

**NeuroHeart Education
Foundation**
2024



**COURSE
PORTFOLIO :**
**1.3 NEUROSCIENCE
IN THE CLASSROOM**

1.3 NEUROSCIENCE IN THE CLASSROOM – JUDY WILLIS

COURSE ABSTRACT

Judy focuses all of her courses on maximising and doctimising brain function, performance and results. Embracing all relevant information from neuroscience and neuro-psychology Judy helps teachers to navigate and introduce techniques and tools for learners to increase their performance capabilities.

We will be looking at four key areas where neuroscience can give a valuable insight and practical tools in order for you to best support your students' learning. We consider how to obtain the brain's attentive focus, unlock the stress and boredom blockades to learning, increase memory-making capabilities, and help students to develop their executive functioning, for lifelong cognitive success.

STRUCTURE

The four general description topics can be offered as presentations or several days of workshops.

COURSE CONTENT

Topic 1 - Obtaining and Sustaining the Brain's Attentive Focus

Multimedia access has changed the way students attend to their environment. The digital age presents a new set of challenges, but neuroscience has revealed the stimuli and circumstances that grab and sustain the brain's attention.

After experiencing the power of the "alien" that controls what sensory information gets into their own brains, participants will have greater awareness of what interventions are needed to get input accepted by the involuntary attention filter.

This topic focuses on using the correlations from neuroscience research to increase educators' toolkits for sustaining students' attentive focus, motivation, and memory by using strategies that promote their brains to want to know what they have to teach





Topic 2 - How Emotion Impacts the Brain's Learning; What to Do About It

Neuroscience research has spotlighted boredom and frustration as the stressors that frequently lessen students' abilities to engage in successful learning.

We've recognized that when these stresses are recurrent, they can alter the brain's neural networks, promote a fixed mindset, and decrease effort and motivation. What happens? Students can give up. They have more difficulty managing "top-down" control of the brain's reflective processing needed to sustain engaged, successful learning as their brains flip into more reactive, survival modes.

In this session, you'll gain new insights about how emotions and stress impact learning, as well as practical strategies to unlock the stress blockade that prevents the brain from doing its best work. For example, you'll learn interventions to promote motivation and perseverance by applying principles from the neuroscience.

These include strategies for increasing brain effort and learner engagement through buy-in, personal relevance, prediction, achievable challenge, variable options to achieve mastery for all learners, and recognition of individualized student incremental progress. Perhaps best of all, you'll leave better able to guide your students in moving from frustration to empowerment as they build their academic, emotional, and cognitive success.

Topic 3 - Promoting Understanding and Durable, Transferable Memory

Neuroscience research has revealed much about the stimuli and circumstances that promote the brain's most powerful information-processing networks and to increase memory construction, accuracy, durability, and retrieval.

In this session, you'll learn how the brain constructs physical links between new information and prior knowledge to successfully capture and retain learning. The correlations from this research will be linked to ready-to-use relevant classroom strategies.

Topics include the latest research on neuroplasticity, the power of patterning to increase transfer of new information into memory and mental manipulations for durable understanding for long-term memory storage, retention, and transfer. Your students will gain strategies and wisdom that can be applied both in school and transferred to new applications long after they have left your classroom.





Topic 4 - Using Brain Research to Help Students Develop Their Executive Functions

The brain's neural networks of highest cognitive skills and emotional control in the prefrontal cortex go through their most accelerated phase of development during the school years. Correlations with neuroscience research provide insight into how these developing executive function networks of can be strengthened by activation (use).

Through opportunities to use executive functions, such as prioritizing, cognitive flexibility, judgement, analysis, and reasoning, throughout the learning process, neuroplasticity will strengthen these networks in students' brains as they construct their understanding and build long-term, transferable concept memory. With the incorporation of executive function application throughout their learning, students will be best prepared to reach their highest cognitive, social, and emotional potentials.

In presentation topic, the neuroscience of the nature of the executive function networks and their maturational development are correlated to strategies to incorporate executive function network activation throughout the curriculum to build these circuits to their highest potentials



ABOUT JUDY

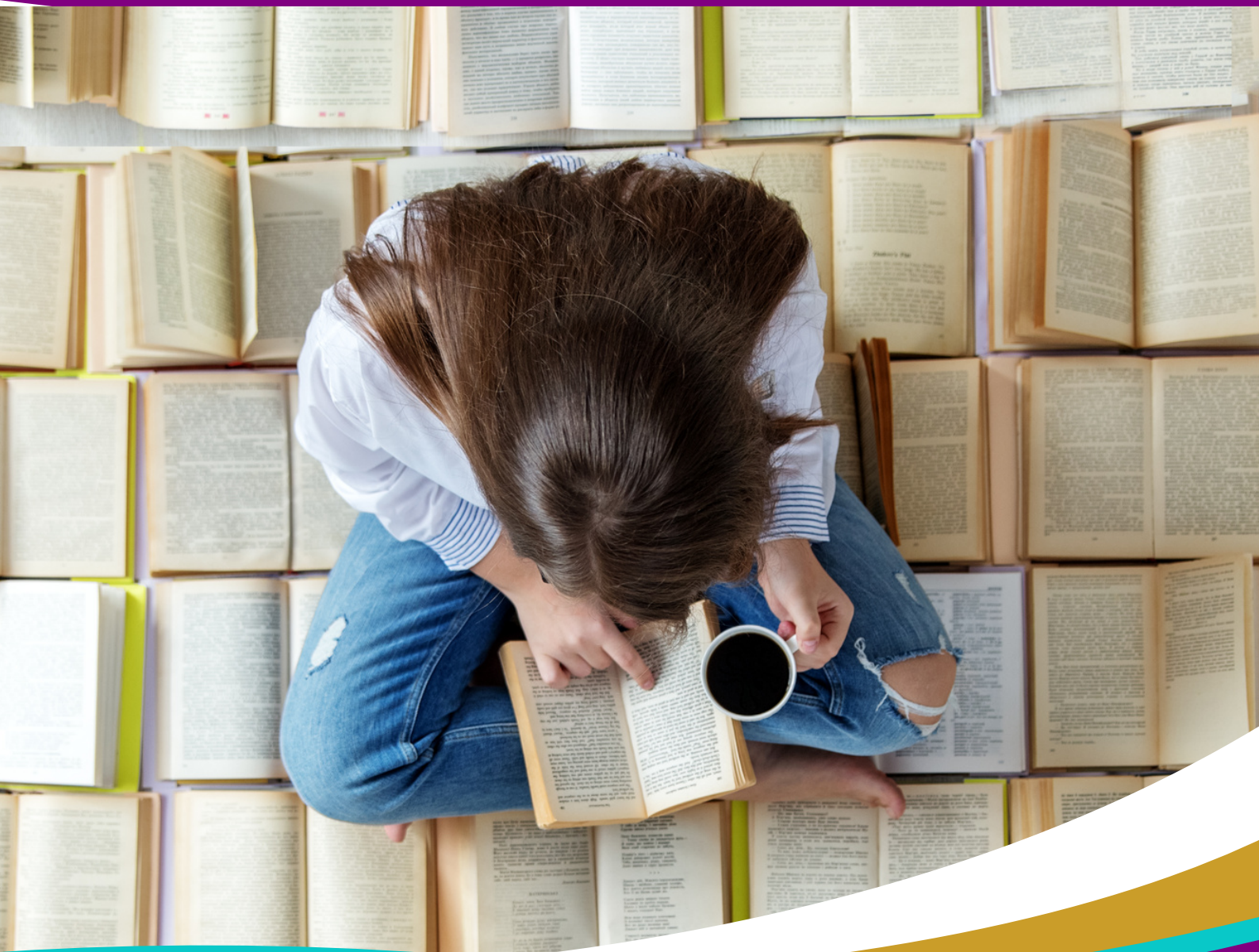
Dr. Judy Willis, a board-certified neurologist, combined her 15 years as a practicing neurologist with ten subsequent years as a classroom teacher to become a leading authority in the neuroscience of learning. With her unique background as both in neuroscience and education, she has written ten books and more than 200 articles about applying neuroscience research to classroom teaching strategies.

After graduating Phi Beta Kappa as the first woman graduate from Williams College, Willis attended UCLA School of Medicine where she was awarded her medical degree. She remained at UCLA and completed a medical residency and neurology residency, including chief residency. She practiced neurology for 15 years before returning to university to obtain her teaching credential and Masters of Education degree from the University of California, Santa Barbara. She then taught in elementary and secondary school for 10 years.

Dr. Willis is on the adjunct faculty of the Williams College and travels nationally and internationally giving presentations, workshops, and consulting about learning and the brain.

She has been interviewed by USA Today, Euronews, The Wall Street Journal, NBC News Education Nation, ABC Australia Radio, Lateline Australia, Popular Mechanics, Neurology Today, USA Today, Washington Post, Education Week, Medscope Neurology, Parenting Magazine among others, and writes staff expert blogs for NBC News Education Nation, Edutopia, Psychology Today, and The Guardian.

In 2011 she was selected by Edutopia as a "Big Thinkers on Education." She also has consulted for the World Bank about education design in developing countries, focused on Vietnam.



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