

In, Through and About

Why this old-school philosophy remains critical to Physical Education practice today

Dr Susannah Smith, PhD.

Physical Education New Zealand | Te Ao Kori Aotearoa
University of Canterbury | Te Whare Wananga o Waitaha

**Peter
Arnold's**
“In, Through,
and About
Movement”

Peter Arnold's Framework

About Movement

Examines the theoretical and philosophical aspects of movement, fostering critical thinking and understanding.



In Movement

Focuses on the intrinsic experience and execution of movement, emphasizing skill mastery and personal fulfillment.



**Through
Movement**

Explores the social and educational dimensions of movement, highlighting teamwork and collaborative learning.



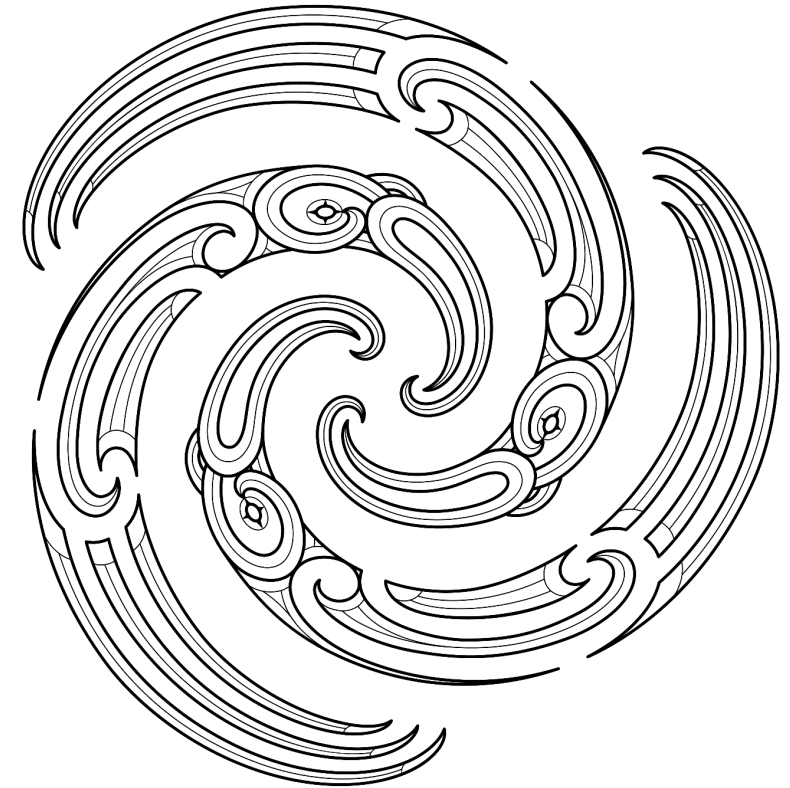
In Movement.

Definition: Focuses on the intrinsic experience and execution of movement itself, including the mastery of skills, techniques, and physical competencies.

Theory: This domain emphasises movement for its own sake. It is rooted in phenomenology, where the joy, challenge, and aesthetic satisfaction of physical activity are primary. Arnold aligned this with personal fulfilment and the inherent value of participation.

Practice:

- In PE, this might involve skill acquisition (e.g., mastering a basketball dribble) or exploring forms of expression, such as dance.
- Teachers aim to develop competence, refine motor skills, and encourage students to find pleasure in movement activities.
- Encouraging opportunities for creativity, flow state, and kinaesthesia and coenesthesia.



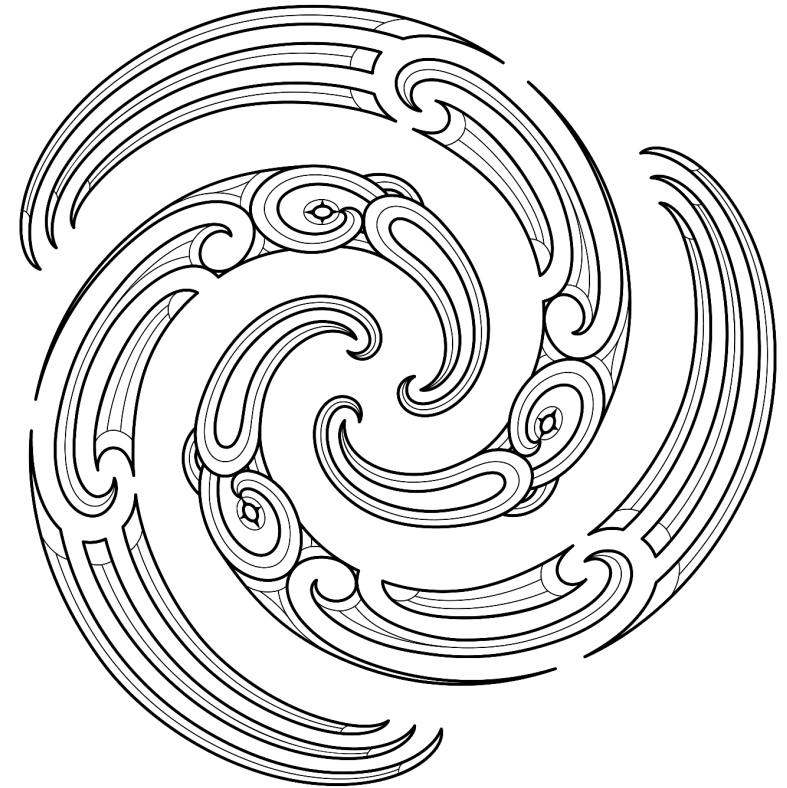
Through Movement.

Definition: Explores the broader educational outcomes derived from movement, such as social interaction, moral development, and emotional growth.

Theory: Arnold argued that movement serves as a medium for personal and social development. Through participation, students learn teamwork, leadership, resilience, and ethical decision-making.

Practice:

- Cooperative games where students solve challenges together, promoting communication and mutual respect.
- Reflective practices, such as discussing the emotions or values experienced during activities, further reinforce learning outcomes.



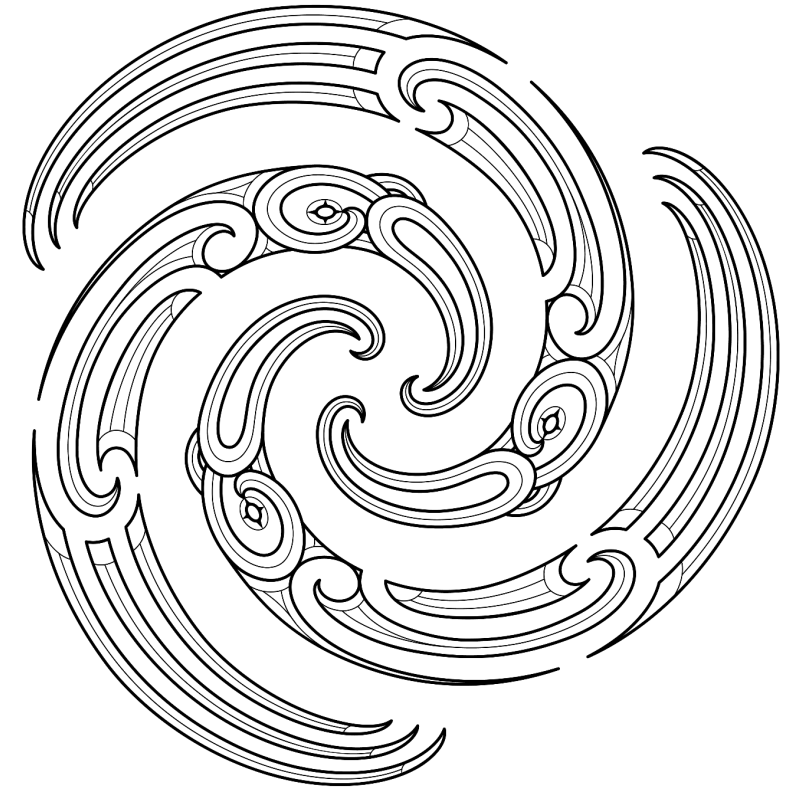
About Movement.

Definition: Involves intellectual engagement with movement, exploring its historical, cultural, and philosophical dimensions.

Theory: This domain connects physical activity to critical thinking and knowledge about movement, such as its role in society or the ethics of competitive sports.

Practice:

- Lessons might include debates on AI, VR, performance-enhancing drugs, cultural studies of indigenous games, or discussions on biomechanics and exercise physiology.
- Encouraging students to reflect critically on their own movement practices and societal influences on physical activity.



Integration of the Three Domains.

Arnold emphasised that effective physical education integrates these three domains.

Basic integration: “Gymnastics”

1. Focus on skill mastery (**in movement**),
2. Develop perseverance and peer support (**through movement**),
3. Examine gymnastics’ Olympic history (**about movement**).

Sophisticated integration: “Environments determine skill acquisition”

1. Focus on the environment (playground/riverbank)
2. Use constraints theory (skill acquisition) and mātauranga (holistic environmental knowledge) to critically analyse how the environment shapes skill learning (socially, physically, mentally and emotionally, spiritually).
3. The physical contexts teach the above (inquiry-based and hypothesis-based jumping over the river for example).

In, though and about movement are seamless.

Political and professional threats to I.T.A.



WHAT ARE SOME OF THE THREATS TO I.T.A.
MOVEMENT PRACTICES IN OUR SCHOOLS?

I.T.A. movement importance.

Our subject is founded upon *sciences of learnings*, not one specific ‘science’ of ‘learning’.

- Neuroscience (general, affective, social)
- Psychology (sociocultural, cognitive, developmental, evolutionary, informational processing and instructional)
- Cognitive anthropology
- **Embodied cognition**

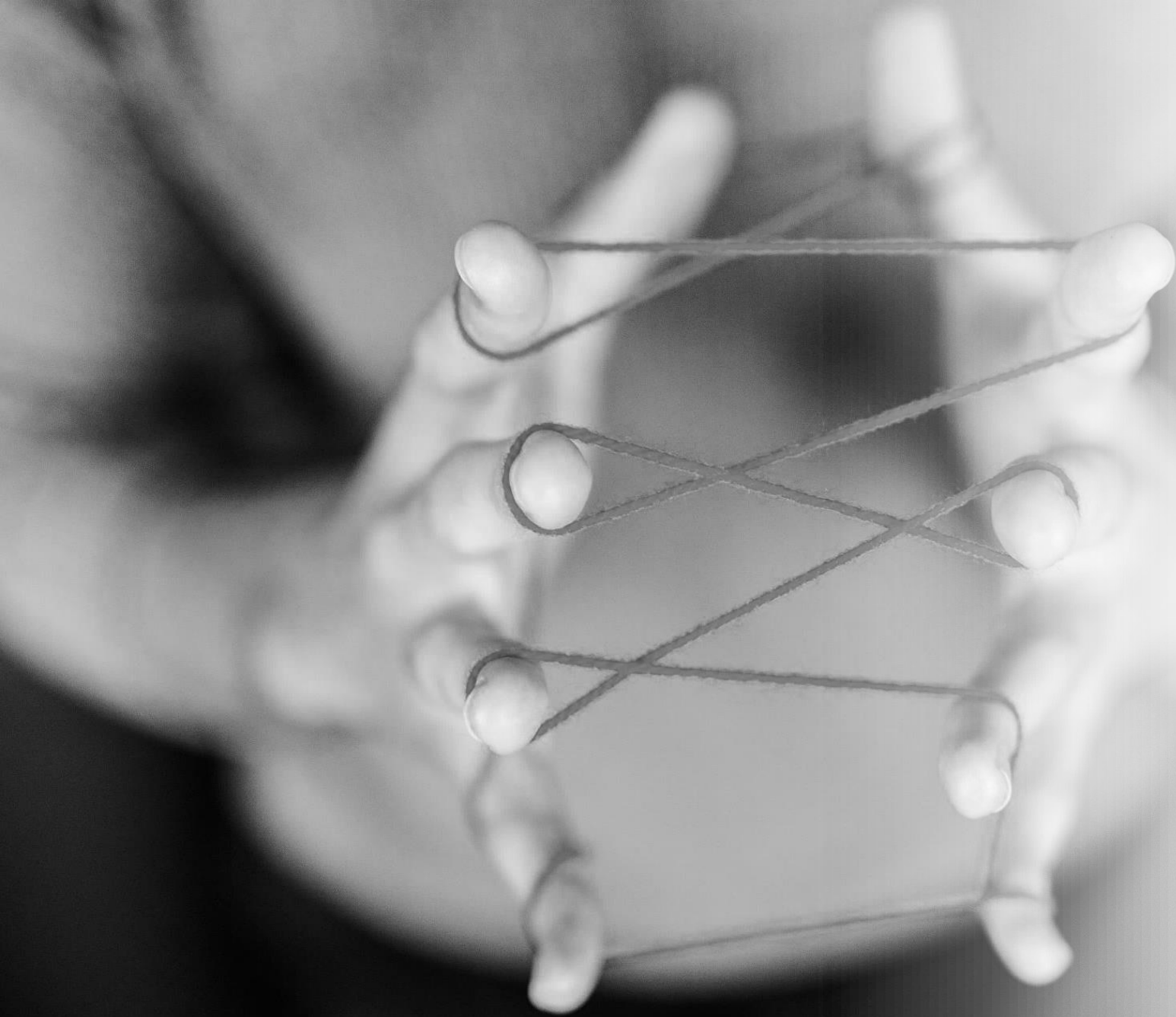
Guy Claxton – Sciences of learning for more, see his webpage and webinar:

[The Corruption of Science and The Practice of Teaching: Guy Claxton](#)

[Guy Claxton | Learning Power Approach](#)



Who has heard of
kinaesthesia?



Kinaesthesia

The perception of body movement and position, arising from sensory input from muscles, tendons, and joints. It is crucial for proprioception (awareness of body position in space) and motor coordination.

Kinaesthesia enables individuals to detect changes in body position and movement without relying on visual cues.

"the sensory awareness of movement and position of body parts relative to each other, mediated by mechanoreceptors in muscles, joints, and tendons" (Sherrington, 1906).

Kinaesthesia provides the sensory feedback necessary for understanding and interacting with the physical world.

Movements of the body contribute to how we think, learn, and process information.

Through movement and proprioception (awareness of body position), kinesthetic feedback influences cognitive processes like problem-solving, spatial reasoning, and memory.

Example: When solving a puzzle, people might gesture or physically manipulate objects, which helps them think through spatial problems.

kinaesthesia supports the idea that cognition is not confined to the brain but extends to the body's interaction with the environment. Movements influence how abstract concepts are learned, such as associating hand movements with counting.



Practical Examples of Kinaesthesia:

1. Walking Without Looking:

When walking in a dark room, kinaesthesia allows you to coordinate your legs' movements and maintain balance without needing to see your steps. Your sense of joint angle and muscle tension guides your gait.

2. Sports and Athletic Performance:

A basketball player shooting a free throw relies on kinaesthetic feedback to adjust the force, angle, and motion of their arm without focusing on the mechanics of the movement. This "muscle memory" is a kinaesthetic skill.

3. Typing on a Keyboard:

Experienced typists do not look at their hands while typing. Kinaesthetic awareness allows them to know the position of their fingers and move them accurately over the keys.

4. Playing a Musical Instrument:

A violinist uses kinaesthesia to feel the precise placement of their fingers on the strings without constantly watching their hands.

5. Practicing Yoga or Dance:

During yoga, practitioners rely on kinaesthesia to maintain balance and execute poses while being aware of how their limbs and torso are positioned. Similarly, dancers use kinaesthetic sense to maintain fluid movements in choreographed sequences.

6. Reaching for an Object Without Looking:

When you reach for your phone on a desk without looking, kinaesthesia enables your hand to move accurately to the object's location based on your memory of its position.

Think of some situations.

- What it feels like walking on a beach vs. asphalt
- Observing a young adult going through puberty and a growth spurt
- Watching a toddler learn to walk
- Playing a sport you know, vs. learning a new one
- Knowing the distance you need to jump to clear a gap without measuring it



Who has heard of
coenaesthesia?

Coenesthesia

A general sense of bodily awareness arising from the internal sensations of the body. It encompasses the unified perception of various internal signals, such as physiological temperature, pain, balance, muscle tension, and organ functioning reflecting the collective, holistic experience of internal bodily states. It is distinct from specific senses (like touch or sight) and is more about the subconscious or generalized awareness of the body's condition.

"the awareness of the internal milieu of the body, often described as a diffuse and integrative sense of the body's state, facilitating homeostasis and bodily coherence" (Damasio, 1999).

This is indirectly shaped sociologically and culturally and directly shaped psychologically through mental health and emotions.

Practical Examples of coenaesthesia:

1. Fatigue and Recovery:

After intense physical exercise, a person might experience an all-encompassing sense of exhaustion. This feeling combines muscle soreness, reduced energy levels, and an internal sense of needing rest, which is an example of coenaesthesia.

2. General Wellness or Discomfort:

Feeling "off" or "under the weather" without specific symptoms, such as in the early stages of illness, is an example of coenaesthesia. The body communicates through a blend of signals that something is not right.

3. Proprioceptive Awareness During Yoga:

While practicing yoga or meditation, individuals often tune into their coenaesthetic sense to feel the alignment, balance, and flow of energy within their bodies.

4. Balance and Posture:

A person adjusting their posture to avoid discomfort without thinking consciously about it is guided by their coenaesthetic sense of equilibrium and bodily tension.

5. Emotional Integration:

Emotional states like anxiety often manifest in the body as a coenaesthetic experience, combining rapid heartbeat, muscle tightness, and a "gut feeling" of unease.

6. socio-cultural Integration:

Culturally, we may change our disposition to an activity if our culture prescribes we do so. Our parents suppressed stressors and fatigue to 'perform' and therefore we should too.

Think of some situations.

- A student trying to suppress the 'giggles' or sit still and that impacting their ability to focus.
- Awareness and verbalisation of a 'mental' block at one end of the volleyball court with serves – it 'feels' wrong.
- Nursing an injury and therefore changing the way you move
- Ignoring fatigue or the cue to move for 'productivity' or social norms.

The difference between **kinaesthesia** and **coenaesthesia** lies in the focus of bodily awareness:

1. Kinaesthesia:

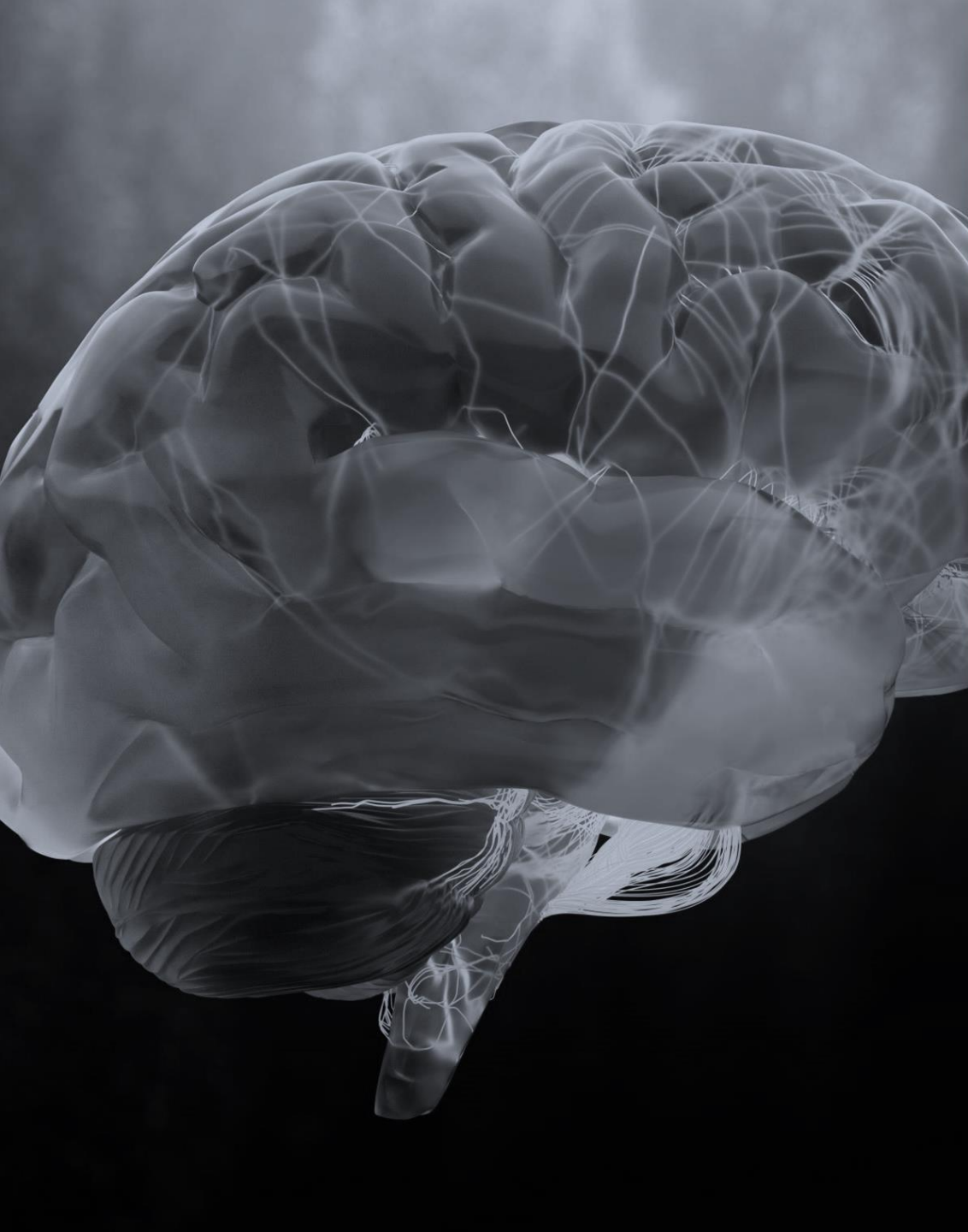
1. Refers specifically to the sense of movement and position of body parts.
2. It relies on feedback from muscles, tendons, and joints to provide an awareness of motion and spatial orientation.
3. Example: Knowing the position of your arms while swimming or being aware of your leg's motion while walking.

2. Coenaesthesia:

1. Refers to the general awareness of the internal state of the body as a whole.
2. It integrates signals from internal organs, muscles, and the nervous system to give a sense of bodily well-being or discomfort.
3. Example: Feeling a general sense of fatigue after a long day or noticing a vague sense of "heaviness" when ill.

Key Difference:

- **kinaesthesia** is about the *movement and position* of body parts, whereas **coenaesthesia** is about the *overall bodily state* and internal sensations.
- Both concepts contribute to body awareness but operate in different domains—kinaesthesia for external movement and coenaesthesia for internal bodily coherence.



Coenaesthesia and Embodied Cognition

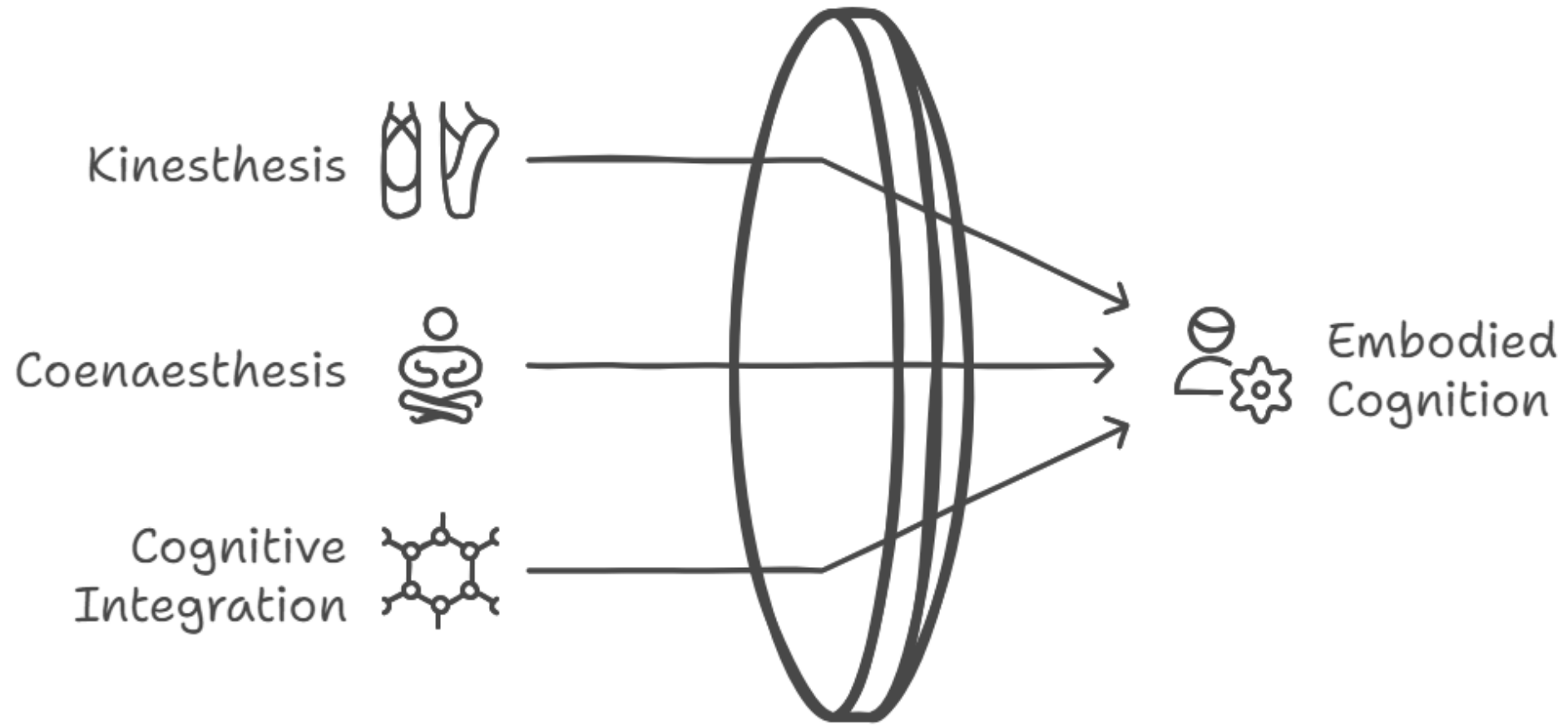
Coenaesthesia contributes to embodied cognition by providing a *global sense of bodily state*, which shapes emotional and cognitive experiences.

The body's internal sensations—such as fatigue, hunger, or arousal—
affect mood, decision-making, and perception. These states create a
foundation for our understanding of the world and ourselves.

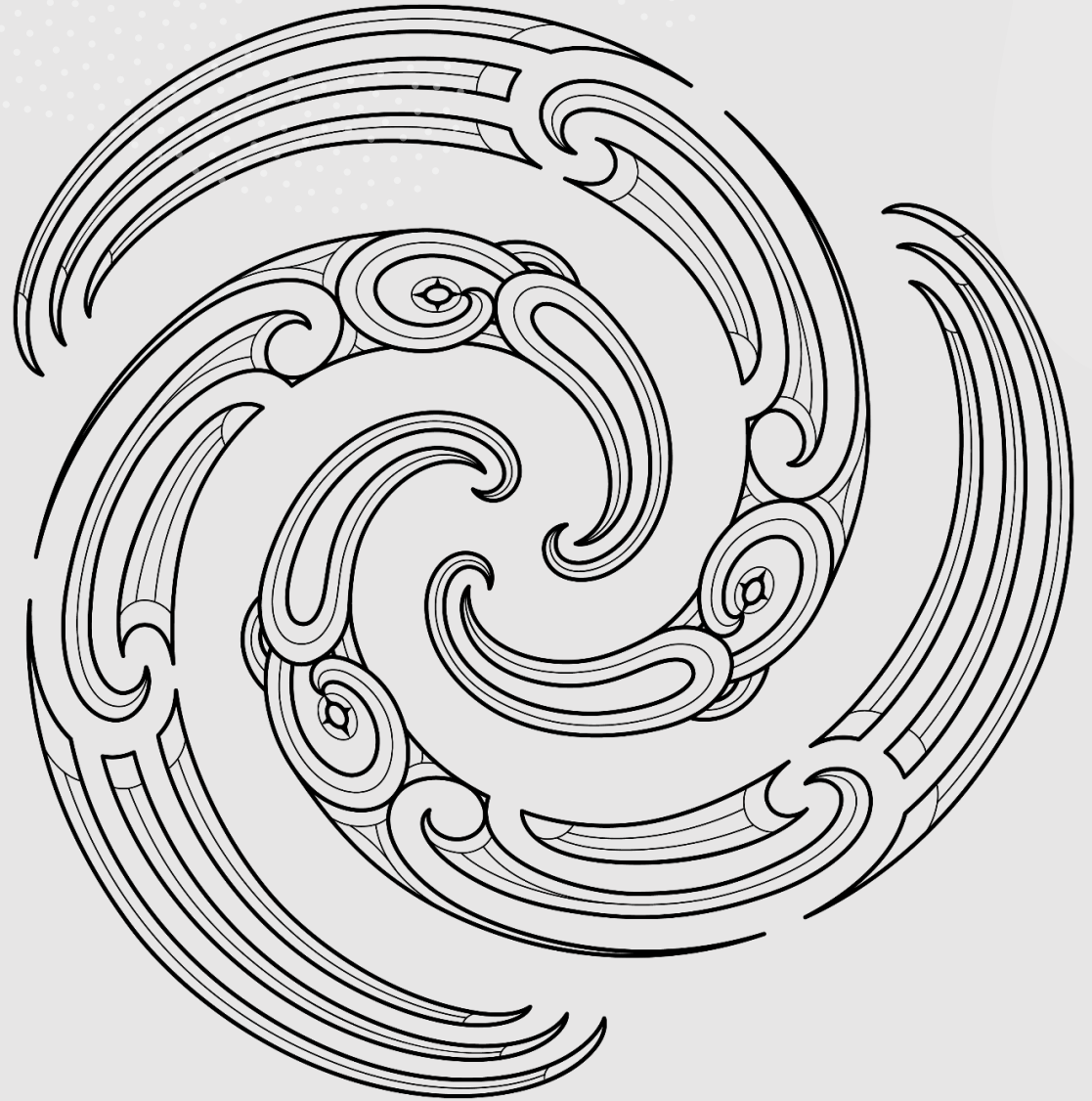
Example: When feeling relaxed (a coenaesthetic state of calm),
people may be more open to creative thinking. Conversely, an
anxious state might narrow attention and influence risk
assessment.

This connection highlights how bodily sensations and internal
awareness are integral to cognitive and emotional processing.

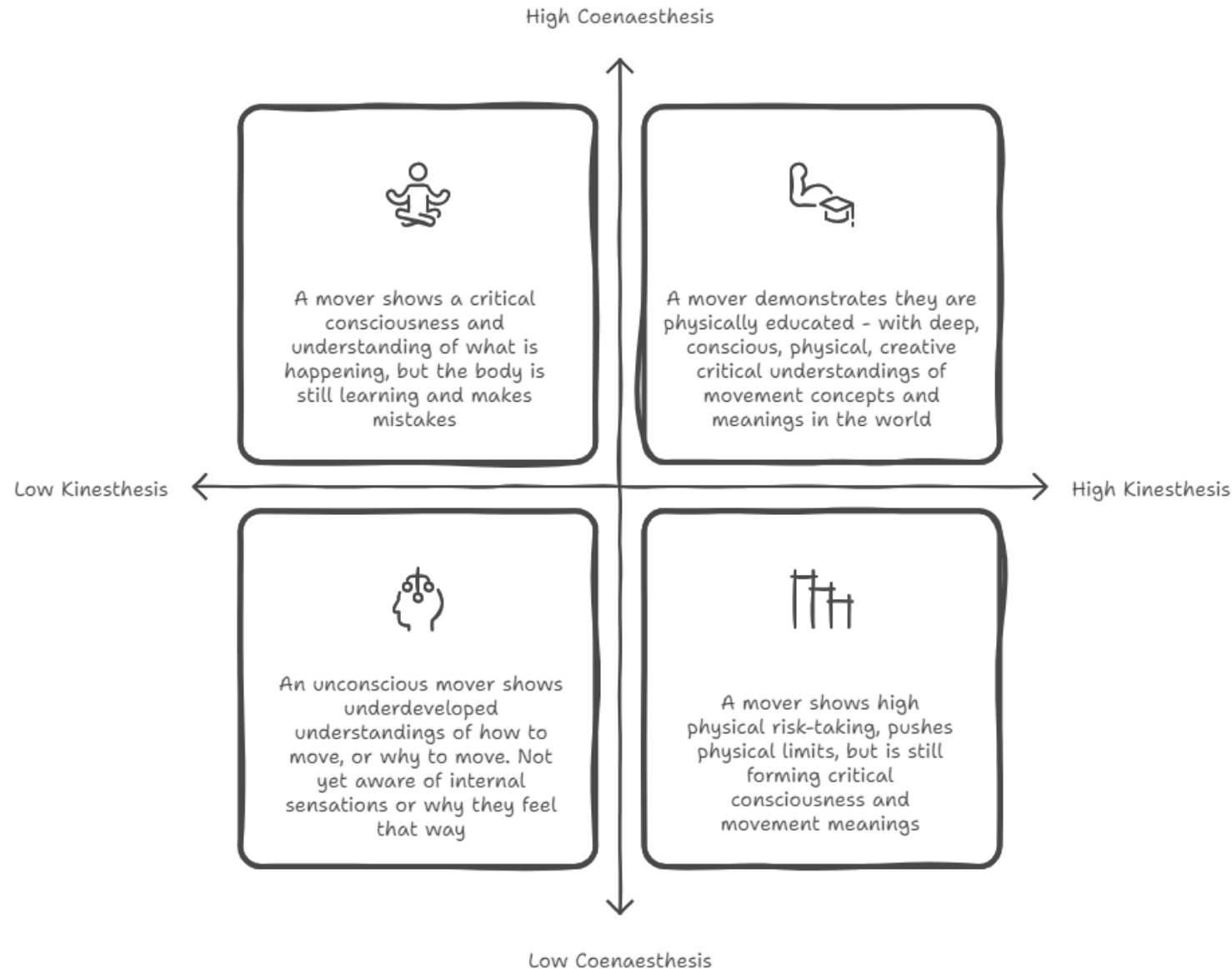
Interconnected Senses and Thought



In physical education
we leverage
embodied cognition
to deepen
understanding of
concepts.



Practical Applications of Kinesthesia and Coenaesthesia in movement.



What matters.

Mātauranga Māori

- A lot of the time, Te āo Māori **IS** embodied cognition. Body/mind/soul
- Socio-critical contexts to disrupt sport and movement 'norms' (equipment, use, environments etc).

Pedagogical selection

- Matters and should be connected to the knowledge/learning context/threshold concept you want them to learn.
- In, Through and About – think of it like Hauora.

Joy prioritisation

- Aesthetics and pleasure as viable outcomes of lesson planning.
- The 'in' movement as a valued priority.

Additional references.

Arnold, P. J. (1979). *Meaning in Movement, Sport, and Physical Education*. London: Heinemann.

Arnold, P. (1968). *Education, physical education and personality development*. London: Heinemann.

Arnold, P. (1979). *Meaning in movement, sport and physical education*. London: Heinemann.

Arnold, P. (1994). Sport and moral education. *Journal of Moral Education*, 23(1), 75-89.

Arnold, P. (1998). *Sports ethics and education*. London: Cassell.

Arnold, P. (1999). The virtues, moral education and the practice of sport. *Quest*, 51(1), 39-53. doi:10.1080/00336297.1999.10491667

Bailey, R. (2005). "Evaluating the Relationship Between Physical Education, Sport, and Social Inclusion." *Educational Review*, 57(1), 71–90.

Brown, T. (2013). A vision lost? (Re)articulating an Arnoldian conception of education ‘in’ movement in physical education. *Sport, Education and Society*, 18(1), 21-37.

Brown, T., & Penney, D. (2013). Learning ‘in’, ‘through’ and ‘about’ movement in senior physical education? *The new Victorian Certificate of Education Physical Education. European Physical Education Review*, 19(1), 39-61. <https://doi.org/10.1177/1356336X12465508>

Capel, S., & Whitehead, M. (2013). *Debates in Physical Education*. Routledge.

Kirk D (2009) *Physical Education Futures*. London: Routledge.

Stolz, S. A., & Thorburn, M. (2017). A genealogical analysis of Peter Arnold’s conceptual account of meaning in movement, sport and physical education. *Sport, Education and Society*, 22(3), 377–390. <https://doi.org/10.1080/13573322.2015.1032923>