

# NAVIGATING INTELLIGENCE

THINKING ABOUT PHYSICAL  
INTELLIGENCE, THE ROLE OF  
THE BODY IN LEARNING AND  
WAYS THIS COULD IMPACT  
OUTDOOR LEARNING



## AUTHOR

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Having previously worked across the health, fitness and education industry as a coach, trainer, advisor and qualified primary school teacher, Richard has developed an interest in the physicality of learning, from a scientific and philosophical perspective. This has led to current explorations of the concept of physical intelligence as a PhD project, and people's experiences of physical intelligence through running.



Navigating intelligence? Sounds like something you'd expect an experienced mountain leader or arctic adventurer to possess. And it certainly could be. But could it also mean something else?

To me, in this article, it refers to a wider exploration of the intelligence landscape: what is out there to know about intelligence, where is intelligence located and how does intelligence look from different viewpoints?

Whilst the term 'intelligence' is widely used, and most people would be able to identify individuals or instances they believe to demonstrate intelligence, there is still no universally agreed definition of what intelligence actually is! Explored from the perspectives of both science and philosophy, the concept of intelligence has certainly been subjected to intense scrutiny and debate. This has created a rich landscape of knowledge, models and theories that can support those working in the fields of Outdoor Learning and education.

For example, challenging the common perception that intelligence is a single thing, measurable by IQ, Howard Gardner, in the 1980's and beyond, proposed a theory of 'Multiple intelligences' (1) — see figure one.

Where traditional education has fixed it's gaze narrowly on logical and linguistic intelligence, the holistic nature of Outdoor Learning provides a vast array of opportunities to develop other intelligences beyond the traditional classroom smarts.

For example, building intra-personal (also known as emotional) intelligence by negotiating challenging land or water-based environments or developing inter-personal (also known as social) intelligence through team-based problem-solving activities or co-operative play.

This rich, and somewhat uncharted, territory also affords the potential for further exploration. Nestled amongst the broader view of intelligences lies bodily-kinesthetic intelligence.

With my background in health and fitness, I have always been fascinated by the thought of a 'physical' intelligence, and became even more intrigued when I stumbled across a book titled *Intelligence in the flesh* by renowned educational psychologist Guy Claxton. In it, Claxton makes a bold claim; **that bodily or physical intelligence isn't just another type of intelligence, but is in fact the foundation for all intelligences** (2).

Sparking a desire to explore this further, I recently set out on a research adventure to navigate the wider intelligence literature, guided by input from individuals across the movement and education sectors, in an attempt to map the concept of physical intelligence for my PhD. The purpose of this article is to share some of my explorations to date, considering what physical intelligence could be, the role of the body in learning and ways in which this could impact Outdoor Learning practice.

Neglected bodies

Whether based around the singular notion of IQ, different types of intelligence or the overall purpose of intelligence in life, there is a general agreement that intelligence is a property of mind (or brain). Unfortunately, this point of view essentially removes mind from body, relegating the body to be considered as a mere biological machine under the control of the brain; a thing simply to be kept fit and healthy.

The idea that mind and body are two separate things (dualism), with the mind being more important than body (mind-over-matter), dominates western thinking, and educational practice in particular. The prioritisation of the logical and linguistic intelligence-based subjects such as English, Maths and Science is a prime example, with little consideration given to the body outside of Physical Education (P.E). P.E. itself can often suffer in reverse, with it's obsession with sport and being physically active resulting in a narrow, though well-intentioned, focus on health and neglecting the wider role of the body in learning.

But what if we invert this view and focus instead on the connections, indeed the inseparability, of body and mind?

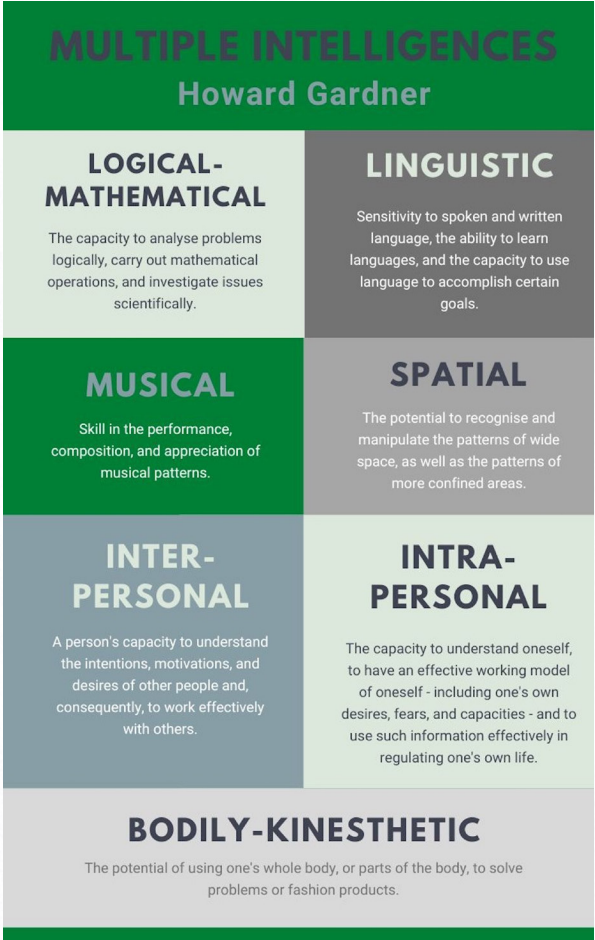


FIGURE ONE: Multiple intelligences

Debate surrounding the 'body-mind' problem can be traced back at least as far as the Ancient Greeks – though the stimulus for this viewpoint arguably dates back to the literal rise of head over heels as our ancestors, the early hominids, developed the unique capacity amongst mammals to walk upright on two feet some two million or more years ago.

Intriguingly, it is an evolution-informed standpoint that helps us to reconnect body and mind, providing evidence that there is much more to our physicality than we currently think.

Getting to grips with physical intelligence

Key to a species' survival is the ability to find food, stay warm and avoid being eaten, all tasks that require movement and intelligence. Delving all the way back to some of the earliest forms of life on earth, physical bodies existed before brains, indicating that movement and intelligence are possible without a brain to make any decisions. Indeed, recent research from ecological psychologists suggests that nervous systems, and therefore the brain, originally evolved to support intelligent movement (3).



## NAVIGATING INTELLIGENCE

Further evidence for the importance of physical intelligence can be found within the work of Jean Piaget (4), who highlights the importance of movement in the sensorimotor phase of his learning theory (see page 30).

It is through physical movement and sensory perception that a child is able to learn about the world, all the while forming connections between body, brain and world that result in enormous growth in brain size.

Unfortunately, by suggesting this phase dominates for just the first two years of life, the bodily focus quickly fades into the background once children enter formal education (Early Years notwithstanding). So, it seems to me that Guy Claxton may well be right: that physical intelligence could be the foundation for all intelligences.

Movement is clearly important for learning and development. The early evolutionary role of the perceived organ of intelligence, the brain, was to enhance the ability to move. But does this bring us any closer to understanding what physical intelligence might actually be?

Well, yes. And no! Against a background of failed attempts amongst the scientific community to come to any consensus over what intelligence is, it would be foolish to think I'd be able to construct a clear-cut answer for what physical intelligence definitively is!

What I can offer, however, is suggestions for what it might include, based on some recurring features across the research literature which help to identify intelligent behaviour. These include: the ability to solve problems, to learn and adapt, and the idea that intelligence plays a vital role in life success (5).

Therefore, based on these central ideas, the definition of bodily-kinesthetic intelligence as proposed by Gardner, and ideas collated

from participants in my research, I tentatively propose that physical intelligence demonstrates an individual's ability to solve problems through movement, in relation to both their internal environment (physical body) and surrounding external environment (physical and social). See figure two.

Furthermore, physical intelligence demonstrates an individual's ability to learn from their experiences and apply or adapt their understanding in different contexts and future situations.

### Thinking beyond physical activity

So, what does this mean for Outdoor Learning and where might this understanding lead us?

Being outdoors and physically active will naturally require and challenge physical intelligence; technical skills to move through different environments, fine motor skills when working with tools and the complex interaction of cardiovascular and musculo-skeletal systems that enable running, jumping, climbing and free-play. But can we do more to enhance the development of physical intelligence and make the most of what the outdoor environment affords?

Often the thought is simply about keeping our body active. Whilst being physically active is important for overall health and wellbeing, can we expand the narrow focus on duration and intensity of activity (aka calorie counting), and also incorporate exploration of how well we move, our awareness as a moving body and how we feel whilst moving?

Do your movements feel fluid and effortless, or stiff and mechanical? Do you move freely and without pain, with every part of your body contributing to the movement as required or are certain parts, consciously or unconsciously, neglected or over-worked? Can you find different ways to solve different movement problems?





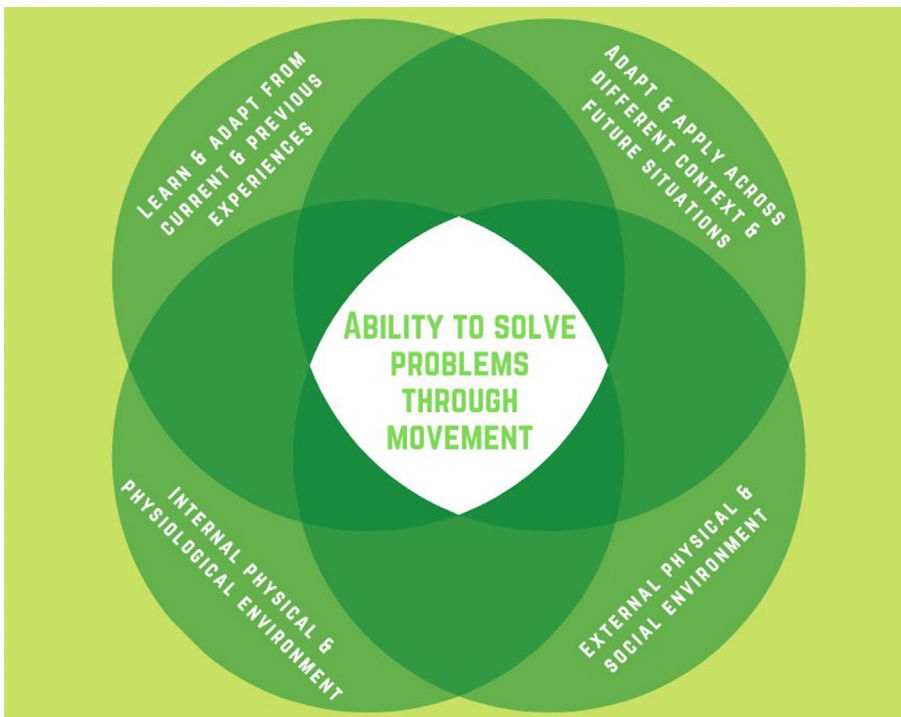


FIGURE TWO: Solving problems through movement

The varied, dynamic outdoor environment naturally provides continual stimulus for us to learn and adapt our movements: walking over uneven ground, climbing over rocks or balancing along fallen logs, for instance. But don't just find one way to climb a tree or balance along a log; actively seek out alternative routes, vary foot and/ or hand placements, vary the speed or add turns or twists.

Feel how this changes the way each part of your body moves, tuning in to the subtle adjustments you are making to maintain fluency and stability. Challenge your balance in different positions, move your head, close your eyes, hold out an arm or a leg, but do so attentively. These are all examples of opportunities to apply previous skills to new experiences, to continue the process of learning and adaptation, and which place significant demands on our bodily sensory systems; both interoceptive (sensing our internal physiological and emotional state) and exteroceptive (sensing directed towards external environment including visual, auditory and tactile).

Use of these sensory systems could be considered as examples of body language, the language of physical intelligence, learning to listen and connect to each and every part of your body. Our emotional states likewise have a physical and physiological basis, and can be influenced by our breathing and postures. Standing tall when facing a challenge can help you to feel more confident, for

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1. Gardner, H. (1999). *Intelligence reframed: multiple intelligences for the 21st century*. New York: Basic Books.
2. Claxton, G. (2015). *Intelligence in the flesh: why your mind needs your body much more than it thinks*. London: Yale.
3. Fultot, M., Frazier, A., Turvey, M. & Carello, C. (2019). What are nervous systems for? *Ecological Psychology*, 31:3, 218-234.
4. Piaget, J. (1953). *The origin of intelligence in the child*. London: Routledge and Kegan Paul.
5. Sternberg, R. J. (2020) 'Rethinking what we mean by intelligence', *Phi Delta Kappan*, 102(3), pp. 36-41.

FIGURES

1. Gardner, H. (1999) *Intelligence reframed: multiple intelligences for the 21st century*. New York: Basic Books. Note: The graphic includes seven intelligences as originally proposed by Gardner, but additional intelligences have also been suggested, including 'naturalist' intelligence which refers to the ability to understand living things and read the natural world.
2. Supplied by the author

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example, or learning to breathe, relax and release unnecessary bodily tension may help to overcome fear. Being able to read and relate to the body language of others is also a vital aspect of social communication, teamwork and leadership.

Acknowledging the existence and importance of physical intelligence therefore elevates the value of physical activity to beyond something simply done for fun, health or exploration, potentially adding even greater meaning to an array of already purposeful Outdoor Learning activities. None of what I've written here is necessarily 'new'.

Rather, much of it is the development or repurposing of concepts and ideas already in existence, but that may have previously been overlooked or hard to find. Conscious awareness of the moving body features strongly in dance and somatics; for example, breath is central to the ancient arts of yoga and qigong, and the rapidly developing science of ecological dynamics highlights the importance of movement variety.

My research adventures to date have allowed me to unearth a deeper understanding of physical intelligence, bringing attention to its potential importance and ways in which it can be enhanced. It is hoped that as my research continues, I will be able to uncover further valuable insights and investigate the impact of these ideas in practice ■

LEARN MORE ABOUT THE SENSORIMOTOR STAGE

The sensorimotor stage is the first stage of a child's life.

Watch a short introduction to Piaget's stages of cognitive development.

Click [here](#).



THE WAY OF THE ROPE

Find new ways to explore the connections between body, brain and environment on page 5.