

Neuroscience for Teaching

Here's a concise, evidence-informed guide to assist teachers in special schools with integrating neuroscience principles into teaching, collaboration, and school processes. This guide draws upon recent research and best practices in educational neuroscience.

Neuroscience-Informed Practices for Special Schools

1. Neuroscience in Teaching and Learning

a. Embrace Neuroplasticity

Recognize that the brain can reorganize itself through experience.

Application: Provide repeated, varied learning experiences to strengthen neural connections.

b. Manage Cognitive Load

Be mindful of the limited capacity of working memory.

Application: Break information into manageable chunks and use visual aids to support understanding.

c. Incorporate Multisensory Learning

Engage multiple senses to enhance memory and understanding.

Application: Combine visual, auditory, and kinaesthetic activities in lessons.

d. Foster Emotional Safety

A safe emotional environment enhances learning.

Application: Build strong, supportive relationships and create a predictable classroom routine.

e. Utilize Active Learning Strategies

Active participation promotes deeper learning.

Application: Incorporate activities like group discussions, hands-on experiments, and problem-solving tasks. [structural-learning.com](https://www.structural-learning.com)

f. Implement Spaced Repetition

Spacing out learning sessions improves retention.

Application: Review material over increasing intervals rather than cramming.

2. Neuroscience in Adult Relationships and Collaboration

a. Promote Psychological Safety

A trusting environment encourages open communication.

Application: Encourage sharing of ideas without fear of judgment and acknowledge contributions.

b. Leverage Social Learning

Adults learn effectively through social interactions.

Application: Facilitate peer observations and collaborative planning sessions.

c. Support Executive Functioning

Executive functions are crucial for planning and decision-making.

Application: Use clear agendas, set goals, and provide checklists during collaborative tasks. [linkedin.com](https://www.linkedin.com)

d. Encourage Reflective Practice

Reflection consolidates learning and promotes growth.

Application: Allocate time for staff to reflect on practices and share insights.

3. Neuroscience in Meetings and School Processes

a. Design Brain-Friendly Meetings

Meetings should align with how the brain processes information.

Application: Keep meetings concise, focused, and interactive. Use visuals and limit the number of topics covered.

b. Incorporate Movement

Physical movement can enhance cognitive function.

Application: Include short breaks or activities that involve movement during long meetings. en.wikipedia.org

c. Apply the "Spacing Effect"

Information is better retained when learning is spaced over time.

Application: Distribute professional development sessions over several days or weeks.

d. Utilize Visual Aids

Visuals can aid in understanding and memory.

Application: Use charts, graphs, and images to convey information during presentations.

e. Foster Collaborative Decision-Making

Shared decision-making engages multiple perspectives and promotes buy-in.

Application: Encourage input from all staff members and use consensus-building techniques.

References:

"How Neuroscience Is Transforming Education: 7 Brain-Based Teaching Strategies That Work" – Inclusive Teach.

"Neuroscience-Informed Pedagogy With UDL Principles for Quality Instructional Design" – Pressbooks.

"Psychology, Education and Neuroscience (PEN) Principles" – University of Queensland Learning Lab.