief
description of
your thoughts



How can we teach
students if we do not
know how they
learn?

Bringing order to chaos...

A young boy with short, light brown hair is shown in profile, looking towards the right. He is wearing a light blue and white checkered shirt. In the background, a chalkboard is visible with several mathematical equations written in white chalk. The equations include $\frac{1}{2}x + \frac{1}{3}y = 1$, $\frac{1}{4}x - \frac{1}{5}y = 2$, and $\frac{1}{6}x + \frac{1}{7}y = 3$. The text is overlaid on the image in a white, sans-serif font.

one strategy, even if effective
for one child,
may not be applicable to all
children

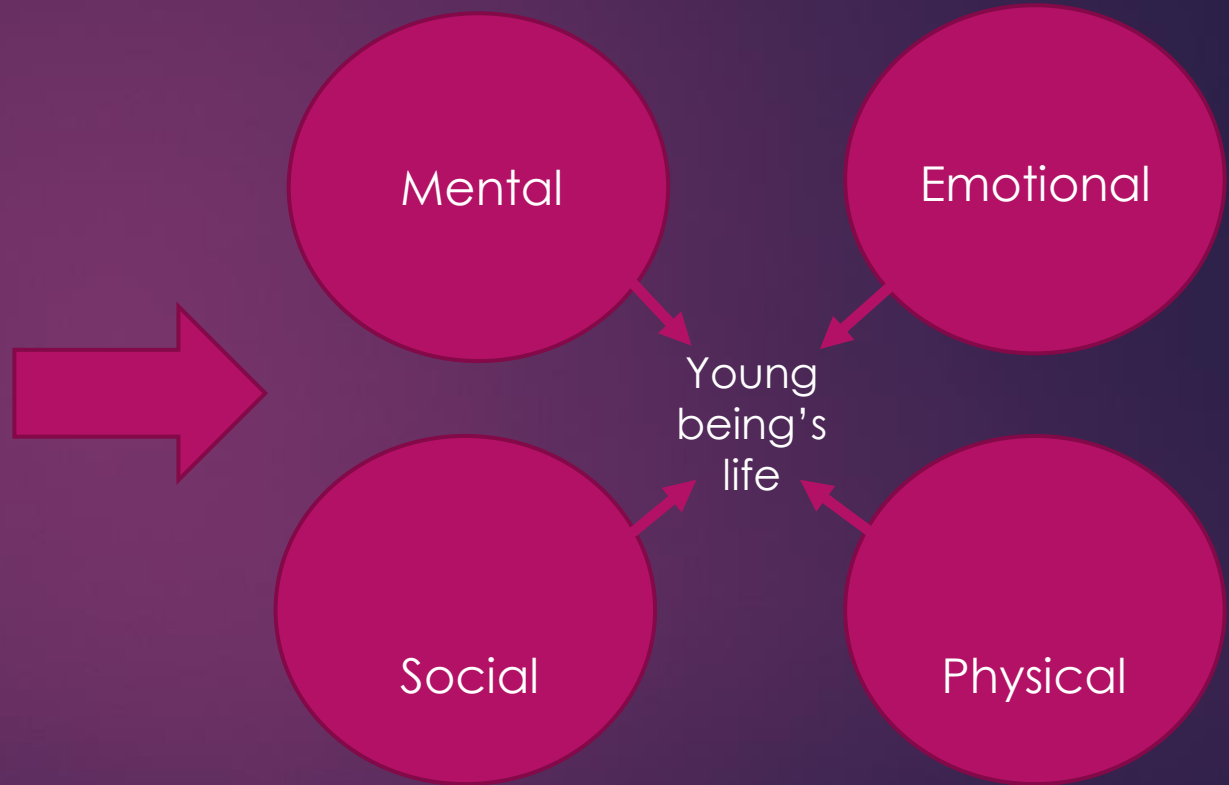
Rushton (2011)

PRINCIPLE No 1

Each child has a unique brain which
thinks
feels
learns
in different ways!



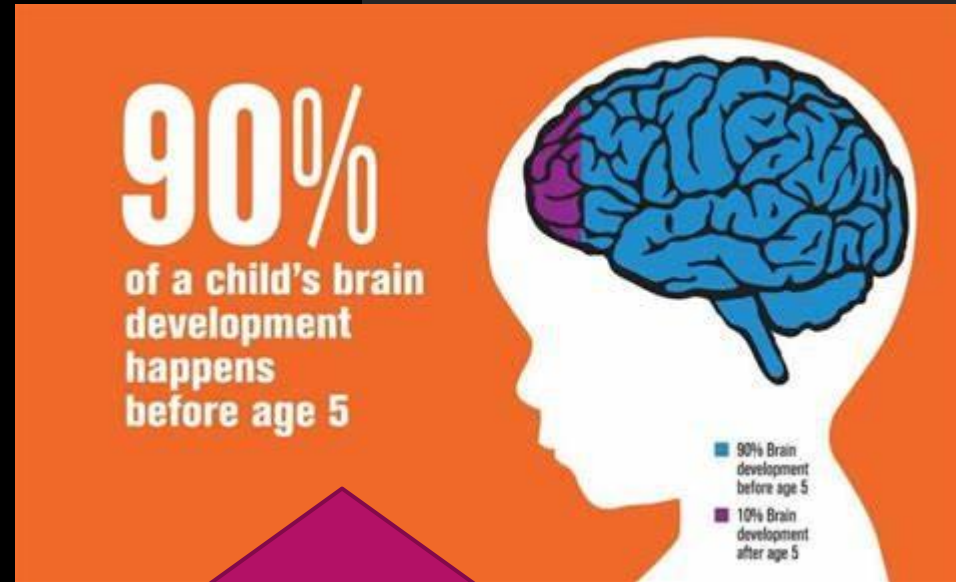
Tap into the...



Rushton (2011)

PRINCIPLE No 2

Brain development continuously occurs as one adapts to the environment one is in, and this development is determined by the stimulation offered within



Billions of neurons are being connected for development to occur

Rushton (2011)

PRINCIPLE No 3

Educator = Facilitator

- children learn to learn
- opportunity to make choices
- take decisions
- Involving their emotions



Rushton (2011)

PRINCIPLE No 4

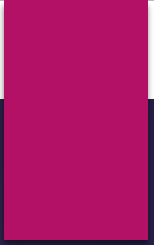
Inquiry-based learning strategies linked to **real-life**, **hands-on** learning experiences

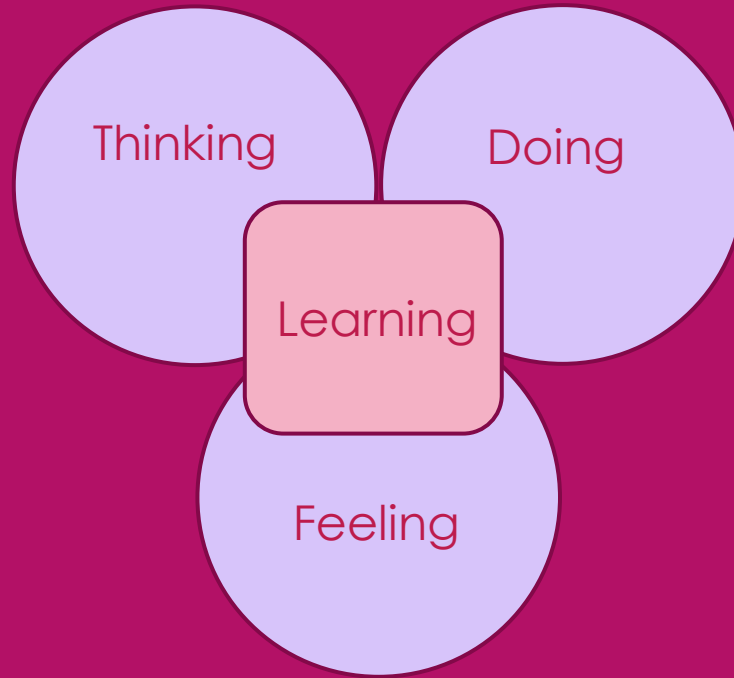


Allow the student to **ask questions**, assisting the development of **critical thinkers** and activating the child's **own natural desire** to learn.









If we do not address these human forms of learning...

we will produce students who are ...

DISENGAGED

DISENCHANTED

(Novak & Gowin, 1984; Johnston, 1996; Jarvis, 2006)

UDL – Universal Design for Learning

THE WHY OF LEARNING

Understanding how to engage learners and stimulate interest to motivate them to learn

THE WHAT OF LEARNING

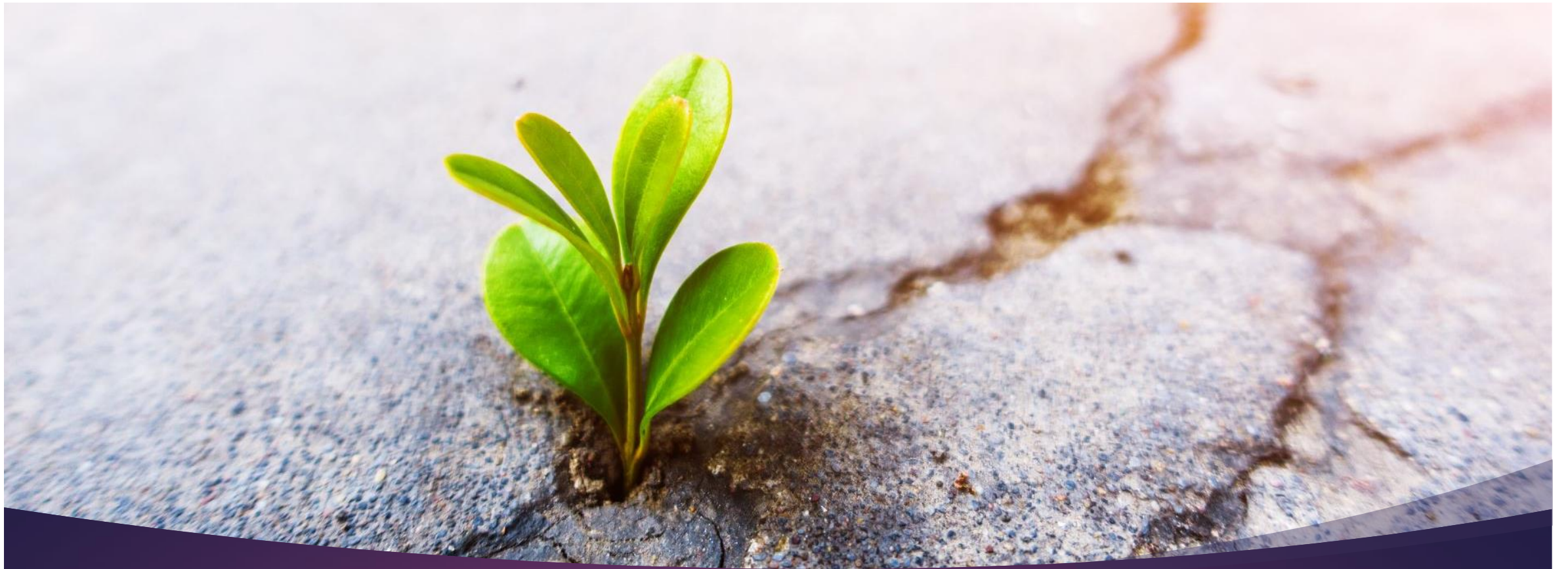
Understanding how to present information and content in an effective way considering what we see, hear and read

THE HOW OF LEARNING

Understanding how learners perform tasks to express what they know, hence providing differentiation



The starting point should not be how one should teach for students to attain the learning outcomes, but how students need to be supported to reach these learning outcomes



The Emergent Curriculum

Emergent and inquiry-based curriculum

A philosophy of teaching and way of planning curriculum that focuses on being responsive to children's interests to create meaningful learning experiences.

Active participation
relationship building
flexible and adaptable methods
responsive to the children's needs

Inquiry
child-initiated curriculum
collaborative
play-based learning

Proponents of this style of teaching advocate that knowledge of the children is the key to success in your program



Educators as facilitators

- ✓ Observations
- ✓ Plans daily activities and projects based on children's interests
- ✓ Involves interactive learning processes involving investigations, discussions and active learning
- ✓ Self-reflective practice

Educators as facilitators



- Involve all the senses
- Challenge creativity
- Hear and use oral and written language
- Explore art media
- Practice solving interpersonal problems
- Conduct investigations and ask questions
- Explore and order material
- Acquire various physical skills



(Crowther, 2005; MachLachlan et al., 2013; Wright, 1997)

“In the very early years, learning outcomes should be conceptualised as a compass not a map: they point in possible directions that children can learn and grow, but do not lay down templates that all children must follow”.
(DQSE, 2015:5)

Learning outcomes should move beyond the traditional view of focusing on knowledge and skills only to, for example, indicate also affective factors such as developing enthusiasm for learning or the ability to self-regulate.
(Meyer, Rose & Gordon, 2014)

Learning Outcomes Framework

A COMPASS AND NOT A MAP!

In the first few years of life, more than 1 million new neural connections form every second!

Both parents and educators are responsible for a
STURDY or FRAGILE foundation
for all of the learning, health and behaviour to follow!

Brains are built over time, and the foundations of brain architecture
are constructed in early life.



A GROWTH PROMOTING ENVIRONMENT



Applying neuroscientific research to the classroom is a new and exciting endeavour to promote better learning.

Amran, Rahman, Surat, & Bakar (2019)

Education is about enhancing learning and teaching, and neuroscience is about understanding the biological brain as well as mental processes involved in learning.

Educational Neuroscience



The Classroom example

THE EXPERIENCE OF A KINDERGARTEN EDUCATOR IN PRACTICE

The background features a grey gradient with a large, abstract splash of teal and purple colors. The splash is composed of numerous overlapping circles and irregular shapes, creating a textured, organic feel. The teal is on the left and the purple is on the right, with some overlap in the center.

Creating Links

INTERVIEWS

by AGE **3**
a toddlers **BRAIN**
is **80% GROWN**



Opportunities given to children encourage the connections made within the cerebral cortex (which is the grey matter of the brain), between more than 100 billion neurons. All this is happening before the child turns five. It is sad to think that if this was not the case, so many neurons would die out if not used.

