



Cambridge Assessment  
International Education

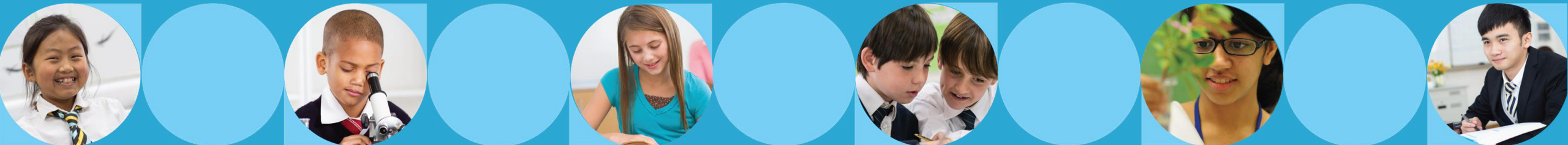
Cambridge Schools Conference, Orlando  
23-24 June 2023  
**#camschoolsconf**

# Neurodiversity and education

Making teaching, learning and assessment more inclusive

Paul Ellis  
Head of Teaching & Learning

June 2023



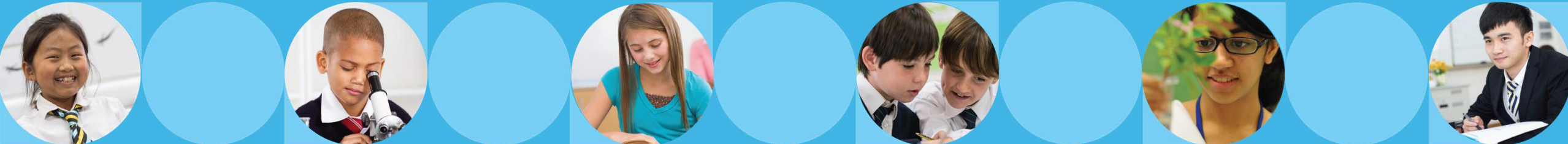
# Objectives

1. What is inclusive education?
2. What is neurodiversity?
3. Inclusive education in practice



*Part One*

# What is inclusive education?



# Activity 1

- ▶ How would you define 'inclusive education'?



# Inclusive education: a definition

- ▶ Teaching that engages students in learning which is **meaningful**, **relevant** and **accessible** to all.
- ▶ Individual difference is a source of **diversity**, which can enrich the lives and learning of other people.



# 'There's an APP for that'

**Access**

**Participation**

**Progress**

# Common conditions

Dyscalculia

Dyspraxia

Dyslexia

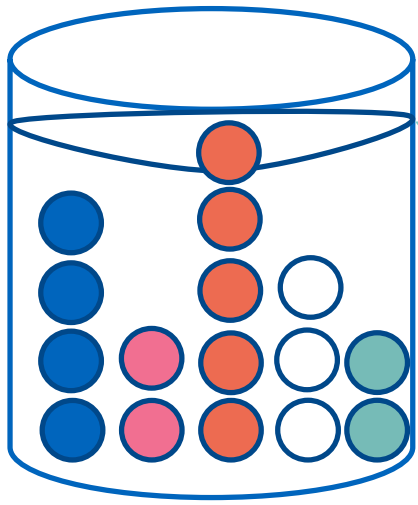
Attention Deficit  
Hyperactivity  
Disorder  
(ADHD)

Developmental  
Language  
Disorder (DLD)

Autism  
Spectrum  
Condition (ASC)

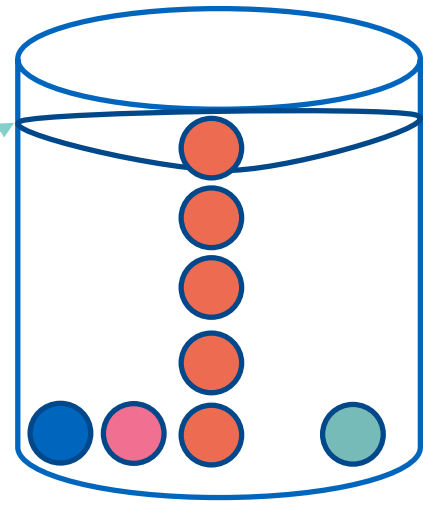
# 'Balls in buckets'

Your behaviour is disrupting the class – perhaps removing you is the answer?



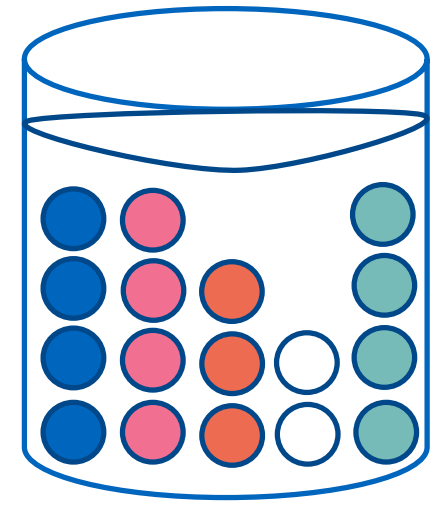
Threshold for diagnosis

Number of balls = severity of challenge (some balls are easier to see than others!)



The system works well for people with **one area** of challenge...

**Dyslexia!** Here are some reading strategies.



...but works less well for those with multiple or less identified needs, especially if none reach the threshold for diagnosis.



# Commonly observable presentations

Behaviour

Concentration  
and attention

Communication  
and language

Executive  
functions

Motor

Mental health

Literacy

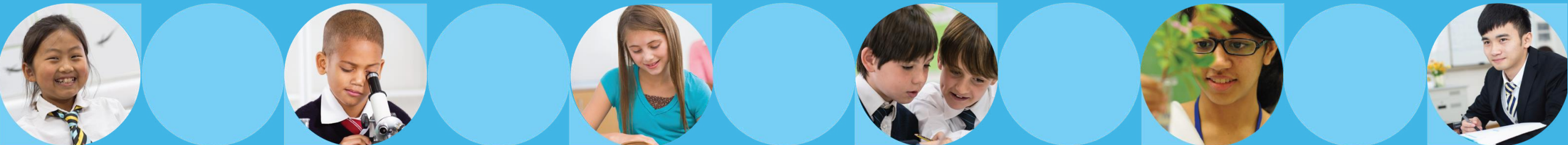
Numeracy

# Activity 2: 'Balls in buckets' – from the few to the many

- ▶ In your current teaching or school experience, how many students have come across who may have an **'unidentified' support need**, but don't meet the threshold to access support?
- ▶ You may like to consider students who:
  - ▶ Face barriers to their learning
  - ▶ Demonstrate tendencies that you might associate with one or more specific learning difficulties
  - ▶ Experience challenges with their mental health
  - ▶ Are high achievers but struggle with perfectionism
- ▶ **Make a note of this number** and be prepared to share this with the group
- ▶ How many students have we identified between us?
- ▶ What are your initial thoughts on this collective number?

*Part Two*

# What is neurodiversity? (An alternative approach)



# Terminology

## Neurodiversity

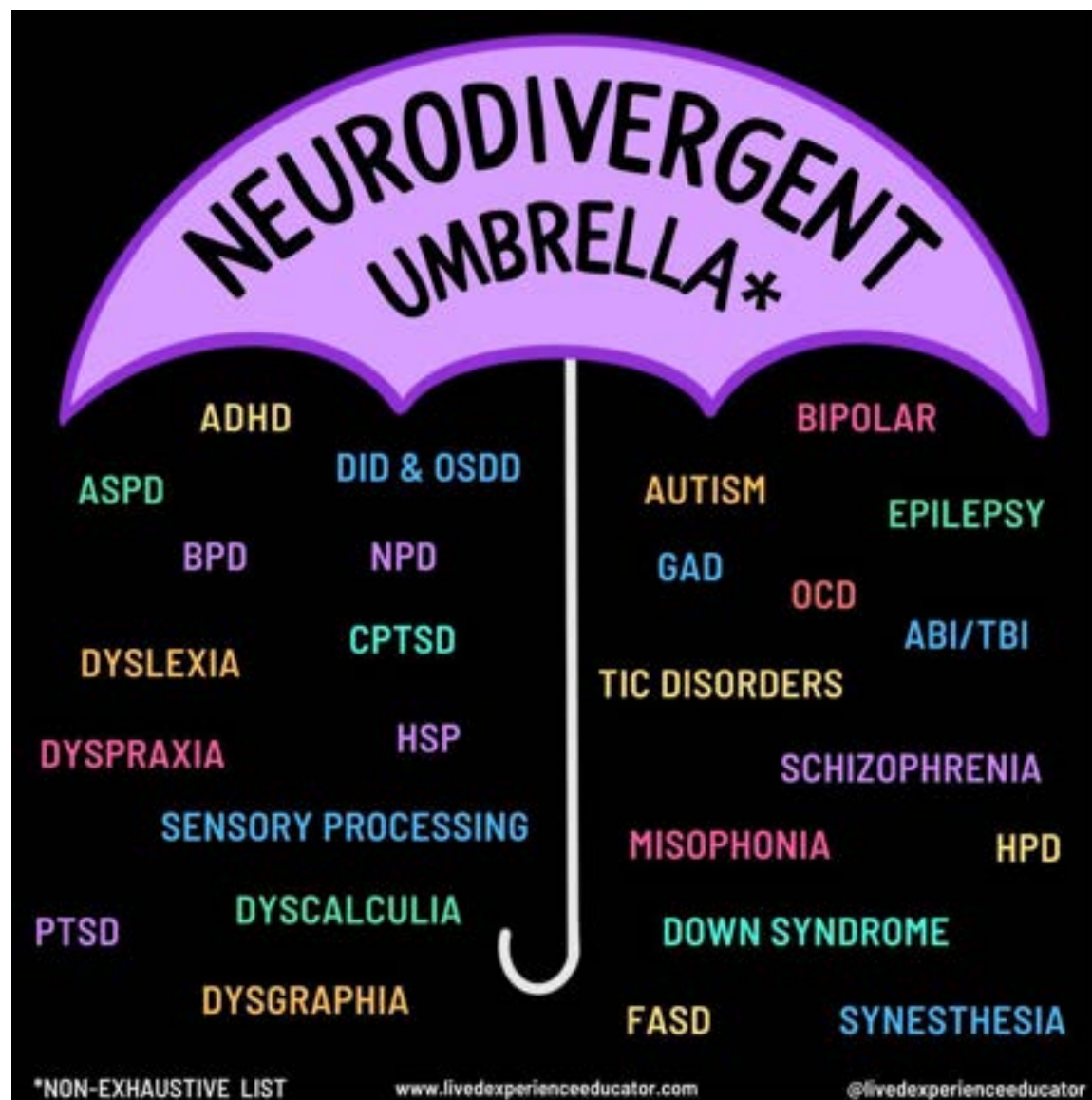
- The different ways that we all think, move, hear, see, understand, process information and communicate with each other. We are all neurodiverse.

## Neurotypical

- The group that thinks, moves, hears, sees, understands and processes information which meets social or cultural norms.

## Neurodivergent

- Having or related to a type of brain that is often considered as different from a socially constructed or defined norm.



# The importance of neurodiversity

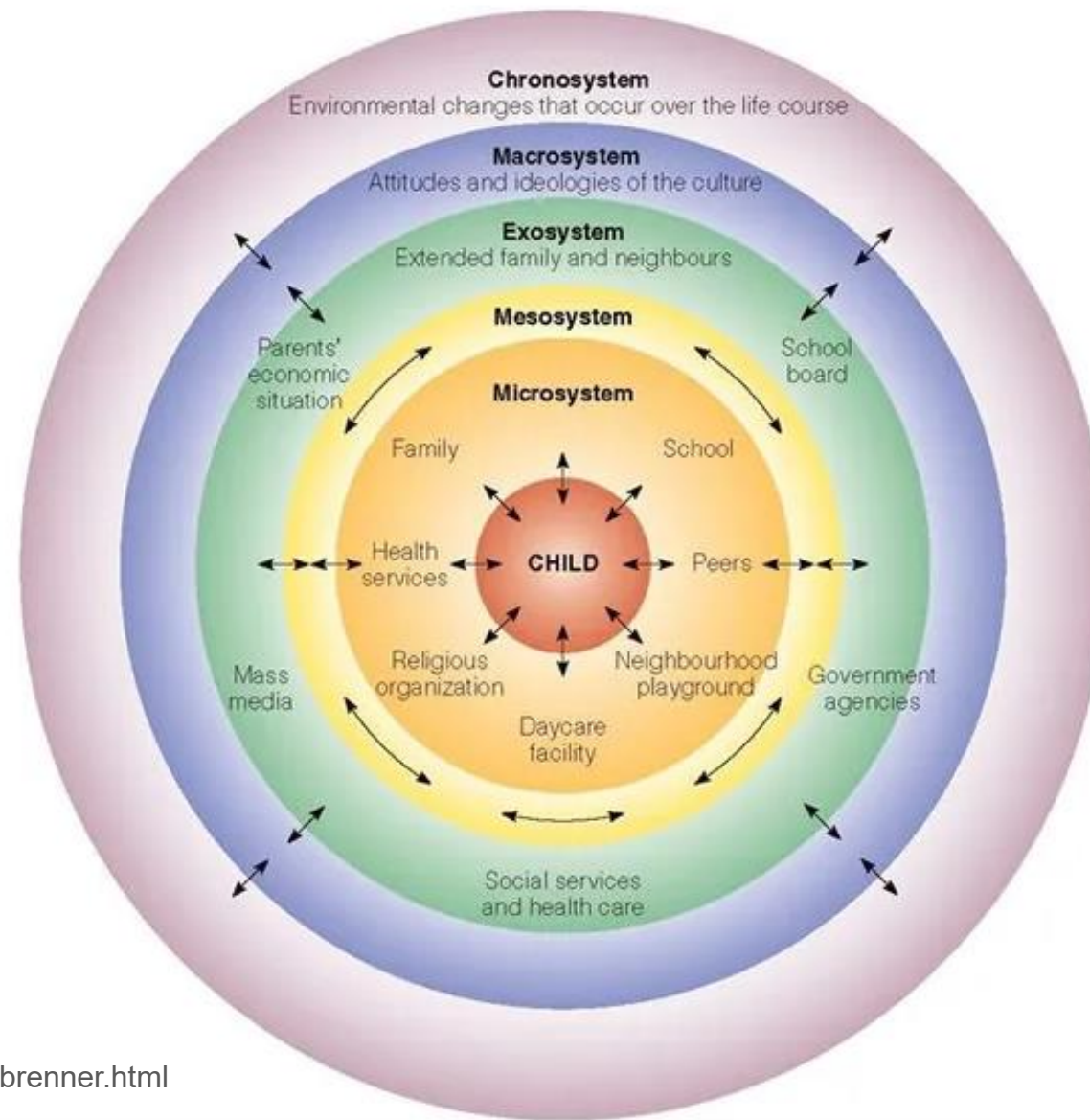
*“Neurodiversity may be every bit as crucial for the human race as biodiversity is for life in general.*

*“Who can say what form of wiring will prove best at any given moment?”*

Harvey Blume (*The Atlantic*, 1998)

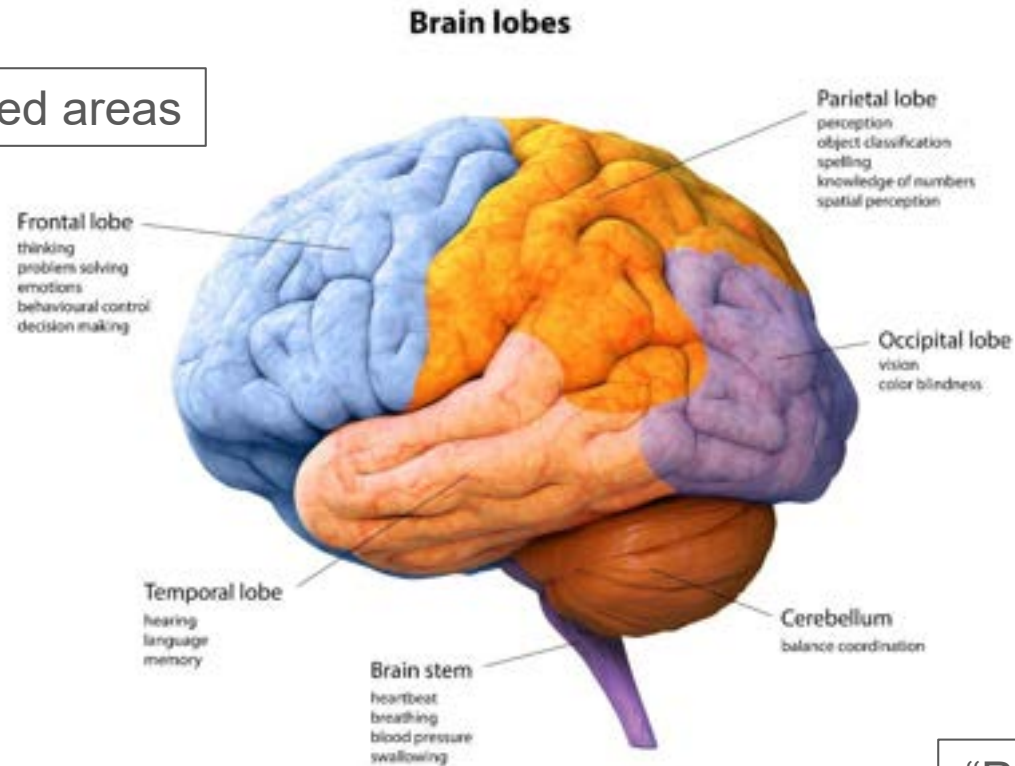


# Ecological Systems Theory - Bronfenbrenner



# It's all the same brain

More recently evolved areas

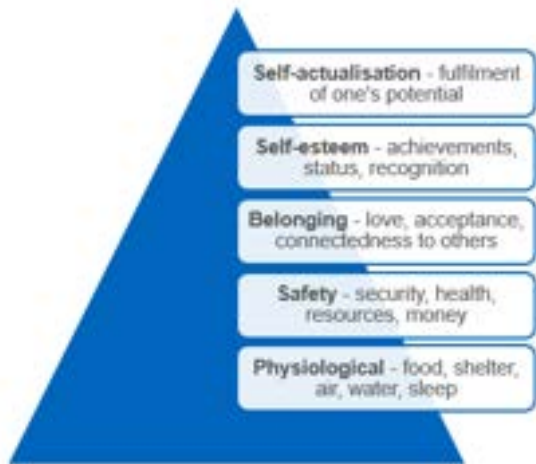


“Primitive” areas

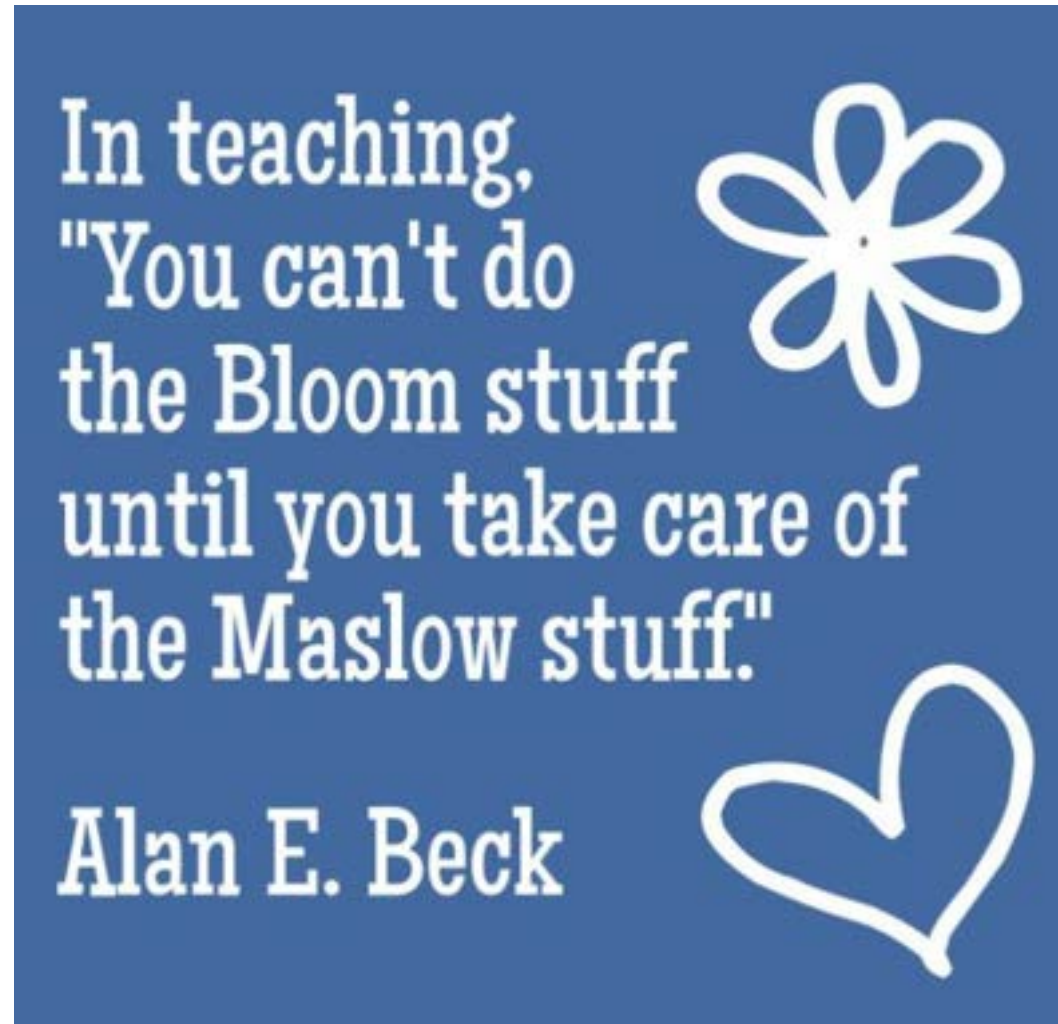
← Front of head



# Reposition theories of learning: 'You can't Bloom before you can Maslow'



Maslow's hierarchy



Beck, A. E. (1994). On universities: J. Tuzo Wilson Medal acceptance speech.  
*Elements: Newsletter of the Canadian Geophysical Union*, 12, 7–9.

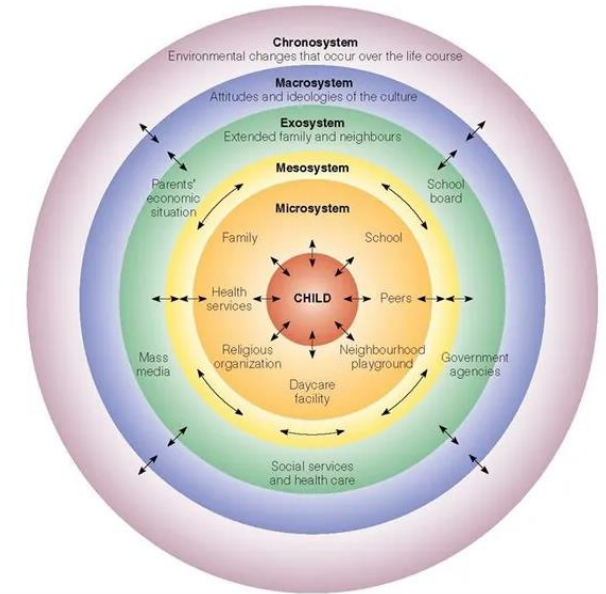


Performance = potential *minus* interference

Tim Gallwey (1972)

# Activity 3: What interferes with your own 'performance'?\*

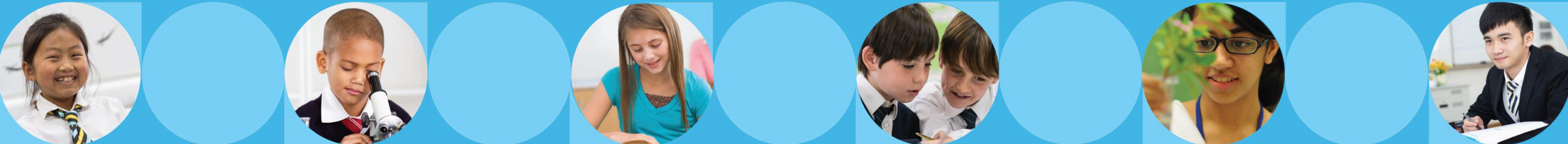
- ▶ Reflect on the **types of 'interference'** you\* have experienced which have potentially undermined or impacted on your ability to thrive
- ▶ What 'interferences' (such as illness or additional pressures):
  - (a) Do you\* currently experience?
  - (b) Have you\* had to manage in the past?
- ▶ Reflect on:
  - (a) The extent to which these 'interferences' have **impacted** on different areas of your\* life such as your\* own learning, work, family or community involvement
  - (b) How the interferences and the impact have **changed** over time



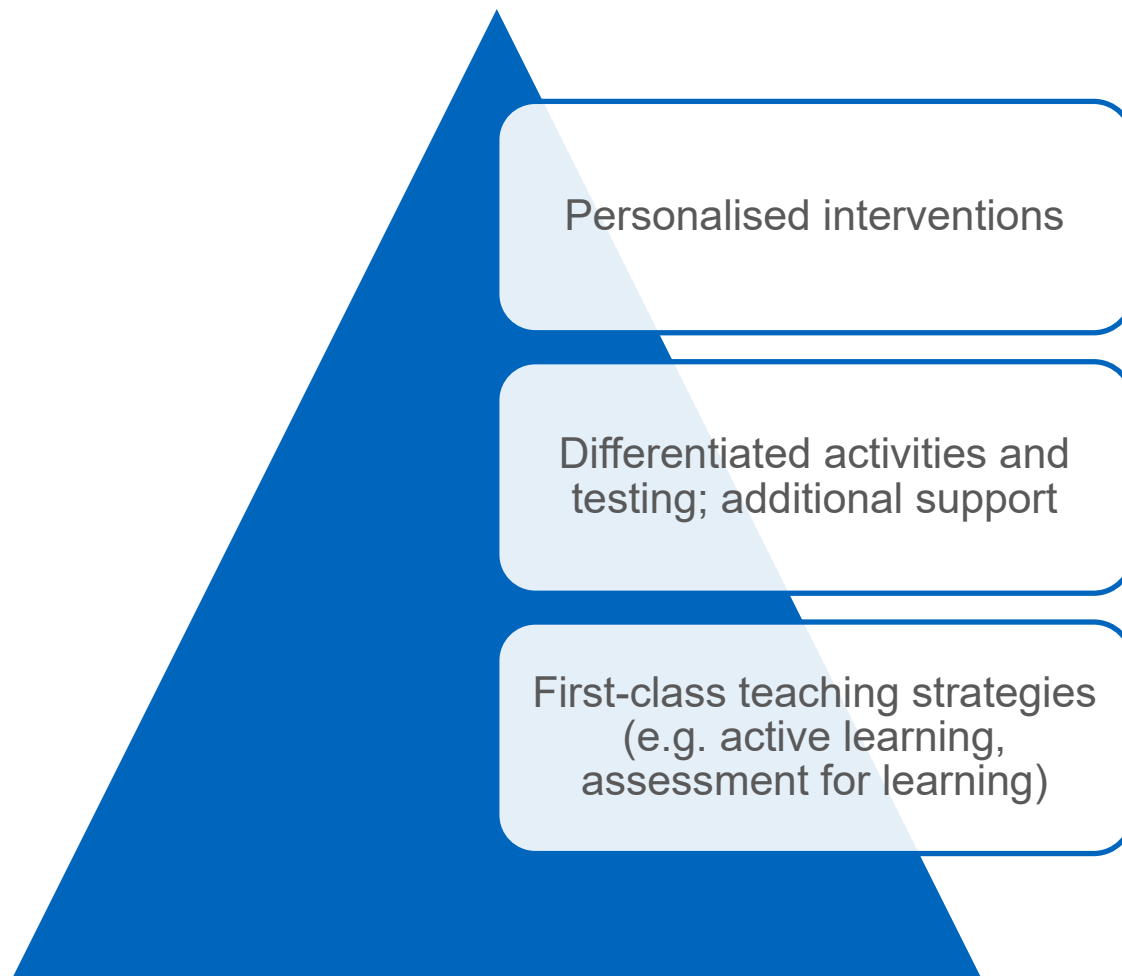
*\*If you feel more comfortable doing so, think instead about someone you know*

*Part Three*

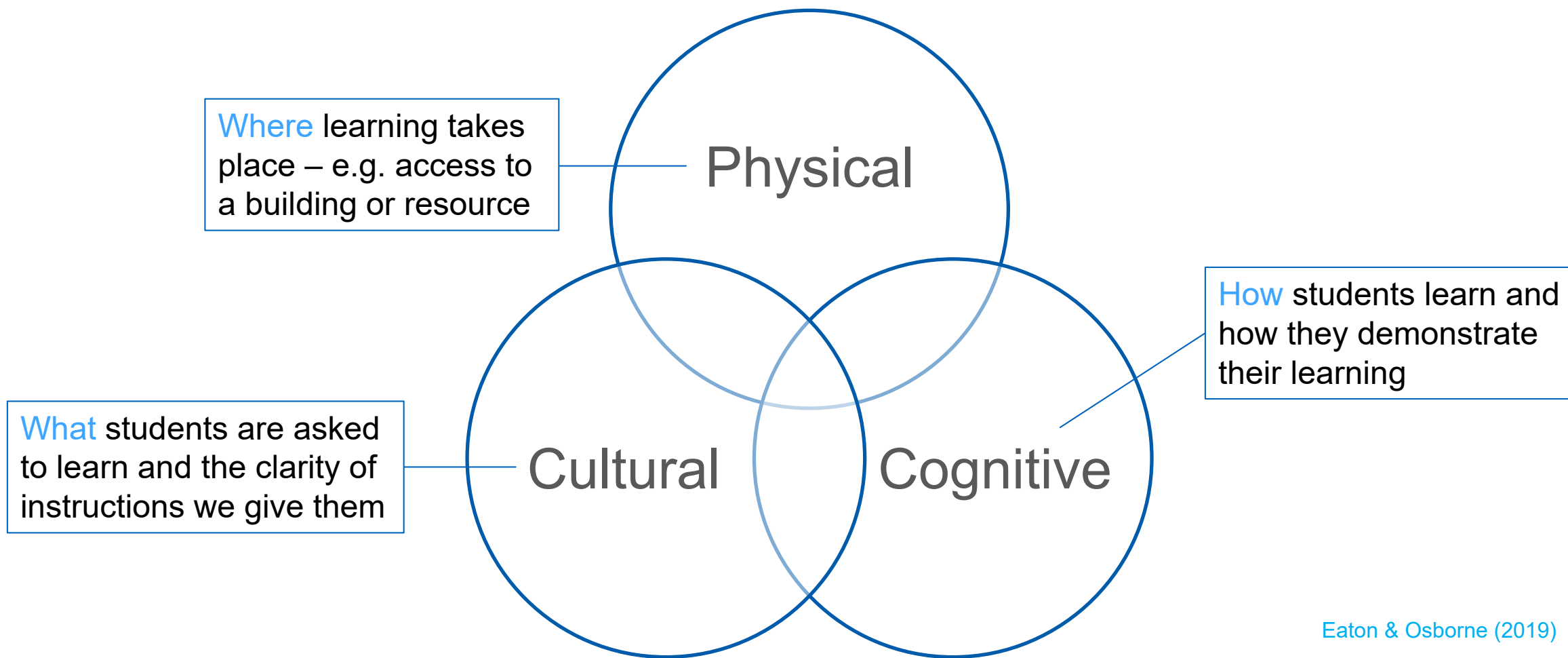
# Inclusive education in practice



# Levels of learning and teaching



# 'Patterns beyond labels'



Eaton & Osborne (2019)

# Activity 4: Patterns beyond labels

1. Using the lenses template and the pack of barriers to learning provided:
  - a) **Identify** which lens/lenses the barriers or interferences fit(s) under
  - b) **Discuss** whether each barrier
    - ▶ Sits neatly under a particular lens, or
    - ▶ Relates to more than one lens
2. Can you think of **other types of barrier or interference** your students have commonly experienced?
  - ▶ Make a note of these on the blank cards provided in the pack
3. As a team, **agree where each 'barrier' should be placed on the lenses template** and identify a spokesperson to feed this back to the whole group

# 'The 3 (or 4) Rs'



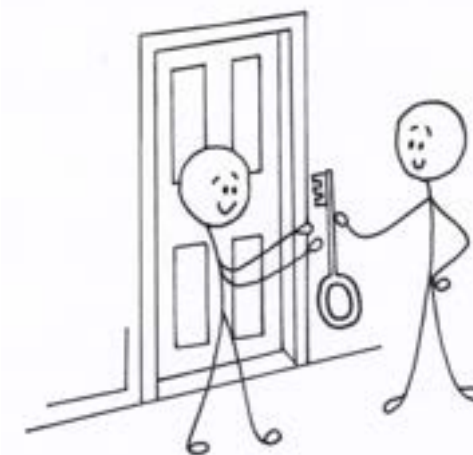
Reflect



Remove



Reduce



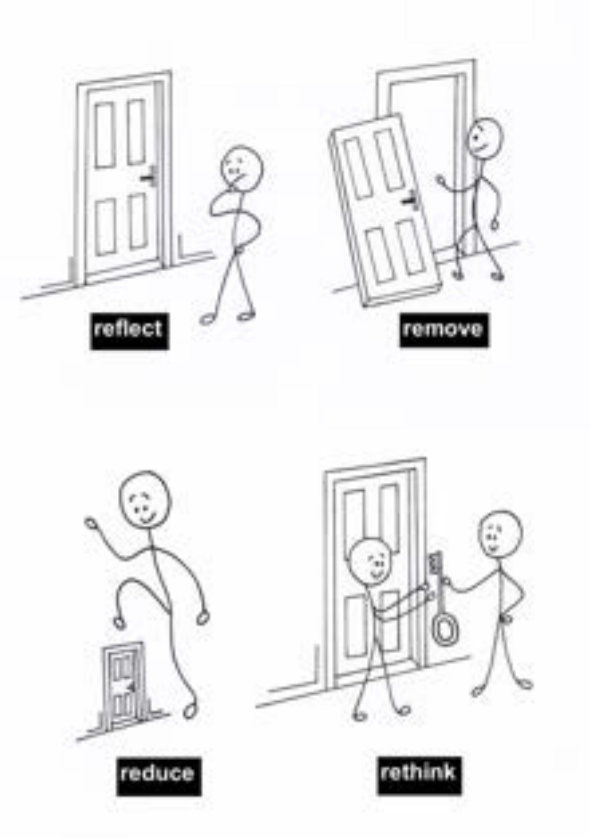
Rethink

Illustration by Rebecca Hurry in  
*Neurodiversity and Education*, Ellis, Kirby & Osborne (2023)



# Activity 5: The 3Rs

- ▶ Using one of the barriers from the last activity (either one provided or one that your group identified), [consider how you can apply the 3 Rs \(Remove, Reduce and Rethink\)](#) to help students
- ▶ Note how you could remove, reduce or rethink the barrier you have chosen
- ▶ Consider:
  - ▶ Interventions that you could make as a teacher at the [design](#) or [delivery](#) stage
  - ▶ [Strategies](#) your students might be able to draw upon to support their own learning in the classroom and beyond



# Quick wins for teachers



Make links between learning



Manage the environment



Offer choice



Break down information and tasks



Provide clear and explicit instructions



Back up verbal instructions with written ones



Balance interaction between listening and doing



Use visual prompts

# Quick wins for schools



Draw on your **knowledge** and **expertise** of your students and your local context



**Start small** with strategies that are easily adaptable; take incremental but sustainable steps



Prioritise **professional development** in inclusive teaching and learning



Implement **whole-school policies** that address inclusive education so that colleagues feel supported with a joined-up approach



**Evaluate impact** so that effective interventions can be scaled up and reproduced in different contexts

# Neurodiverse teachers

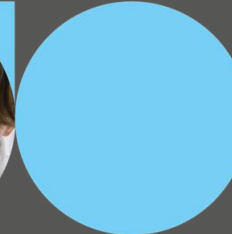
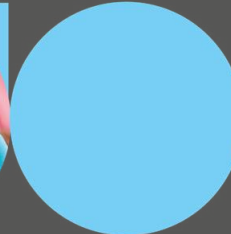
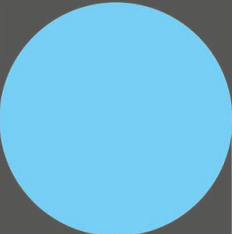
- Recruiting
- Onboarding
- Supporting
- Adjusting
  - Classroom
  - Staffroom
  - Staff meetings
  - Preparing lessons
  - Assessing and reporting
- Role-modelling



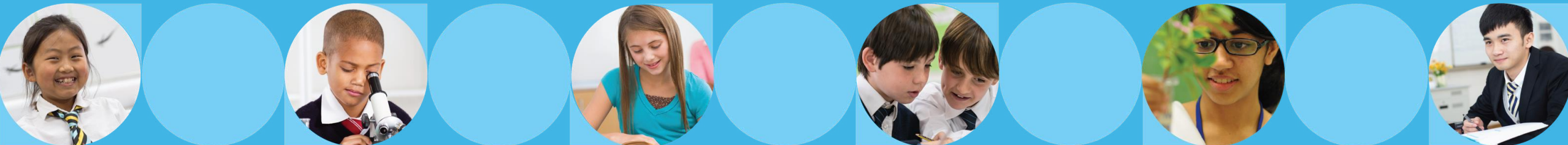
# Activity 6

- ▶ What could you do in your own school (or place of work) to **support** colleagues who are neurodivergent?



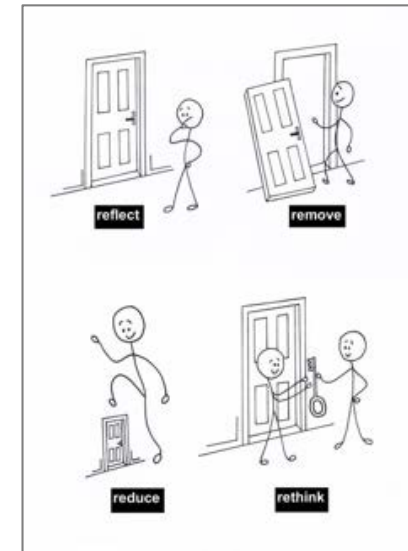
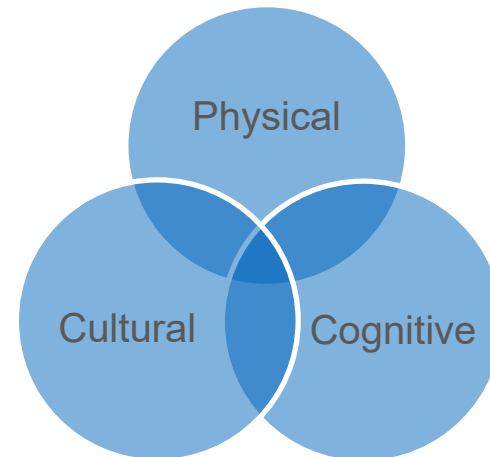
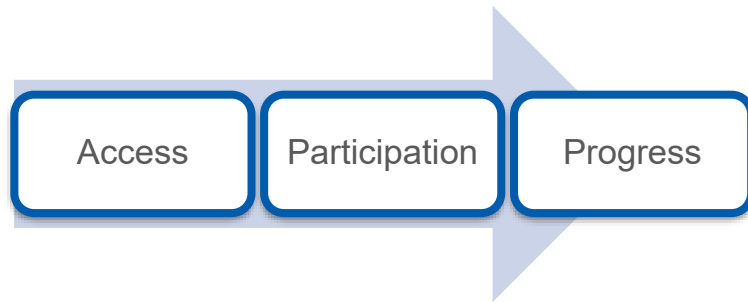


# In summary



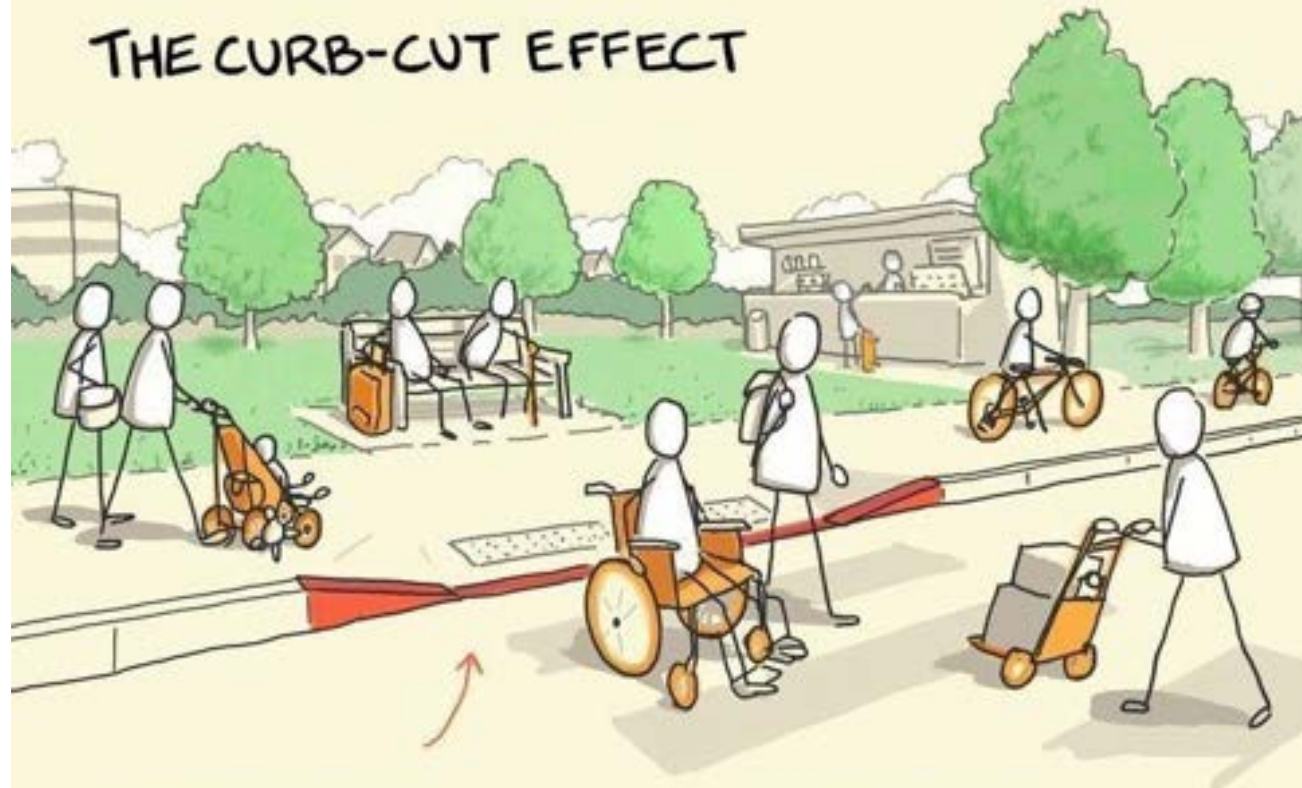
# Neurodiversity and education: Making teaching, learning and assessment more inclusive

**PERFORMANCE =  
POTENTIAL *minus* INTERFERENCE**





## THE CURB-CUT EFFECT



WHEN WE DESIGN  
FOR DISABILITIES

... WE MAKE THINGS  
BETTER FOR EVERYONE

sketchplanations

# Resources and next steps



**Cambridge Assessment International Education**

## Education Brief – Inclusive education

Inclusive education is commonly defined as teaching that engages students in learning which is meaningful, relevant and accessible to all. Inclusive education embraces the view that individual difference is a source of diversity, which can enrich the lives and learning of others (source: JISC).

**What does inclusive education mean?**

- The definition of inclusive education has evolved over time. Inclusive education was originally associated with improving access for students with Special Educational Needs (SEN) to mainstream education. The definition has developed more recently to ensure that those who 'struggle' and who are likely to leave the participation and progress of students.

**What is the theory behind inclusive education?**

- The original theory associated with inclusive education was based on the social model of disability, which sought to identify, label and accommodate students with SEN into mainstream education settings.
- The social model of disability has facilitated a shift away from the medical model and instead frames disability in terms of barriers (social, sensory) that undermine the individual's ability to succeed. Barriers could include, for instance, a lack of lift or ramps at a building, insufficient access to internet/computer software, or a busy web-site affecting learning environment. This concept of inclusion has now been broadened to include other groups, e.g. the ability or those with lower income, who are in danger of marginalisation (Frang, 2017).
- There has also been a further shift beyond the social model of disability, linked to the World Health Organization's (WHO) International Classification of Functioning (ICF), which focuses on the relationship between the individual and their environment.

**What other terms are associated with inclusive education?**

- Other terms that are commonly associated with inclusive education include:
- Special Educational Needs (SEN)** used to describe a range of needs including specific learning difficulties (e.g. dyslexia), autism, hearing/vision difficulties (HVD), autism spectrum disorder (ASD), giftedness, Attention Deficit and Learning Requirements, mental health difficulties, chronic language/communication conditions. This could also include psychosocial challenges, where a student's social or specific areas such as the arts, but may find the social aspects of learning or communication challenging.
- Reasonable adjustments** describe an employer's (or teacher's) duty to make adjustments to their work environment to ensure that people with disabilities can access the same opportunities as those without disabilities.

**What other terms are associated with inclusive education?**

- The ICF states that a person's level of functioning can change over time and is affected by a combination of factors, including their health, environmental factors and other personal factors (WHO, 2002). The threshold concept that supports the level of functioning is that of 'participation'.
- Inclusive education is increasingly becoming associated with the principle of Universal Design for Learning (UDL), which promotes flexibility in teaching and learning by providing learners with:
  - multiple means of representation (various ways of displaying information and knowledge)
  - multiple means of expression (the demonstrating what they know)
  - multiple means of engagement (to ensure learners' interests, challenge them appropriately and increase their motivation) (Meyer et al., 2017).
- The UDL approach ensures the curriculum and learning environment are usable by all learners to the greatest extent possible, reducing the need for individual adaptations.

[www.cambridgeinternational.org/education-briefs](https://www.cambridgeinternational.org/education-briefs)

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## Top tips for supporting students with special educational needs and disabilities before and during exams

By Lauren Woods | 25.03.22 | In Cambridge Learners, SEND, Teaching strategies | Comments 0

In the second of our two recent blogs giving tips for students as they prepare for exams, we are going to consider the needs of those who require additional support due to having special educational needs or disabilities (SEND).

Many students with SEND have faced challenges during the pandemic which have impacted on exam readiness. While many of these challenges are shared by all students, their effects are likely to be amplified for students with SEND. Moreover, many have experienced additional difficulties such as:

- changes in access to physical and mental health care
- inconsistent availability of learning support provision
- less opportunity for targeted exam technique practice
- reduced access to assistive technology
- a lack of routine, which is vital for many with SEND, especially those with mental health difficulties or with Autism Spectrum Conditions. [1]

So, what additional support could be offered to students with SEND to help them prepare as effectively as possible for their upcoming exams? Given the wide spectrum of SEND, there is no 'one size fits all' solution, but here are some ideas to consider:

<https://blog.cambridgeinternational.org/top-tips-for-supporting-students-with-send-before-and-during-exams/>



# Cambridge Outlook magazine



# Podcasts

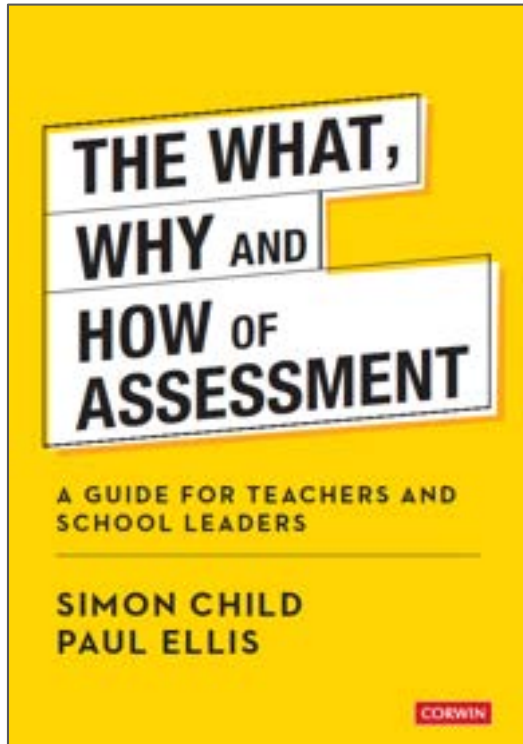
Cambridge Assessment Network Members Hub



1. Defining neurodiversity
2. Embracing neurodiversity

<https://brighterthinkingpod.libsyn.com/>

# Books



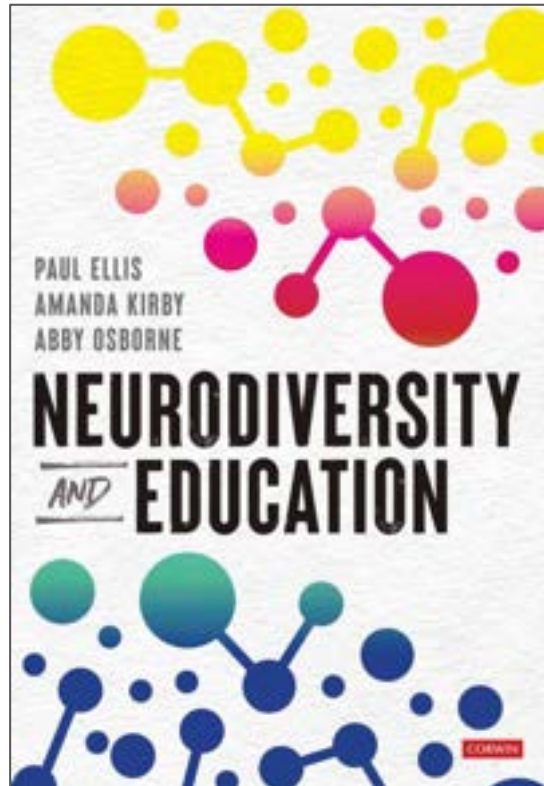
<https://uk.sagepub.com/en-gb/eur/the-what-why-and-how-of-assessment/book274787>

## Chapter 14: **Assessment for All**

*In this chapter, you will:*

- Learn about the challenges that some students may face when taking assessments
- Learn what assessment organisations do to enable students to access more traditional forms of assessment
- Explore some alternative assessment methodologies, such as designing assessments with inclusivity in mind.

# Books

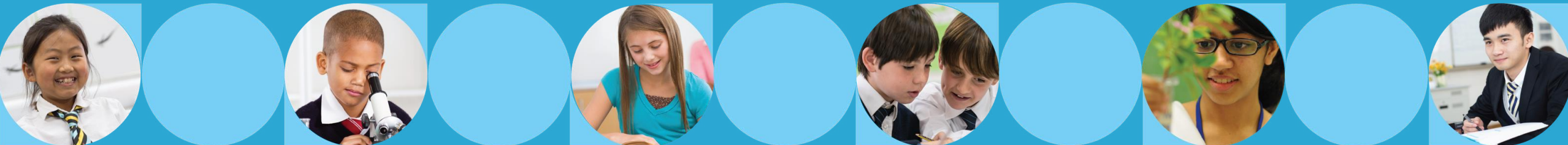


<https://uk.sagepub.com/en-gb/eur/neurodiversity-and-education/book281114>

## Contents:

1. What is neurodiversity?
2. Framing neurodiversity – past and present
3. The 3Ms – Missed, misdiagnosed and misunderstood
4. Mental health and wellbeing
5. Reframing
6. Universal design
7. The inclusive classroom
8. Teaching and learning
9. Assessing neurodiverse learners
10. Neurodiversity in the education workplace

# Thank you



# Your feedback

- ▶ Please let us know your views on this session
- ▶ Scan the QR code and share your feedback with us

