The Natural Learner

The Freedom to be my Self

by Wendy Ellyatt

'I believe our only hope for the future is to adopt a new conception of human ecology, one in which we start to reconstitute our concept of the richness in human capacity.'

- Ken Robinson -

'We need to cultivate...an atmosphere of reciprocal help and socialization. Implicit in this is a decisive response to a child's need to feel whole.

Feeling whole is a biological and cultural necessity for the child (and also for the adult). It is a vital state of well-being'

- Loris Malaguzzi -

First published in Great Britain in 2013 by

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The Natural Learner

Wendy Ellyatt

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'Children have the right to be recognised as subjects of individual, legal, civil, and social rights; as both source and constructors of their own experience, and thus active participants in the organisation of their identities, abilities, and autonomy, through relationships and interaction with their peers, with adults, with ideas, with objects and with the real and imaginary events of intercommunicating worlds. '

The Charter of Rights found in every Reggio Emilia school in Italy

A Journey into the Rights of Children
The Unheard Voice of Children series, Reggio Children, 1996.

"The intuitive mind is a sacred gift and the rational mind is a faithful servant.
We have created a society that honors the servant and has forgotten the gift."

Albert Einstein

The need for change

It's a very strange thing that modern education systems are still stuck in such old-fashioned ruts - when the world around them has changed so profoundly and has re-affirmed that we are such amazing natural learners. We really don't need much encouragement as we are pre-programmed to seek out from the environment what serves each of us best as individuals. It is how nature made us. We also all have our own maps of the world and cognitive styles.

Most education systems, however, rely on models that neither recognise our innate natural abilities nor acknowledge the drastically different environment of the modern technological age.

Over the last fifty years experts around the world have been exploring the nature of human learning and potential. We now know much more about human development and modern research is showing us just how diverse and sensitive we are as individuals. We are beginning to understand that we are all uniquely different, that we need to fulfil our innate qualities and potentials to grow as happy, healthy and creative individuals and that we are social beings that function in dynamic connectivity with others.

When we are relaxed and happy we learn quickly and well. When we are anxious and fearful we learn slowly and poorly. We are also beginning to appreciate that the simple acquisition of knowledge is not enough. And that what we really need are more adults in the world who have the wisdom to use their knowledge responsibly

Introduction

From the moment that we are born, and even before, we are learning. We have both conscious and subconscious minds and during early childhood our brains function primarily in the Alpha and Theta brain wave states. That means that we effectively 'absorb' impressions from the environment - recording and storing everything that we see, hear, feel, taste and smell. Our core beliefs about the world are being formed and our subconscious is programmed to respond automatically to the relevant input. Over time, however, we start to more consciously connect with the world and we then learn to rationalize, compare and categorize. After the age of six or seven we start functioning ever more actively in the Beta or “thinking” brain wave state and, depending on how much the left-hand functions of the brain are reinforced, our more holistic ways of experiencing the world are replaced with more objective and rational interpretations.

As we experience life, however, our subconscious mind continues to maintain the beliefs already created during that early phase. It has been effectively 'programmed' to respond in certain ways and will profoundly influence the ways that we subsequently interact with the world. It is estimated that our conscious mind is only in use 5% of the time with 95% still controlled by the subconscious. That is why positive early childhood experiences are so important. The first seven years set the programme for all that is then to come.

At first the growing child has no sense of itself being apart from the world around it, slowly, however, it expands its knowledge and learns to perceive itself as a separate and distinct entity. The child has an innate ability to adapt to the social world in which it finds itself. It is this ability to absorb its particular world that allows each child to adapt to the characteristics of its individual culture. The influences that shape a child’s mind at these early stages then either release him to fully develop his capacities, or impede him not only in childhood, but on into adulthood.

So the first influence on a child's life is the environment itself. There is an innate expectation of stimulation, freedom, warmth and love and the child doesn’t simply remember his early experiences, but is actually formed through them. The environment incudes the natural world and the people and objects that are found there. We learn through making connections between things, concepts and experiences, and the people in the environment help us to form these connections.

The second primary influence is then the surrounding human culture. Young children are immensely sensitive to the messages that the adults around them transmit, with the unsaid as clearly picked up as the said. We are innately social beings and quickly pick up the expectations of others. That is fine if the cultures within which we live support our natural instincts and dispositions, but dangerous if, instead, they ask us to ignore our own interests and instincts and serve externally set agendas.

Western cultures have increasingly focused on learning not as something dynamic and innate, that is all about self-knowledge and value and that links us to our unique interest and capacities, but rather something that is primarily there to serve the external, economic needs of the community. Since the introduction of formal schooling systems in the 1800's children have been increasingly cut off from experiencing their learning as having real meaning and purpose for the communities within which they live, to experiencing it instead, as fragmented bodies of information designed to serve the abstract needs of the system. Increasingly, therefore, we have developed means of children being ‘instructed out of context’, rather than allowing them to ‘experience in context’. We have effectively removed them from the real world and with this has gone the sense of belonging and contribution that

is so important to us. We seek to love and to be loved, to be listened to and to be valued for who we are, rather than what we do.

We are all born uniquely different and, given that nature tends to design things to maximum efficiency, this suggests that these differences matter. Through our genetic and environmental progamming and dispositions every one of us develops capacities and interests that help us realise and expand our potential. We are attracted to those things in the environment that allow us to best further our own development and when the challenges in the environment match our developmental capacities we experience periods of deep concentration and 'flow'. Such periods are common to early childhood but become less and less common if we are made to focus on abstract goals and outcomes that have no personal meaning or relevance to us.

Natural learning is all about personal meaning-making, deep engagement, adaptability and creativity. Children have unlimited potential and are driven by curiosity and imagination. They delight in taking responsibility for their own learning and strive to 'do things for themselves'. There is a natural desire to master the environment and risk-taking is a natural part of this process. Children only stop risk-taking when they start to associate it with unpleasant experiences or negative self-worth - in other words when the situation is dangerous or when they are made to feel bad about themselves. And they normally only feel bad about themselves when there is some kind of external evaluation of their success or failure. Once a child associates a task with negative feedback they are much less likely to try to do it again.

The danger of education systems based primarily upon measurable targets and outcomes is that they ask the child to perform to someone else's concept of what is normal and replace internal motivations with external judgement. Such systems fail to recognise the immense importance of learning diversity and spontaneity and crush the child's natural curiosity and energetic 'spirit'. All too quickly the joy goes out of learning and is, instead, replaced with a fear of failure. This is compounded by schooling systems that act in isolation from the communities that surround them.

Once we have lost our natural love of learning a fire goes out that robs us of something that is essential for our wellbeing - our sense of meaning and purpose in the world. Societies that rely on such systems typically see high levels of childhood psychological distress and dysfunction. From a systems perspective this is a clear indicator that something is very wrong.

The Natural Learner argues that, in light of all that we now know about natural systems and human health and wellbeing, and given the extraordinary advances of the technological age, we need to radically address our current approaches to learning and education. Everything that science tells us about how energy moves within a system and how our bodies and brains work currently runs counter to most of the traditional approaches. We have a responsibility to the children of the future to be honest about what is not working and to seek new and innovative approaches that support all our potentials and capacities.

The definition of success

'Success without fulfillment is failure'

Different cultures emphasise different aspects of what constitutes wealth. Ethan Roland & Gregory Landua have identified eight forms of 'capital' (i.e. what has value within a society)

SOCIAL CAPITAL
Social capital is all about relationships and networks

MATERIAL CAPITAL
Non-living physical objects

FINANCIAL CAPITAL
Money, currencies, securities and other tools of the financial system

LIVING CAPITAL
Animals, plants, water and soil

INTELLECTUAL CAPITAL
Intellectual capital is all about the acquisition of 'knowledge'.

EXPERIENTIAL (OR HUMAN) CAPITAL
The kind of knowledge that comes through doing

SPIRITUAL CAPITAL
The sense of connection to self and universe. It contains aspects of intellectual and experiential capital, but is deeper, more personal and less quantifiable.

CULTURAL CAPITAL
All the other forms of capital may be held and owed by individuals, but cultural capital can only be gathered by a community of people. Cultural capital describes the shared internal and external processes of a community – the works of art and theater, the songs that every child learns, the ability to come together in celebration of the harvest or for a religious holiday. Cultural capital cannot be gathered by individuals alone.

Most education systems primarily focus on intellectual capital as the most important way to ensure 'success'.

It is supposed to primarily prepare people for the world of work.

Within a natural system the measure of success would be whether or not we are in touch with our authentic, intuitive selves - and hence able to fulfill whatever activities or roles that have personal value and meaning to us - rather than someone else's version of what we should value or achieve.

From a system's perspective it is about what creates the maximum energetic return using the least input to benefit the whole system .

There are some simple energetic measures of whether or not the ways we are learning are appropriate or effective:

Effective Flowing System	**Ineffective Blocked system**
Engagement	Distraction
Concentration	Boredom
Flow	Effort
Curiosity	Lack of interest
Excitement	Fear
Risk-taking	Avoidance of risk-taking
Sense of Mastery	Sense of Failure
Fulfillment	Negativity
Desire to continue	Desire to finish

Are you helpless or mastery-oriented?

The psychologist Carol Dweck has spent thirty years researching personal motivation and achievement and has concluded that there are two distinct theories of self i.e. the deep belief systems that people use to organise their worlds and give meaning to their experiences. She maintains that these theories stem from two distinct forms of belief about intelligence i.e. that it is:

1) a fixed, concrete, internal measure (the entity theory)
2) a dynamic, responsive quality that can be increased

One mindset creates a continual need to validate, the other a continual desire to learn.

If people believe the former they tend to associate self-worth with performance and are more likely to develop that she calls the 'helpless' response. This emerges when people's understanding of success is linked to their personal performance and ability. It occurs in young children when their sense of self 'goodness' and worth is consistently linked to their external performance.

"Children given person-oriented feedback were more likely to develop helpless theories. Criticism that reflected on the child as a whole created the entire helpless pattern of self-blame, negative affect, and a lack of constructive solutions, as well as the general belief (such as the belief in stable badness) that accompany the helpless pattern" (111)

Within this framework your peers are increasingly your competitors for self-esteem. When you are measuring an internal, invisible quality like intelligence, one of the major ways of measuring it is by comparing yourselves to others. If you do better, especially with low effort, then you're smarter. That's why your peers are your rivals " (131)

Children that have belief systems formed around the latter, however, had regularly received critical feedback focused on the effectiveness of their learning strategies and not who they were as individuals. They then developed what she called 'mastery-oriented' patterns of behaviour.

However, when your self-esteem is derived from your own striving, from the use of your efforts and abilities, it is not in conflict with anyone else's self-esteem…This within this framework, rather than being rivals for self-esteem, peers can gain self-esteem by cooperating and by facilitating each other's learning (131)

The entity theory creates a system of winners and losers, where there are a few winners at the top and a large numbers of losers underneath them. (131)

Both performance and learning goals are entirely natural, desirable and necessary (151)…The problem with performance goals arises when proving ability becomes so important to students that it drives out learning goals. (152)

WHICH VERSION ARE WE PROMOTING?

'When I think of a person's life ruled by an entity theory and performance goals, I think of a life in which there is proof after proof of one's ability. What does it add up to? Thousands of proofs of ability, but, of course, never enough.

Or I think of a life in which time upon time there is a flight from risk, so as to protect an image of oneself. This adds up to an armed fortress containing all the things one could have been or done.

When I think of a life governed by an incremental theory and learning goals, I think of valued skills and knowledge accrued over time and out to use for oneself and others. Whether things have gone one's way or not, it adds up to a life of strong commitments and earnest effort. '

Carol Dweck, Mindsets (155)

Why do we think that we are separate from nature?

It is obvious that we are natural systems - just like every living thing around us.

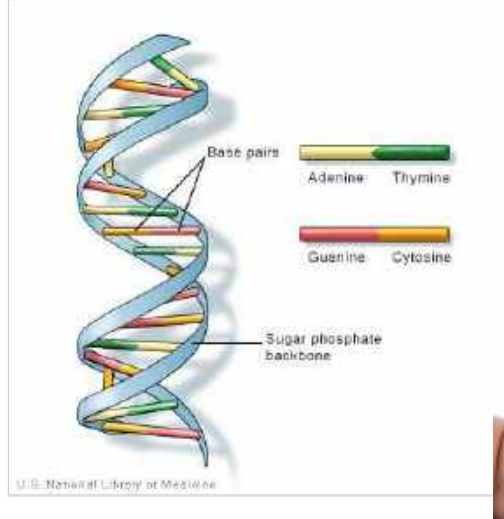
DNA is the hereditary material found in humans and almost all other organisms

Through our DNA each of us is born with inherited characteristics and learning pre-dispositions

Through our DNA we have multiple intelligences but will develop those that 1) most align with our learning predispositions and 2) are supported by our environmental experiences

DNA consists of info-energetic cellular memories

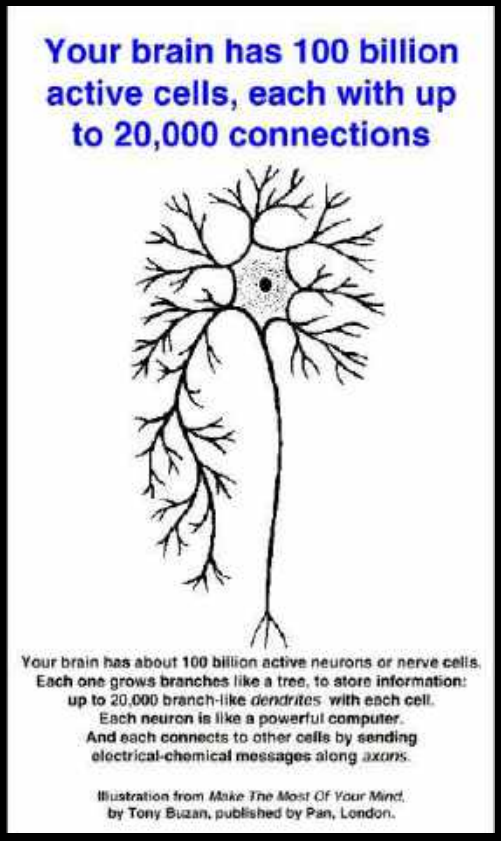
These dynamic, self-replicating patterns of information become the structures that underpin our growth and development.



LIVING SYSTEMS

Just like all other living things we have a level of complexity and organization not found in lifeless objects. At its most fundamental level, a living thing is composed of one or more cells. These then self-organize to create living tissues. Tissues, in turn, form organs and a number of organs working together compose an organ system. An organism is a complex series of various organ systems.

Living organisms undergo metabolism, maintain homeostasis, possess a capacity to grow, respond to stimuli, reproduce through natural selection and adapt to their environment in successive generations. The more complex living organisms can also communicate through various means.



A number of specialized types of neurons exist: sensory neurons respond to touch, sound, light and numerous other stimuli affecting cells of the sensory organs that then send signals to the spinal cord and brain.

Motor neurons receive signals from the brain and spinal cord and cause muscle contractions and affect glands. Interneurons connect neurons to other neurons within the brain and spinal cord. Neurons respond to stimuli, and communicate the presence of stimuli to the central nervous system, which processes that information and sends responses to other parts of the body for action.

'*Thought generally refers to any mental or intellectual activity involving an individual's subjective consciousness. It can refer either to the act of thinking or the resulting ideas or arrangements of ideas. Similar concepts include cognition, sentience, consciousness, and imagination.[1] Because thought underlies almost all human actions and interactions, understanding its physical and metaphysical origins, processes, and effects has been a longstanding goal of many academic disciplines including, among others, biology, philosophy, psychology, and sociology.*

Thinking allows beings to make sense of or model the world in different ways, and to represent or interpret it in ways that are significant to them, or which accord with their needs, attachments, objectives, plans, commitments, ends and desires.' Wikipedia - 03/03/2012

Our brain neurology is highly sensitive and adaptive to the environment and, although we are are born with billions of neurons, it is actually the growth and connections between the brain cells that really matters. Recent discoveries in neuroscience have demonstrated that by engaging in certain mental tasks we actually change the structure of our brains, something that is know as 'neuroplasticity'. As we grow we develop our unique perspectives due to the connections between our brain cells that are driven and shaped by our specific experiences. Richer sensory experiences literally create stronger brains - and diminished sensory experiences create brains that experience the world in limited ways.

In the brain certain networks of neurons are now recognised as being set up to perform particular functions: process information, form and retain memories, navigate in space, recognised familiar faces, analyse speech etc. Depending on what neurons are fired in these areas the individual will then increase or decrease the network of connections. As children's genetic make-up and life experiences vary, so will the subsequent development of their brains.

There can therefore be substantial differences in children's brain processes which result in substantial differences in what they manifest interest in, understand and are able to achieve. We are definitely not all made the same and when a particular area of the brain is compromised it can significantly impair and limit our learning capacities.

" Ideas make the world we live in, and impressions furnish ideas. My world is built of touch-sensations, devoid of physical colour and sound, but without colour and sound it breathes and throbs with life"

Helen Keller, 2003

The Mind

Something lies behind the practical functioning of our thoughts though and that is the subconscious mind. This connects us not only to every experience that has happened to us in the past, but also , at its deeper and collective levels, to our inherited dispositions and memories.

The brain mostly stores, analyses and reacts from past experiences. It is fundamentally programmed for survival. Events that are threatening or experienced as unpleasant are encoded into memory along with the physical and emotional content of these events. These informational patterns then consolidate to inform subsequent responses. It produces a structured analytical form of knowing based upon past experience.

The mind, however, can go beyond these patterns to tap into a more primary knowing about the nature of the self beyond the constraints of the personality. It is a more open and spontaneous expression of who we are. It is who children are before they have to fit into the demands of their cultures.

Culture

Culture acts like a mirror for the child as it is through others that he sees his own reflection. As social animals we are born to be open to the minds and feelings of others.

This interplay between the immature learner and the more experienced other continues throughout life. The inherited basic biological programmes of the human child underpin development, but these are subject to continual cultural influence, much of it based on the accepted development of ‘competence’ which we know as education.

Culture is all about the sets of values shared by any group - and the relationship between those values. We learn our 'oughts' and 'shoulds' from culture. And our sense of whether we fit in or not.

Culture is also about the handing down of bodies of knowledge and accumulated wisdom from one generation to the next.

Nature v Nurture

The nature versus nurture debate is one of the oldest issues in psychology. It concerns the relative importance of an individual's innate natural qualities i.e. 'nature', versus those that they develop through the personality as a result of their personal and cultural life experiences i.e. 'nurture'.

At one point children were considered to be like blank slates ready to be filled with appropriate information. We now know that all children have unique inherited pre-dispositions that underpin their particular learning processes, capacities and interests.

In other words from the time of birth we are all different, but the environments that we are born into also significantly shape the development of our personalities.

The Influence of Language

Cognition + Culture + Communication = Language

Each normal human being has a brain , belongs to a community with values and needs to communicate, and the confluence of these states leads to language.

Daniel Everett - Language: The Cultural Tool

Just how profoundly does the language that we use actually effect the way that we receive and process information? There are over 5000 languages in use today and each conveys a slightly different worldview. There are also languages understood only by those with particular knowledge and understanding such as mathematical formulae or musical notations. Language helps us to share our innermost processes in a symbolic way with others.

Language also demonstrates cultural and environmental priorities. For example an eskimo might have numerous words for different types of snow, whereas western society has numerous names for different types of financial transaction. We dissect, categorise, and accord significance to the outside world according to the rules and expectations of our cultural environments.

People with similar linguistic backgrounds tend to interpret physical evidence in one way, whereas the same evidence can be interpreted in radically different ways by those using different forms of language. For example, most indigenous American languages are 'verb, rather than 'noun' oriented and this fundamentally changes the way that they understand the world. Using nouns we compartmentalise the world into separate 'things', whereas using verbs we see the world as a process of dynamic movement.

In other words language doesn't just help us describe our worlds, but assists us to create and construct our worlds.

What it is that a child needs in order to develop socially? All human beings need warmth, respect and acceptance from others, particularly 'significant others' such as parents. They need to reinforce their identities through the recognition of others, they need to know that they can relate and communicate with others, they need to be allowed to construct and co-construct meaning with others and they need to feel that they, and their thoughts and opinions, matter to others. Children acquire identity in the context of their social group. The child has an inborn expectation of finding an atmosphere of reciprocal help and socialization. Implicit in this expectation is his desire to feel whole and feeling whole is a vital biological and spiritual need for achieving a true sense of self.

The danger of cultures is that their influence is so profound that they can so easily offer the child a vastly impoverished world in which to develop. The extraordinary potentials and intelligences that young children possess can be stifled and bound down by the demands of society. Modern western cultures have been criticised for continuing to develop educational systems that emphasise the intellect to the detriment of the social, emotional and spiritual development of children.

The complexity of modern cultures has resulted in knowledge and skills far beyond the capacity of a single group. Increasingly, therefore, we have developed means of children being 'instructed out of context', rather than 'experiencing in context'. The danger of this way of learning for the child is that he cannot make the connections and relationships with an experience of meaningful reality in his mind. In such environments children sense the anxious expectations of the adults around them and begin to experience the fear of failure, of disappointing others.

Beliefs

Belief is a thought that is powerfully impacted by life experience and particularly by the cultural environments within which we live. It is an idea or assumption that we believe to be true and that then shapes our responses and behavior. Fear-based beliefs can profoundly inhibit learning processes.

Values

Values are deeply held principles that are embedded within the cultures in which we live, and that resonate with our personal sense of meaning and worth. They also significantly influence how we respond to our experiences.

Families, education systems, religions and governments shape our values. often without us resisting it. We function at our best when our personal values are aligned with those of the external environment.

"Our values reflect what is important to us. They are a shorthand way of describing our individual and collective motivations. Together with beliefs, they are the causal factors that drive our decision-making."

Barrett Values Centre
www.valuescentre.com

Mindsets and dispositions

In the early years of life we develop the deep meaning systems and self theories that help us to organise our worlds and give meaning to our experiences. These manifest as unique mindsets and dispositions that then influence our behaviour. Healthy mindsets and dispositions allow us to be curious and risk-taking explorers of the world. Unhealthy ones can profoundly inhibit our natural development.

The Cambridge psychologist Felicia Huppert talks about three separate drivers of wellbeing. The first is external circumstances - which include the home situation, income, education, and the immediate neighbourhood. She estimates that this accounts for only 10% of the variation between people. The second and most important is what she calls the 'set point' and this is the general disposition that people have towards life. In other words whether you learn to see the glass half-empty or half-full. She argues that although genes play a part by far the most important thing is how we get to see and understand the world, especially in the early years of life. This early nurturing accounts for as much as 50% of our overall sense of wellbeing. The other 40% is what she calls the 'intentional activities'. In other words the choices that we can all make about how we think, feel or behave.

At a 2007 seminar on wellbeing she talks about the major sources of happiness being social skills, inner self regulations and a set of values, the fact that people who feel more and care more about other people, relative to themselves, are happier, and the current focus on cognitive, rather than emotional like-skills.

"...what parents want to know is if their children are happy at school. And that raises the issue that comes up in other contexts of screening and so on. Whether we should not, if we take the emotional side of life as seriously as the cognitive side, have some form of national measurement of the emotional wellbeing of children at different stages."

(APPG Seminar, 'Well-being the Classroom' 23 Oct, 2007)

The neuroscientist Richard Davidson affirms her beliefs, but then goes further. He maintains that our emotions, rather than interfering with cognition, are critically important to the developing of neural pathways that serve the ways that we process and interpret information. He suggests that there are six dimensions of emotional style which are now clearly identifiable and the chemistry of which underpin our different personality traits and temperament types. They are therefore critical to our understanding of the 'set point'. The six styles are:

- **Resilience: how slowly or quickly you recover from adversity**

- **Outlook: how long you are able to sustain positive emotion**

- **Social Intuition: how adept you are at picking up social signals from the people around you**

- **Self Awareness: how well you perceive bodily feelings that reflect emotions**

- **Sensitivity to Context: How good you are at regulating your emotional responses to take into account the context you find yourself in**

- **Attention: How sharp and clear your focus is.**

Every individual reflects a different combination of these styles and, as he highlights, the most critical period for the laying down of the necessary neuro-chemistry is early childhood. Although our genes pre-dispose us to certain emotional styles it is the environments that we experience that then trigger or disuse them. The most critical thing for our wellbeing is the general disposition or emotional style that we are helped to develop in the early years of life when our brains are formed through our experiences and are at their most adaptable.

The process of learning itself is all about creativity, personal meaning-making and communication. It is how we make sense of our worlds. It is a continuous process that doesn't start and finish in school, but that gives our lives a context beyond our individual sense of self.

Learning is also about how we survive within the human societies within which we exist. We need to adapt to these societies and to find a sense of place and belonging. There is danger in this though as such cultural conditioning can distance us from our innate connection to the larger world. We may start to find value and meaning through external evaluations rather than through our own innate sense of what is right and wrong, not only for us as individuals, but for the larger whole.

So we are more than the sum of our bodies, thoughts and value systems and to feel whole we need to integrate our inner selves with the outer personalities that we have created.

Healthy learning systems should help us to do this.

'It should be realised that genuine interest cannot be forced. Therefore all methods of education based on centres of interest which have been chosen by adults are wrong. Moreover these centres of interest are superfluous, for the child is interested in everything. A global vision of cosmic events fascinates children and their interest will soon remain fixed on one particular part as a staring point for more intensive studies. As all parts are related, they will all be scrutinized sooner or later. Thus, the way leads from the whole, via the parts, back to the whole. The children will develop a kind of philosophy which teaches them the unity of the universe. This is the very thing to organize their intelligence and to give them a better insight into their own place and task in the world, at the same time presenting a chance for the development of their creative energy

Maria Montessori
University of Amsterdam 1950, in Polk Lillard, P, Montessori Today p 75, Chap 4

The learning process should unfold through a mutual, reciprocal and balanced relationship between the self, the surrounding culture and the natural world.

Not be something imposed on us from outside that compromises our innate sense of who we are.

Between the 15th and 17th centuries a dramatic shift occurred in the way that people viewed the world. Prior to this time the dominant quality was the organic balance of natural systems – most people lived in small, meaningful communities, they felt connected to the land and had belief systems based on dynamic sustainability. Such a way of living remains consistent to the remaining native peoples. In the 17th century this way of thinking was challenged by the mathematicians Rene Descartes and Isaac Newton. Descartes had a vision which is often said to have come to him in three dreams. In it he saw that all of nature was based upon mathematics and everything was based, therefore on certain, evident knowledge. In one quote he is reported as saying:

> *'Science may be compared to a tree; metaphysics is the root, physics is the trunk, and the three chief branches are mechanics, medicine, and morals, these forming the three applications our knowledge, namely, to the external world, to the human body, and to the conduct of life*
> *Descartes, Discours de la Méthode. 1637.*

In his view there were no paths to knowledge other than through the mind and he created the saying 'I think, therefore I am'. A proven, scientific basis of reality 'scientific truth' rapidly became the dominant world view. Mind and matter became separated – the material universe became a machine and nature worked according to proven mechanistic laws. Newton then completed this version of reality by developing a comprehensive mathematical formulation that supported such mechanistic thinking. The fixed laws of Newtonian physics became the incontrovertible basis for all scientific understanding throughout the 18th and 19th centuries.

The thinkers of the 18th century then began to apply this rational theory of the universe to their understanding of the human condition. The philosopher John Locke famously compared the mind of a child at birth as a 'tabula rasa' – a blank tablet upon which all future knowledge could subsequently be inscribed. Human beings became increasingly disconnected from the world around them. Rather than seeing themselves as part of an interconnected organic whole they began to look on themselves as producers and consumers, users of the system rather than dynamic parts of it. Everyone was expected to have the same basic biological apparatus and the same basis for perceiving the world. Children were increasingly segregated from meaningful community life and the introduction of the schooling system, together with its age and gender divisions, re-enforced and quickened the process of separation.

Modern physics then began to radically challenge this view and a strange and unexpected reality became to be revealed. The scientific world could no longer be looked upon as a multitude of concisely definable separate objects but had to be seen as one dynamic whole whose parts were essentially interconnected. It became increasingly clear that there was a tendency for the parts to associate, to establish links, to interconnect and work co-operatively. Ecosystems were capable of self-organisation and self-regulation. One of the consequences of Einstein's theory was the realization that matter and energy were interchangeable. Matter is simply slowed down or crystallized energy. The old world of solid objects and determinism was moved to one with wave-like patterns of interconnections. The physicist David Bohm talked of a holographic way of looking at the universe, an 'implicate enfolded order': "Parts are seen to be in immediate connection, in which their dynamical relationships depend in an irreducible way on the state of the whole system". Physicists talked of 'probabilities of interconnections' or 'dynamic webs of inseparable energy patterns. Organisms were seen as displaying qualities of self-renewal, homeostasis, self-transformation and self-transcendence. The observed structure was both dynamic and reactive.

'Living organisms have an inherent potential for reaching out beyond themselves to create new structures and new patterns of behavior. This creative reaching out into novelty, which in time leads to an ordered unfolding of complexity, seems to be a fundamental property of life, a basic characteristic of the universe'

Fritjof Capra, 1983

This propensity for self-transformation and 'creative reaching out into novelty' lies at the very core of the learning process and demonstrates our interrelatedness – an awareness that is all about some kind of inner guiding force. There is something that leads us on, that calls us to move towards unfolding and that ultimately leads us to order and wholeness. We have an inherent awareness within us – an 'intuitive sense'. Our personal consciousness gives us our ideas, concepts and belief systems and creates our 'map' of the world. Every one of us is therefore unique in the way that we perceive things. We have physical bodies that give us sensations, emotional bodies that give us feelings and mental bodies that give us thoughts. The way in which we incorporate these three results in the personality that we project out into the world.

'Each of us has within us a source of understanding and wisdom that knows who we are, where we have been, and where we are going. It is in tune with our unfolding purpose and senses clearly the next steps to be taken to fulfill this purpose'

Psychosynthesis Education Trust

It has become increasingly clear that our brains are simply tools in the learning process. It is also increasingly clear that the limited right/left brain concept is no longer adequate to describe the complexities of brain function. What does matter is the integration of the various processes. Personal consciousness is what seems to both allow us to be connected to a greater whole and what also gives us the illusion of separateness. The more we relate ourselves only to the transitory nature of thoughts created by sensory data, the less we connect to a sense of the greater whole.

A dynamic inner energy or 'spirit' is always there for us – hence the word In'spir'ation – when we connect to it it brings us a clearly focused energy – a 'knowing'. Energy must move dynamically, therefore consciousness is always seeking challenge and innovation Children are in touch with their innate nature and therefore seek out new challenges and natural growth. It is only when interference takes place, when they are prevented from following the urgings of their own natural development, that they become reliant on the processes of the rational brain alone to provide them with guidance. Instead of intuitive development based on a sense of oneness, harmony and co-operation, they must rely purely on personal informational data provided through the processor of the brain. And the brain has a simple program to follow – it lays down memory patterns based upon whether each experience was threatening or nurturing. Fear-related emotional learning creates debilitating responses that immediately inhibit learning. The brain will store the emotional response and will try to avoid putting the individual in such a position of threat again. There is therefore an enormous difference between the individual taking on new challenges that provide an immediate endorphin release from the brain's reward centres, resulting in positive, pleasant feelings, and that same individual being put under pressure to perform externally chosen challenges that are not in line with his or her own interests, resulting in feelings of disconnection, confusion and fear.

When looking at the mechanistic model of ourselves we therefore see ourselves as biological organisms with physical bodies and five senses that form a single sensory system designed to perceive physical reality. The brain is the central processor that takes the information from these senses, analyses and categorises the data and provides suitable feedback. Everything can be measured and rationally understood.

Human beings have, however, one particularly unique quality that is not found in animal species. We have the ability to transcend our biological conditioning..to go beyond our basic instincts, to be reflective, to take a higher perspective. This quality is called free will. Free will develops through our becoming aware of inner conflicts and being able to take reasoned choices of action. Very young babies have not yet developed their free will, therefore they react purely from instinct. However young children clearly demonstrate what happens when something creates conflict... they are torn between what their inner urges tell them and doing what is expected. Human beings are, therefore, normally held in a dynamic tension between what they intuit to be right and what is expected of them by their culture.

Intelligence

> ***'At best IQ contributes about 20% to the factors that determine life success, which leaves 80% to other forces: forces grouped as emotional intelligence'***
>
> ***Daniel Goleman***

In the past intelligence was seen as a single qualifiable entity that could be measured via IQ tests. It is now widely accepted, however, that human beings possess a number of different intelligences and that these are both dynamic and capable of growth. Although as individuals we may favour some more than others it is likely that we use a range of intelligences at the same time.

These are the intelligences recognised by the American psychologist Howard Gardner:

Linguistic intelligence involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals.

Logical-mathematical intelligence consists of the capacity to analyze problems logically, carry out mathematical operations, and investigate issues scientifically.

Musical intelligence involves skill in the performance, composition, and appreciation of musical patterns. It encompasses the capacity to recognize and compose musical pitches, tones, and rhythms.

Bodily-kinesthetic intelligence entails the potential of using one's whole body or parts of the body to solve problems. It is the ability to use mental abilities to coordinate bodily movements.

Spatial intelligence involves the potential to recognize and use the patterns of wide space and more confined areas.

Interpersonal intelligence is concerned with the capacity to understand the intentions, motivations and desires of other people. It allows people to work effectively with others.

Intrapersonal intelligence entails the capacity to understand oneself, to appreciate one's feelings, fears and motivations.

Naturalist intelligence enables human beings to recognise and empathise with natural features of the environment.

Spiritual and Existential intelligences have also been considered.

Flow

Flow is the mental state of operation in which a person in an activity is fully immersed in a feeling of energized focus, full involvement, and success in the process of the activity.

"The best moments in our lives are not the passive, receptive, relaxing times... The best moments usually occur if a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile."

Mihaly Csikszentmihalyi

The psychologist Mihaly Csikszentmihalyi spent many years exploring the peak state that he called 'flow'. It was an energetic state that allowed the individual to work at optimal efficiency and to achieve a profound inner sense of personal worth and fulfillment. In adults it was a state particularly familiar to artists, musicians and sportspeople.

The state of flow is common to early childhood. It is when our innate capacities match the challenge in the environment and it is intimately connected to a sense of self-discovery, exploration and problem-solving. It is a kind of deep inner concentration that blocks out all distractions and , in children is often accompanied by the desire to repeat an action over and over until a state of inner equilibrium is achieved. The qualities of flow include:

There are clear goals every step of the way.
There is immediate feedback to one's actions.
There is a balance between challenges and skills.
Action and awareness are merged.
Distractions are excluded from consciousness.
There is no worry of failure.
Self-consciousness disappears.
The sense of time becomes distorted.
The activity becomes an end in itself.

Csikszentmihalyi observed that when flow was obstructed a state of energetic entropy occurred which significantly effected the concentration and enjoyment of the individual. In other words intervening or interfering with this kind of deep learning process had a profoundly negative impact on the outcome.

Our maps of the world

'We see the world not as it is, but who we are'
Stephen R Covey- The 7 Habits of Highly Effective People

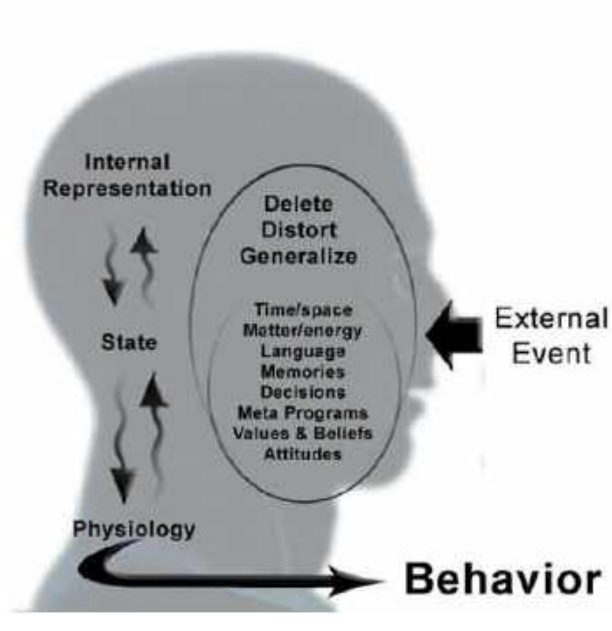
We can look at the world in a linear way that identifies things in terms of terms of differences and parts, us and them, boundaries and opposites, targets and results. This results in very defined values and beliefs.

Or we can look at the world in a cyclical way which emphases dynamic movement, complementarities, relationships, common meaning, purpose and creative processes. This results in diverse ways of knowing and being.

The linear way of thinking is supported by noun-based language (such as the English language) whereas cyclical thinking is supported by more verb-based language (such as the Navajo language). The words that we use fundamentally change our brain processes and the way that we then see and experience the world.

Perception

Perception is the process through which we which attach meaning to our experiences and the world around us. Our beliefs, assumptions, values, attitudes and past experiences combine to form the mental frames of reference through which our perceptions are then interpreted and evaluated.



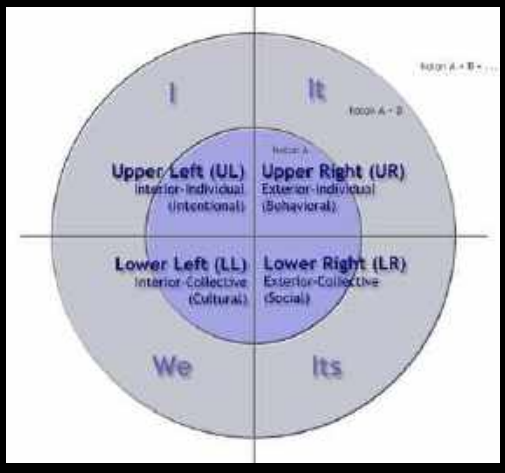
The philosopher Ken Wilber believes that multiple viewpoints are inherent in any natural system. He has identified four perspectives that are valid for any system and states that they are all important. To look at any one in isolation of the others will result in a distorted view.

IT - Individual Brain & Organism

I - Individual Self & Consciousness

ITS - Collective Social System and Environment

WE - Collective Culture and WorldView



Graphic © from AQAL Matrix Revolution

It is important to understand, therefore, that people have different maps of the world and that, depending on where they stand within the system, they will see things in different ways. In other words the ways that we organise and represent our experiences of the world are not necessarily how it actually is!

First there is the world. Second there is each person's experience of the world. Every individual creates a unique model of the world and therefore lives in a different reality from everyone else. A person's experience, map, model or representation of the world determines how they will perceive the world and what choices they will see as available to them.

The language that we use is a further step away from reality. First we have the experience, then we allocate personal meaning to the experience, then from the words available to us in our individual cultures we have to select the ones that best describe the experience to others. People who speak other languages use different words to represent the same thing. And, since each person has a unique set of life experiences, their words will have different contexts and meanings for each of them.

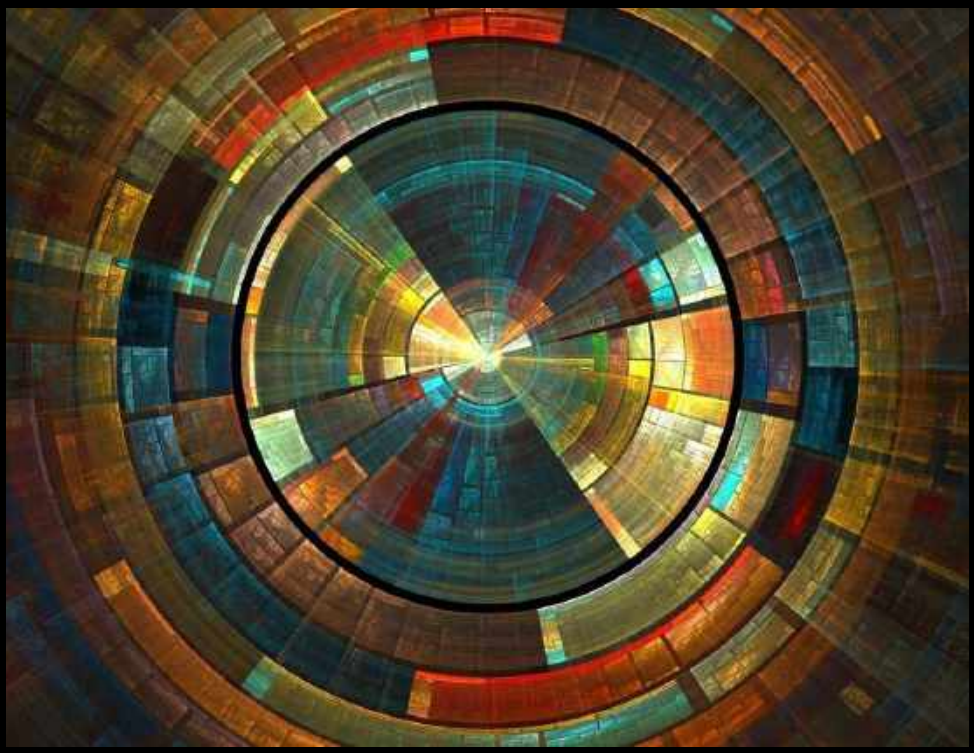
And language can be profoundly excluding. The words that we speak are culturally shaped and value laden. We very quickly pick up from others whether their language invites us into dialogue or has clear cultural obstacles and boundaries.

Diversity is inherent in the system. And multiple viewpoints are inevitable. People are able to communicate effectively only to the degree in which they can share personal meaning.

'We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds--and this means largely by the linguistic systems in our minds...

...no individual is free to describe nature with absolute impartiality but is constrained to certain modes of interpretation even while he thinks himself most free '

Benjamin Whorf, Science and Linguistics, p. 213/214



Meaning-Making

Every child attaches emotional and intellectual meaning to his or her experiences, but, as a social being, will also seek the validation of peers and adults to validate the activity. The development of a strong and confident self-concept is essential for the child's creation of identity and for an appropriate understanding of the surrounding world.

Children are extraordinary learners and are programmed to seek out new experiences that build on their pre-existing understanding. Depending on their unique disposition and capacities every child will seek out from the environment what is right for them. It is like a light that shines brightly on something and while that light shines the learning flows in a way that is characterised by levels of deep interest and concentration.

When they are young children also have sensitive periods of development where certain aspects of learning seem to become highlighted. During a sensitive period it is very easy for children to acquire certain abilities, such as language, the development of the senses, and an understanding of order (things being in their place). Once the sensitive period for a particular ability is past however, the development of the brain has progressed past the point at which this information can be so easily processed. To acquire the same ability the child then has to be taught in a more structured way and with much more conscious effort.

Children also use multiple symbolic languages to express their thoughts and understanding. Every child creates his or her own meaning in a continuous process, raising their own questions and constructing their own theories and meanings through their interactions with the surrounding world. As children share their thinking and feelings with others, they further clarify and strengthen their own interior sense of who they are. The forming of mutually positive and life enhancing relationships with others and the natural environment is critical for a child to feel safe and secure.

Punishments and Rewards

We know, therefore, that children have an innate motivation to explore the environment, and that the culture in which they must develop has a great influence on them. The child's sense of self worth comes not only from within, but is most fundamentally effected by the expectations of others. As children internalise, they personalise or adapt the information.

A culture that has built its value system on external reward systems such as money and status creates a particular social pattern that the young child must adapt to if he is to be accepted. In such societies children and adults learn very quickly whether or not the activities that they find particularly interesting and enjoyable have any external value. For example young children very quickly learn to make a clear distinction between 'play' and 'work', and have no illusions what it is that reaps acceptable rewards.

The problem is that the more a person is divorced from his real intrinsic needs, the less he is likely to feel fulfilled and the more extrinsic rewards he needs to satisfy his sense of dissatisfaction. It is a vicious and damaging circle. Over time most of us are forced to develop masks through which we view the world and behind which we hide, and it is in early childhood that the first layers of these masks are formed in all their complexity. The young child's initial formation of a valuing system is a flexible process with the locus of evaluation found firmly within the self. He then learns that things that feel right or good to him may result in love or affection being denied and consequently seeks to amend this by gradually adopting the value systems of others, These adopted value systems become part of the child's personality - even though they may go against his own feelings and experiences. Once the source of evaluation lies outside of the self the personality must seek the approval of others in order to feel self-regard.

When a child carries out an activity purely for the fulfillment that he experiences in the learning process itself he increases his contentment, self-confidence and general sense of being in harmony with the world. Children seek out meaningful work, demand responsibility and are capable of extraordinary creativity if left to their own devices in a supportive environment. What matters is not such much what they are doing, but how they perceive and interpret the activity.

Researchers into intrinsic motivation have discovered an underlying similarity that is common to all intrinsically rewarding activities: they all give the participants a sense of discovery, exploration and problem solution. They also appear to need no goals or rewards external to the activity itself. In this flow state the achievement of goals is no longer a priority. Rather, the fact that one is not working to achieve specific goals allows the individual to escape the confines of boredom or anxiety and to fully enjoy the experience for itself. It seems that in flow the individual can fully utilise those physical and intellectual skills that he has developed without the emotional barrier of the self-construct. The experience itself becomes immensely fulfilling, but one has to be careful not to always equate enjoyment with simple pleasure, for many flow activities are, to all intensive purposes, immensely complex, time-consuming and even frustrating. What we are really looking at is the pleasurable sensation - a reaching within - that we experience when we choose to push ourselves to the limits of our physical, intellectual or sensory potential. Curiosity and personal challenge are the initial impulses, but ultimately we lose ourselves in the thrill of achieving and learning something new.

Children, therefore, are active learners in their own right. They do not simply passively absorb the strategies of the adults around them, but rather they strive to be the causal agents in their own

environments. There are gaps in the child's understanding that resemble missing pieces of a puzzle and it is these gaps that spur the child on. Each child intuitively knows what experiences it needs to move forward and there are inherent dangers in attempts by others to accelerate development. By giving children external assistance and direction we encourage them to depend on others to know what and how to think and we encourage dependency rather than autonomy. There must, therefore, be a very fine balance achieved between the advantages of instruction and the very real dangers of outside assistance undermining the child's independent intuitive thinking. Under instruction children may well learn the expected knowledge and demonstrate the skills, but they may do so at the expense of the disposition to use them.'

If learning is to be about the excitement of discovering something new, rather than a function of memory children will tend to be rewarded by the joy of the discovery itself. Classroom reward structures tend to implicate the children's self worth in their achievements, a problem that has been recognised by many researchers in the field. Providing the correct degree of structure, however, seems essential for the child to make sense of the environment and to provide choices that lie within the ability of the chooser. Too many choices or too few could depress motivation and subsequent achievement.

The locus of control must, therefore, lie with the child and is the over-riding factor in creating a successful learning environment. To be given control over one's own actions, to be a decision maker, rather than one who is at the mercy of others, these are fundamental rights for all of us who want to live creative, fulfilling lives.

Internal Regulation v External Discipline

The ability to self-regulate is an essential part of healthy emotional development. Self-regulation is includes the management of physiological arousal, emotions, and attention and each of these involves different influences and developmental processes. Between birth and six years old children learn to manage themselves and to acquire the behavioral, emotional, and cognitive self-control that is essential to competent functioning throughout life.

'Each type of control is important because it reflects the growing maturity and integration of several brain areas (particularly in the frontal regions) that enable increased self-monitoring and deliberate inhibition of undesired behavior'.

From Neurons to Neighborhoods: The Science of Early Childhood Development (2000) Institute of Medicine (IOM)

The Italian educator Maria Montessori (herself a scientist) believed from her observations of the children in her care that true discipline was that created from inside, rather than something imposed from outside. She saw that by freeing the child to follow his own spontaneous interests he would automatically begin to guide himself to right behaviour: choosing appropriate tasks, mastering his own impulses when needed and respecting the needs of others. The freedom to choose was, in fact, a vital element in the child's development of self-will . She felt that it was by giving freedom that discipline arose naturally.

All living things are composed of self regulating and self organising systems so we should children be any different? What happens to the natural regulatory systems of a child when he or she has to suddenly conform to the demands of an adult dominated environment?

The Natural World

The Natural Learner

A unique organism

Dynamically connected to the natural world

Inherited characteristics and learning pre-dispositions

Natural instinct to seek out new learning experiences

Dual hemisphere brain

Multiple intelligences

Multiple symbolic languages

Socially oriented

We don't just learn from nature

When we are born we primarily access the world through a holistic, 'metaphoric' nature of mind that experiences, creates and imagines. Even with an increasing awareness of our bodily senses we don't at first experience ourselves as separate from the environment. Instead there is a deep natural communion with nature. It is only later that our rational minds start to take over, especially with the introduction of language, and then we increasingly understand ourselves as separate from others and focus on the parts rather than the whole.

Numerous research studies now show us that being in nature and learning from it, rather than about it, has enormous benefits. There is a sense of deep empathy that occurs - a perceiving, thinking, acting and 'coming-to-know'ness that is unlike anything that we find elsewhere. Some kind of deep communication occurs that reminds us of who we are and where we come from. Children have a natural affinity for such communication and a delight in the process.

Nature Deficit Disorder

'For a new generation, nature is more abstraction than reality.
Increasingly, nature is something to watch, to consume,
to wear – to ignore.'
Richard Louv, Last Child in the Woods.

A new syndrome was recently introduced by the author Richard Louv and that is 'nature-deficit disorder'. It seems that we don't function well if we are divorced from the natural world. In fact our mental and physical health and wellbeing suffers. This isn't surprising as we are dynamically connected to all living processes. It is what indigenous peoples have been telling us for centuries.

The erosion of this connection has been happening gradually since the industrial revolution but has gathered pace firstly through the introduction of formal schooling and more recently through the enormous changes that have come about through digital technology. Children and adults in modern societies are profoundly disconnected from the natural world and have come to see it as something to look at and learn about remotely rather than something to experience directly. This is beginning to have enormous consequences for our health and wellbeing.

One of the biggest problems that children now have is their lack of freedom. Adults seem to now view the world as a dangerous place - and yet statistically children are safer now than they were roaming the streets in the 17 and 1800s. The increasing use of motor vehicles is one reason for this, but there is an adult perception of risk that is neither accurate nor productive and children are being denied the creative and life affirming trust that they need to explore and understand their worlds. Children learn from getting things wrong. They need to be able to try things out, to make mistakes and to develop their own sense of what is safe or unsafe. By protecting them from this we deny them the fun and thrill of creative learning and adventure.

Only 50 years ago the streets were full of children playing ball games and hopscotch. Now they are increasingly hidden away inside playing with gameboys and updating their Facebooks.

From Stephen Moss's 2012 Report on Natural Childhood commissioned by the National Trust

So are our children really prisoners in their own homes? The statistics would appear to support this view. In a single generation since the 1970s, children's 'radius of activity' – the area around their home where they are allowed to roam unsupervised – has declined by almost 90%.12 In 1971, 80% of seven- and eight-year-olds walked to school, often alone or with their friends, whereas two decades later fewer than 10% did so – almost all accompanied by their parents (13).

Running errands used to be a way of life; yet today, two out of three ten-year-olds have never been to a shop or park by themselves (14). A poll commissioned by the Children's Society revealed that almost half of all adults questioned thought the earliest age that a child should be allowed out unsupervised was 14 – a far cry from just a generation ago, when ten- year-olds would have had more freedom than a teenager does nowadays (15). If most of today's children are not even allowed down the street by themselves, the chances of them exploring the natural world are even more remote, as survey after survey has shown:

Fewer than a quarter of children regularly use their local 'patch of nature', compared to over half of all adults when they were children (16) Fewer than one in ten children regularly play in wild places; compared to almost half a generation ago (17).

Children spend so little time outdoors that they are unfamiliar with some of our commonest wild creatures. According to a 2008 National Trust survey, one in three could not identify a magpie; half could not tell the difference between a bee and a wasp; yet nine out of ten could recognise a Dalek (18).

There is evidence to suggest that this sedentary, indoor lifestyle is having profound consequences for our children's health, especially with regard to what has been called the 'modern epidemic' of obesity:
- Around three in ten children in England aged between two and 15 are either overweight or obese (19).
– The proportion classified as obese increased dramatically from 1995 to 2008: rising from 11% to almost 17% in boys, and from 12% to 15% in girls (20). If current trends continue, by 2050 more than half of all adults and a quarter of all children will be obese (21).

Other physical health problems on the increase include vitamin D deficiency, leading to a major rise in the childhood disease rickets (22) , short-sightedness (23) and asthma (24). There has also been a reduction in children's ability to do physical tasks such as sit-ups, producing 'a generation of weaklings'(25) and a major decline in children's cardiorespiratory (heart and lung) fitness, of almost 10% in just one decade (26). All these health problems have been, at least in part, attributed by the researchers involved to a decrease in the time children spend outdoors compared with previous generations.

But physical problems are only part of the story. The Good Childhood Inquiry found that our children are suffering an 'epidemic of mental illness', with significant increases between 1974 and 1999 in the number of children suffering from conduct, behavioural and emotional problems (27)

– One in 12 adolescents are self-harming (29)
– and about 35,000 children in England are being prescribed anti-depressants (30

Physical and mental health problems are the most obvious consequences of a lack of engagement with nature, but there are others which are less tangible, though equally important. Principal among these are declining emotional resilience and the declining ability to assess risk, both vital life-skills in the development of which outdoor experience is vital, as child psychologist Professor Tanya Byron has noted:

"The less children play outdoors, the less they learn to cope with the risks and challenges they will go on to face as adults... Nothing can replace what children gain from the freedom and independence of thought they have when trying new things out in the open."

A potential impact is that children who don't take risks become adults who don't take risks. In the current global economy this, too, is a price we cannot afford to pay, as pointed out by Lord Digby Jones, former chairman of the CBI:

"If we never took a risk our children would not learn to walk, climb stairs, ride a bicycle or swim; business would not develop innovative new products... scientists would not experiment and discover, we would not have great art, literature, music and architecture." (32)

The 2011 Natural England Report on Children and the Natural Environment

A research study was undertaken in Amsterdam comparing children's use of outdoor urban space during the 1950s and early 1960s with the early 21st century. It concluded that a variety of issues have changed during these years:

- the street space that used to be a space for children has been transformed into adult space
- private home space, which used to be dominated by adults" activities, has become a child's space
- there has been a decrease in playing outdoors and an increase of adult supervision
- new children"s activities have emerged outdoors and indoors
- inequality by class has become more manifest

Changes to childhood have been identified in other parts of the world and with respect to the United States such changes have been hypothesised as:

- direct contact with nature to an increasingly abstract and symbolic experience of nature
- routine and daily contact with animals to contact with things
- immersion in community to isolated individualism
- less violence to more violence, much of it vicarious
- direct exposure to reality to abstraction and virtual reality
- a relatively slow pace of life to a fast pace of life

> *'All parents emphasised what they saw as a direct relationship between good health and playing outdoors. Often they referred to their own childhood and recalled their own enjoyable memories of outdoor play, regardless of whether they grew up in a city or elsewhere. They want to give their children the same positive experience that they had themselves.'*
> *Karsten and van Vliet (2006, p.154)*

The Children and Nature Network's 2010 report

- Electronic media use by children and youth has increased in the past five years to more than 50 hours per week
- Obesity and other health-related risks continue at epidemic rates among children and youth (as well as adults!)
- Children's recognition of wild species continues to decline
- Inequality of access to nature's benefits to children's development continues
- As of 2008, more human beings live in cities than countryside, presenting the challenge of re-naturing city life as urbanization increases
    - Children's direct experiences in nature as part of their everyday lives remain endangered

Nature

'Nature, in the broadest sense, is equivalent to the natural world, physical world, or material world. "Nature" refers to the phenomena of the physical world, and also to life in general. It ranges in scale from the subatomic to the cosmic.'

Wikipedia - 04/03/2012

Nature is all about creativity, flow and inherent potential. Despite the appearance of wholes, centres and boundaries, it is all also a dancing sea of interacting energy. It consists of a number of ordered structures with its basic principles, patterns and processes recurring on widely different scales. It often manifests complex geometric patterns that that can be split into parts, each of which is a tiny copy of the whole, and it loves the openness of spirals. The dynamic patterns that constitute life are constantly interacting with the wider energy of the universe. In this respect it really is true that we are all one.

So nature is much more than just flora and fauna. Indigenous peoples talk of a lived and creative relationship with the natural world and a communicative capacity that allows a deep appreciation of its rhythms and patterns. Everything in nature is viewed as having its own energy and its own intelligence and creative process. There is a subtle communicative dynamic that we can tune into and that nurtures our sense of innate connection.

In the ancient world most people couldn't read or write , nor would they have experienced formal schooling. Instead they would have lived dynamically connected to the natural world and their communities. With the plasticity of the brain we can assume, therefore, that they would have actually experienced the world very differently. They would have felt more, intuited more and empathised more. The mechanistic minds of the modern world now struggle to understand how profoundly different their experiences would have been. They experienced life in everything - not in rational way, but in a felt-sense way. Nature really was communicating to them.

As complex systems, patterns in nature are manifested through self organizing emergent behavior. These individual behaviors become useful emergent properties only when they are somehow communicated to the whole. This communication between individuals in a system is vital to the success of emergent behavior because, through network connectivity, adjoining patterns can interact with each other. That connectivity is commonly called a "network". Because patterns are complex systems, a network is often called a "complex network".

Bill Graham - Patterns - The Art and Science of beholding Nature

A field of centres

Physics now tells us that the universe is an unbroken continuum - a field of centres with the degree of life intensity of any one centre dependent upon its interaction with others in the field. Physics also tells us that space isn't actually empty, but is full of dynamic energy. At an atomic level there is no such thing as a solid.

Nature can therefore be seen as 'matter in motion', obeying certain observable laws and principles that science still seeks to understand. Matter is commonly defined as the substance of which physical objects are composed. It constitutes the observable universe. The visible components of the universe are now believed to compose only 4 percent of the total mass. The remainder is said to consist of 23 percent dark matter and 73 percent dark energy. So we are really mostly composed of space.

Life

all life can therefore be seen as

an emergent, structure-preserving process
a field of centres
based upon natural laws and principles
an unfolding 'coming-into-beingness'
a creative force
a sea of dynamic energy
full of emergent potential

F*ully 70% of the matter density in the universe appears to be in the form of dark energy. Twenty-six percent is dark matter. Only 4% is ordinary matter. So less than 1 part in 20 is made out of matter we have observed experimentally or described in the standard model of particle physics. Of the other 96%, apart from the properties just mentioned, we know absolutely nothing.*

— Lee Smolin: The Trouble with Physics, p. 16

Human Learning and Happiness

Human learning is an innate developmental unfolding that taps into our innate sense of who we are, but which does so only in the context of the larger whole. We are social beings and our personal sense of self worth is nurtured through our sense of belonging and contribution.

We are therefore at our happiest when we are fulfilling our natural developmental purpose (i.e. when the challenge in the environment matches our developmental abilities), but particularly so when that purpose is also serving the needs of the whole. And happiness is not a constant state as we need challenge and risk-taking in order to learn and grow and sometimes big leaps in learning occur only great difficulties have been overcome. Children constantly seek out challenge from the environment and we can see when they are most engaged through their levels of concentration (and the fact that they will keep repeating an activity until they have mastered the challenge). In fact deep engagement and concentration in young children is a vital indicator of their developmental wellbeing.

Happiness is, therefore not just about a personal state of wellbeing, but is directly connected to how we experience ourselves in relation to others. And systems that focus primarily on the needs and achievements of the individual, in isolation of the community and the wider world, are missing a vital part of the equation.

Governments throughout the world are now beginning to look at the importance of happiness to global health and wellbeing:

In 2012 600 delegates including heads of state, Nobel laureates,
spiritual, business and community leaders contributed to the opening of
the recent United Nations High Level Meeting on Wellbeing and Happiness:
Defining A New Economic Paradigm.

This landmark meeting, convened by the Prime Minister of Bhutan, Jigmi Y
Thinley, followed on from the 2011 UN General Assembly motion calling for governments to
promote polices focusing on sustainability, happiness and
wellbeing as opposed to narrower definitions of economic growth measured solely
by the expansion of GDP.

Wellbeing, Happiness and Sustainability:
Hallmarks of a new Economic Paradigm
The Conversation, April 12, 2012

Physical Development

Children develop according to their own environments and timescale and there can be profound differences in both neurological and physical development in the first years of life. It has been shown that certain core infant reflexes can significantly affect the learning ability of the child if they are not inhibited and integrated by the developing brain in the first three years of life.

So adequate nutrition, movement, stimulation, feedback and affection all contribute to the balance of body and mind.

Learning Styles

It is now also recognised that we all have different learning styles and use different learning processes. Depending on our genetic make-up and our environmental experiences we will have developed some more than others. Everyone therefore uses a mix of learning styles with some more dominant than others. The seven most common learning styles are:

Visual (spatial): a preference for pictures, images, and spatial understanding
Aural (auditory-musical): a preference for sound and music
Verbal (linguistic): a preference for words, both in speech and writing
Physical (kinesthetic): a preference for the bodily senses
Logical (mathematical): a preference for logic, reasoning and systems
Social (interpersonal): a preference for working with other people
Solitary (intrapersonal): a preference for working alone

This is very important when teaching children as they will have very different competences depending on their learning styles. It is actually their brain neurology that is different.

We cannot, and should not, therefore expect all children to learn in the same ways. Instead we should pay much more attention to their unique learning styles and dispositions.

Play

Play is so important to optimal child development that it has been recognized by the United Nations High Commission for Human Rights as a right of every child. What distinguishes play from a child's other activities is that it is self-directed, spontaneous, free-flowing and highly creative. It is also flexible and open-ended in that the rules adopted can change and adapt according to new information. In this it follows all the characteristics of a natural system.

A variety of predominantly cultural factors have now reduced children's ability to play, including a hurried lifestyle, changes in family structure, safety fears and an increased attention to academic and enrichment activities at the expense of more child centred activities.

The education system itself has increasingly eroded children's ability to play with governments wordwide investing in early childhood education models that emphasise school readiness over and above the importance of development readiness. The inevitable focus on measurable targets and outcomes has made results more important than processes with the consequence that children are under increasing pressure to do what the anxious adults around them want, rather than follow their own natural urges and instincts. Play itself has been undermined with the introduction of language such as 'planned play', 'purposeful play' or 'adult-led play'.

Play allows children to use their creativity while developing their imagination, dexterity, and physical, cognitive, and emotional strength. Play is important to healthy brain development. It is through play that children at a very early age engage and interact in the world around them. Play allows children to create and explore a world they can master, conquering their fears while practicing adult roles, sometimes in conjunction with other children or adult caregivers. As they master their world, play helps children develop new competencies that lead to enhanced confidence and the resiliency they will need to face future challenges.

Undirected play allows children to learn how to work in groups, to share, to negotiate, to resolve conflicts, and to learn self-advocacy skills. When play is allowed to be child driven, children practice decision-making skills, move at their own pace, discover their own areas of interest, and ultimately engage fully in the passions they wish to pursue. Ideally, much of play involves adults, but when play is controlled by adults, children acquiesce to adult rules and concerns and lose some of the benefits play offers them, particularly in developing creativity, leadership, and group skills.

The Importance of Play, Ginsburg et al
PEDIATRICS Volume 119, Number 1, January 2007

In 2010 ICM research surveyed a random sample of over 1,000 adults and 1,000 children, aged 7 to 14, from across the UK regarding children's community play. In addition, Play England conducted a series of seven focus groups across the UK with children, parents, and adults to gather additional information on children's community play. In their reports, the authors discuss many interesting findings, including the following:

- Compared to the previous generation, children today have fewer friends they can play with in their neighborhood. Adults reported having an average of 14 friends when they were children, compared to an average of just 6 friends for children today.

- 79% of adults reported that they believe community spirit has declined since they were children.

- Children's ability to play outside is limited due to safety concerns. For example, 49% of adults reported that they do not let their children play outside without an adult. The biggest concern for parents was road accidents.

- 55% of parents reported that they are concerned that their neighbors might get upset if their children make noise outside.

- Children are often negatively judged by adults. For example, 24% of children reported that they have been scolded for playing ball games in their neighborhood.

- People are hesitant to get involved with children in the community. For example, 44% of men reported that they would be concerned about approaching a child who needed help because others might think they were trying to abduct the child.

- People recognize the benefits of children playing outside for their community. For example, 88% of parents reported that they believe that children playing outside helps community members get to know each other.

ICM research conducted the opinion poll on behalf of Play England. Josie Gleave conducted the literature review and wrote the report on the focus group research. Josie Gleave works with Play England.

Education

'The term 'Education' is known to have several root words. It is popularly known to be derived from the Latin root 'educo' meaning to 'educe'- to draw out. It also has root words, 'educare' and 'educere'. "educare' means to 'rear or to bring up' and 'educere' means to 'draw out from within' or to 'lead forth'.

The word was originally intended, therefore, to denote the bringing forth of natural human abilities with the aim of creating a fully integrated personality.

In modern societies , however, education has increasingly come to mean the formalised means of instruction through which we impart the knowledge, values, symbols, rituals, aims and behaviors of our cultures. It's primary aim is to produce 'good citizens' who can contribute in externally validated ways to society.

Many people are now questioning whether this focus on external values and results has compromised our innate learning dispositions and has eroded the true joy of learning for learning's sake.

Curriculum

A curriculum is an externally prescribed set of courses and their content offered by an educational establishment. It sets down what should be learnt and why. It has increasingly also become to denote the setting of certain 'norms' of development based upon expert knowledge. Quality is an evaluation of the product or service against these norms and a particular range of tools are used to measure and evaluate the outcomes - typically check lists, profiles and rating scales. The nature of school curriculae are a substantive indicator for the focus and value systems of individual cultures.

In traditional systems children enter school at approximately the same age and are immediately evaluated as to how well they do against the norms. There is no recognition of their different neurological development or learning styles and no focus on their innate interests. Instead they become part of the system and will adapt their self-worth and value systems accordingly. Standardisation and conformity is the name of the game with both teachers and pupils effectively denied the possibility of curricular spontaneity.

'It is a technology of normalisation, establishing norms against which performance should be assessed, thereby shaping policy and practice. It is a technology of distance, claiming to compare performance anywhere in the world, irrespective of context, and a technology of regulation, providing a powerful tool for management to govern at a distance through the setting and measurement of norms of performance'.

Moss, P and Dahlberg G 2008

There is no point in hanging on to a curriculum that may have suited an up-and-coming social group in the eighteenth and nineteenth centuries but needs radical reshaping today. We talk of pupils' entitlements. What this often means is specific – to learn to read and so on. A more fundamental entitlement is to a curriculum that hangs together, that is working to the same desirable goals. At present, most children do not have this. They have a curriculum of isolated units. For some of them this makes little sense and they switch off. Others take it that those in charge know best and that it all adds up somehow. But it does not add up.

We all owe it to all children to give them an education that makes sense, and equips them for a fulfilling personal life and for helping others to lead one'

John White is Emeritus Professor of Philosophy of Education at the Institute of Education, University of London

'Too many state schools in Britain in 2010 have become factories. Results (at least on paper) have improved. But at what cost? Reluctant students are processed through a system which is closely controlled and monitored by the state. No area of public life s more important than education to prepare people to live meaningful, productive and valuable lives. Yet our schools turn out young people who are often incapable of living full and autonomous lives. At the same time, employers condemn students' lack of academic and personal skills while universities find that the end products of schools can be little more than well-drilled automatons who do not know how to think'

Anthony Seldon- Master of Wellington College

A Digital World

The digital world that we live in now is radically changing the way that we think about and approach learning. With vast amounts of information and computing power at our fingertips we no longer need to use our memories to access basic data and perform computations. Instead we need to learn how to discern between different sources and to give full realm to our more creative thinking capacities.

It is now all about how and why we learn rather than what we learn.

A Digital World

Over the last three decades unimaginable changes have taken place in the ways that people interact and learn. There has never been a time in human history when so much information was so easily accessible by so many.

And with these changes have come to need to radically redefine our traditional approaches to human communication and learning and to examine what we now need to support the learners of the future. There is no longer a need to memorise large bodies of information, nor is there is a need to be able to perform complex calculations. What there is a need for is imaginative and creative thinking - and for learners who are in touch with their own personal sense of meaning and purpose.

Children worldwide are discovering the joy of self motivated enquiry and are already involved in projects that are stretching the boundaries of how and where we learn. Today's social, economic and technological advances have brought us to a point where learning is not the preserve of the advantaged, but is increasingly accessible to all. Education systems, however, are failing to keep up with the worlds that these children will face as adults and are often perpetuating deep schisms between the ways that they are naturally predisposed to learn and the increasingly obsolete educational norms and values that they are being asked to conform to. There is a massive innovation gap that is crying our for new and more future-focused solutions based upon the nurturing of human wellbeing and potential.

So the digital world is offering us some very exciting new opportunities that are challenging the traditional approaches to learning and education.

The Kaiser Family Foundation conducted a 2009 study in the USA with more than 2,000 children between 8 and 18 years of age completed a survey regarding their media-related activities, including watching television and movies, playing video games, listing to music, using computers, and reading newspapers, magazines, and books. In addition, about 700 of these children completed seven-day media use diaries. In their report, Rideout and colleagues present many interesting findings, including the following:

- From 2004 to 2009, children's media use increased substantially. In 2004, children spent an average of almost 6.21 hours with media daily, whereas children in 2009 spent an average of 7.38 hours daily with media.

- When multitasking is taken into account (time spent using more than one form of media at a time), children in 2009 packed nearly 11 hours of media exposure each day into 7.38 hours, an increase of almost 2.25 hours over 2004 levels.

- Children in 2009 spent more time with every type of media, except for reading, as compared to 2004. For example, children spent an average of 38 minutes more watching TV a day and 47 minutes more a day with music and other audio than they did in 2004.

- Mobile and online media has facilitated children's increasing media use. For example, 66% of children in 2009 had their own cell phone, as compared to 39% in 2004, and 76% had an iPod or other MP3 player, as compared to 18% in 2004.

- How children use media has also changed. For example, cell phones are no longer used just for talking, they are used for listening to music, playing games, and watching TV.

- Children who spend more time with media report that they receive lower grades and are more likely to report that they are often sad or unhappy as compared to children who spend less time with media.

- Media use does not seem to impact children's physical activity. Children who spend more time with media reported spending similar amounts of time being physically active as children who spend less time with media.

- 11- to 14-year-old children experience a huge increase in media use as compared to 8- to 10-year-olds. For example, 8- to 10-year-olds spend an average of 5 hours and 29 minutes with media, while 11- to 14-year-olds spend an average of 8 hours and 40 minutes with media.

The Digital Dilemma

The use of electronic devices and screen technology has an impact on the micro-cellular structure and complex biochemistry of our brains. And that, in turn, affects our personality, our behaviour and our characteristics. In short, the modern world could well be altering our human identity.

Baroness Susan Greenfield, ID: The Quest For Identity In The 21st Century

Technology is bringing about a revolution in the way that we learn, but it is also opening up some questions about its impact on our brains and the ways that we think and interact with others. This is especially important with young children whose brains are still so malleable. At the moment we really don't know what it is doing to us so we need to err on the side of caution. The American Academy of Pediatrics (AAP) is currently so concerned that it discourages the watching of any TV for children under 2 years old and recommends that those older than 2 watch no more than 1 to 2 hours a day of quality programming.

What we do know is that children are spending more and more time using screen technology and that this is unlikely to change. They are becoming more passive with the highest ever levels of child obesity and they are interacting in virtual ways that are profoundly changing their natural patterns of relationship. Social lives are being built that have little to do with the real world, but that can have a significant impact on their value systems and behavior. The computer scientist Jaron Lanier believes that technology can teach us more about our humanity - but only if we adopt the right approach which puts humans first and technology second.

There is also a deepening concern about the increasingly high levels of childhood dysfunction with diagnoses for conditions such as Attention Deficit Disorder (ADD) at an all time high. Digital technology encourages us to process data and images at break-neck speed with the brain becoming increasingly accustomed to such immediate rewards and timescales. It does not encourage delayed gratification, nor does it encourage periods of deep concentration and reflection - with the result that many adults working everyday on screens are finding that they struggle to slow their brains down to do simple things like quietly read a book.

"If the young brain is exposed from the outset to a world of fast action and reaction, of instant new screen images flashing up with the press of a key, such rapid interchange might accustom the brain to operate over such timescales. Perhaps when in the real world such responses are not immediately forthcoming, we will see such behaviours and call them attention-deficit disorder.

"It might be helpful to investigate whether the near total submersion of our culture in screen technologies over the last decade might in some way be linked to the threefold increase over this period in prescriptions for methylphenidate, the drug prescribed for attention-deficit hyperactivity disorder."

Susan Greenfield talking to a House of Lords Investigative Committee

The Loss of Empathy

One of the most worrying possible side-effects is a loss of empathy. Empathy comes from being with real people in the real world. It is about the ability to tune into the 55% of what is being communicated that is non-verbal. We need empathy in order to feel connected to others. We also need empathy in order to feel love and compassion.

A recent report has shown that empathy levels have been declining over the past 30 years. The research, led by Sara H. Konrath of the University of Michigan at Ann Arbor and published online in August in Personality and Social Psychology Review, found that college students' self-reported empathy has declined since 1980, with an especially steep drop in the past 10 years. To make matters worse, during this same period students' self-reported narcissism has reached new heights. The results were startling: almost 75 percent of students today rate themselves as less empathic than the average student 30 years ago.

This isn't really surprising as children, despite being connected to many others in their virtual networks, are actually spending more and more time alone.

The Exposure to Violence

An increasing number of studies are reporting an association between exposure to violent television programming and aggressive or violent behaviors in children (Strasburger, 2002), including early exposure as preschoolers and later antisocial behavior (Christakis, 2007). It is estimated that the average child views 12,000 acts of violence every year. Most network broadcasted shows for children, even if they are cartoons, contain 20 violent acts per hour.

'Given the association between television viewing and learning or behavior problems in children, a recent study of preschoolers provides some alarming statistics. A study of 8,950 children, published in the Journal of Pediatrics (Feb 2011) found that preschoolers on average are exposed to 4 hours of screen time per day. Children in home-based child care had the most screen time, averaging 5.5 hours per day. Children in parental care only were exposed to an average of 4.4 hours of screen time. Obviously, some of these children watched much more than 4 or 5 hours per day to produce these averages.

The majority of screen time for preschoolers occurred at home. However, screen time in home-based child care represented 33 percent of total weekday screen time compared to only 3 percent of total time for day care centers. The ratio of screen time on average was 1/2 hour at day care and 3 1/2 hours at home.'

Dr. Randall Neustaedter, OMD, Preschoolers watch too much TV
www.naturalnews.com, February 19, 2011

An Increase in Consumerism

Children in the more affluent areas of the world are also becoming more consumerist. A 2011 UNICEF study, commissioned after British children were ranked by the United Nations as the unhappiest in the industrialised world, blamed the results on a culture of brand pressure and a lack of family interaction. While the children would prefer to spend time with their parents the parents themselves compensated by buying their children material goods. Children told researchers that their happiness relied upon spending time with family and friends and having "plenty to do outdoors". The parents, however, bought their children material goods to compensate for their absences, used television and screen technology "as a babysitter" and allowed children to play computer games for long periods.

Screen technology has allowed children to be targeted by advertisers in increasingly overt and innovative ways. Advertising in Sweden it is considered unacceptable and is banned for children under 12 with the approval of the majority of the population. Greece has a ban on advertisements for children's toys between 7 am and 10 pm and a total ban on advertisement for war toys. There is now a call for other countries to tighten their regulations.

Dysfunction and Depression

As a global community we really can't afford to perpetuate any system that does not cultivate all our human potentials. And we should be alert to anything that manifests systemic dysfunction such as depression and violence. Such dynamic tensions are clear indicators that something is wrong.

According to the World Health Organisation depression is currently the leading cause of disability and the fourth leading contributor to the global burden of disease By the year 2020, depression is projected to reach second place of the ranking of disabilities calculated for all ages, both sexes.

About 20 percent of U.S. youth during their lifetime are affected by some type of mental disorder to an extent that they have difficulty functioning (NIMH survey published in the October 2010 issue of the Journal of the American Academy of Child and Adolescent Psychiatry). The data supports the observation from surveys of adults that mental disorders most commonly start in early life. The Centres for Disease Control and Prevention's National Health and Nutrition Examination Survey (NHANES) reported that approximately 13 percent of children ages 8 to 15 had a diagnosable mental disorder within the previous year. The most common disorder among this age group was attention-deficit/hyperactivity disorder (ADHD), which affected 8.5 percent of this population. This is followed by mood disorders broadly at 3.7 percent, and major depressive disorder specifically at 2.7 percent.

The American Psychiatric Association states in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) that 3%-7% of school-aged children have ADHD. Parents reported that approximately 9.5% or 5.4 million children 4-17 years of age had been diagnosed with ADHD, as of 2007. The percentage of children with a parent-reported ADHD diagnosis increased by 22% between 2003 and 2007.

In the United Kingdom the Mental Health Foundation report that about 10% of children have a mental health problem at any one time and self-harm statistics show one of the highest rates in Europe: 400 per 100,000 population.

The economic and societal impact of these statistics is profound.

Depression manifests when we lose our sense of meaning and purpose - and when we feel that we are no longer in control of our circumstances. It is a kind of learned helplessness.

According to UNESCO most children in the more affluent countries spend between nine and twelve years at school. We cannot, therefore, ignore the possibility that the schooling systems themselves are contributing to this dysfunction. From a natural systems perspective this is actually highly likely as so many of the indicators for natural learning are absent from the current systems.

What is curious is why we have not asked the question more urgently before.

A Science of Learning

Given all that we now know about the natural world and its processes it is strange that we haven't yet developed a Science of Learning. Such an approach would allow us to acknowledge exactly how we, as human beings, fit into the scheme of things and what we need to do to maximise our development and potential. It would need to explore the cosmology, physiology, neurology and psychology of human development. And, most importantly, it would allow us to identify and mimic the patterns and processes of growth that have made nature so efficient.

Cosmology
The quantum world shows us that we exist within a sea of relational energy, that includes space, time and boundaries. Nothing is fundamentally separate or autonomous. Everything expresses dynamic movement and growth. Flow consists of emergent patterns of meaning.

Physiology
We are born with unique inherited pre-dispositions and learning styles. Our physical bodies need the appropriate nutrition and environmental support to fully access and develop these dispositions.

Neurology
Brain integration is essential for healthy human development. Our brains are highly responsive to external stimuli and our neurological pathways will be shaped and consolidated according to our unique life experiences.

Psychology
We are social and naturally empathic beings that are highly tuned to the feedback that we receive from others. Our personalities are formed through the values, belief and knowledge systems that we encounter through our families, communities and cultures. We are inherently creative and innovative learners that constantly seek new challenge through the environment.

Spirituality
We have an innate need for wonder, awe, creative expansion and for contribution to something more than ourselves. This inner 'spirit' connects us back to our original state when we had no sense of separation from others or the surrounding environment.

What we know of as self is therefore actually composed of:

The patterns of our DNA (genetic coding and dispositions)
Our natural intuitive developmental instincts
Our bodily senses
Our brain processes
Our feelings and emotions
Our deeper connection to the whole

Three Core Aspects

There are three core aspects to learning. In order to maximise developmental possibilities these need to be fully balanced and integrated.

1) Our Connection to the natural world

We are instinctively and dynamically connected to the natural world and this connection is accessed through our intuition and innate knowings. There is an inner wisdom that seeks to explore the unknown and that allows us to experience wonder and awe.

2) Our relationship with others and our communities and cultures

We only exist in co-creative relationship with others. Although developmentally self-focused we are also naturally collaborative learners and seek meaning, purpose and contribution to our activities. Our sense of self-worth and value derives from such personal meaning-making. Diversity matters but only in relation to the whole.

We use many symbolic languages to communicate. Oral language, however, is the dominant cultural influence and, as such, profoundly affects mind-function. Western language is highly prejudiced towards linear time and logical sequences.

Digital technology has provided us with new and exciting ways to communicate. It is important that we use this technology to enhance, rather than erode, our relationships and natural developmental tendencies.

3) The development of our unique dispositions and capacities

Depending on our inherited characteristics we strive to develop our unique capacities and to fulfill our potential. We need to be able to follow our own developmental dispositions and learning styles in order to do so. As natural learners we are intrinsically motivated to seek instruction - either from the environment or from others. Our social and emotional responses to the environment profoundly impact our developmental capabilities.

And there are nine core principles to natural systems:

1) Energy always moves dynamically - consciousness therefore always seeks challenge and innovation

2) Learning is all about flow – we flow when the environmental challenge is balanced with our own skills and capacities - too little challenge and we become bored, too much and we become stressed

3) Learning is naturally playful in nature – curiosity, experimentation, exploration and collaboration are all fundamental qualities of the natural learning process.

4) Natural Learning is evolving and self-organising and reflects dynamic intelligence, order, creativity, meaning and purpose

5) Natural Learning always includes and transcends – we are programmed to constantly consolidate information and then to feel the attraction and challenge of something new – that is the thrill

6) Processes are more important than results – how and why we learn is more important than what we learn. Internal wellbeing is more important then external success

7) Cultural filters limit the ways that children can access and understand their worlds

8) Beliefs transform our biology (and not always in a good way)

9) Self-organisation and regulation are more effective than external limitation and control

45% of communication is NON VERBAL
(7% words, 38% tone of voice)

Albert Mehrabian

55% is therefore our PRESENCE
- our energetic space -

A New Wisdom Society

Knowledge is a wonderful thing. But knowledge alone can be dangerous if it is not then set in the context of how it best serves the needs of the whole system. Just look at how we have abused the environmental balance of the natural world.

There is so much talk about wisdom and yet the way that we educate our children is currently the very antithesis of what it is all about. Rather than recognising education as something that acknowledges and brings forth the potential that lies within every child, the formal schooling system has become increasingly focused on measurable targets and outcomes at the expense of the child.

One is bottom up and about the internal needs of the individual, the other top down and about the external needs of the culture - what matters is how we achieve a harmonious balance between the two. But there is then a third factor that encompasses them both and that is how they respond to the needs of the larger system within which they exist. And that is all about wisdom.

Wisdom means that we understand that our own internal wellbeing is intimately connected to the wellbeing of the wider world - and that our thoughts and actions matter and have consequences. If, as science tells us, we are all part of one enormous sea of energy, everything that we do cannot help but have an effect on the whole.

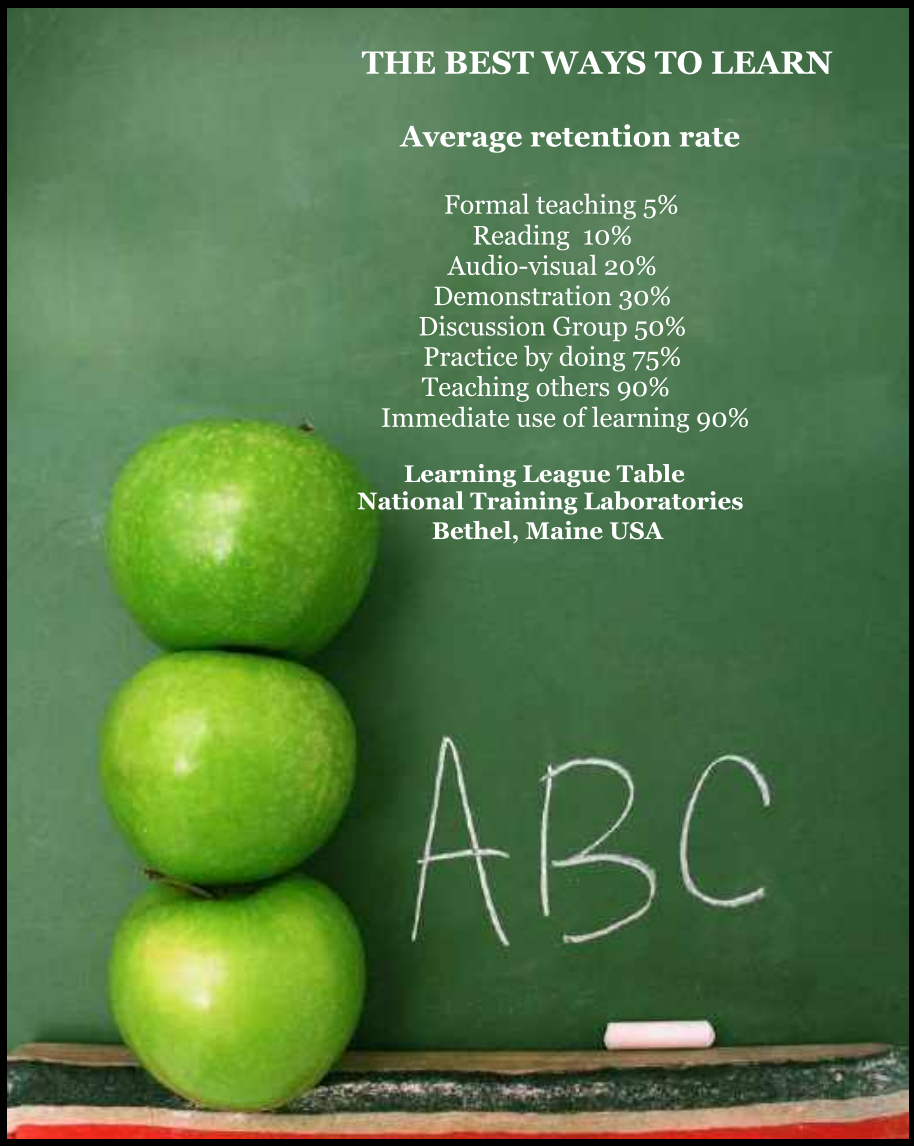
The ways that we interpret the world and the choices and decisions that we make shape and define not only our own worlds, but the wider worlds in which we live. Limiting beliefs bind and restrict us to our personal environments and cultures and one of the clear benefits of the digital world is that we can get a better idea of how other people live and what they think and feel.

Growth, belonging and contribution are essential needs for us all to feel fulfilled as human beings. And a sense of internal meaning and personal fulfillment is more important than any externally defined success.

"A Human Being is part of the whole called by us universe, a part limited in time and space. He experiences himself, his thoughts and feelings as something separated from the rest, a kind of optical delusion of his consciousness. This delusion is a kind of prison for us, restricting us to our own personal desires and to affection for a few persons nearest to us.

Our task must be to free ourselves from this prison by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty."

Albert Einstein


THE BEST WAYS TO LEARN
Average retention rate
Formal teaching 5%
Reading 10%
Audio-visual 20%
Demonstration 30%
Discussion Group 50%
Practice by doing 75%
Teaching others 90%
Immediate use of learning 90%
Learning League Table
National Training Laboratories
Bethel, Maine USA
ABC

'A child's curiosity and desire to do things himself are the definition of his capacity to learn without sacrificing any part of his whole development. Guidance can only heighten certain abilities at the expense of others, but nothing can heighten the full spectrum of his abilities beyond its in-built limits.

The price a child pays for being guided into what his parents think best for him (or themselves) is the diminution of of his wholeness'

Jean Liedloff – The Continuum Concept

The New Learner

Every child experiences his or herself as different and special

Every child is able to develop his or her unique capaciities and potential

Every child is free to express his or herself in ways that have personal meaning

Every child feels connected to the surrounding culture

Every child has meaning and purpose

Every child feels that they matter

Every child feels loved and a sense of belonging

Every child experiences success as personal fulfillment and wellbeing

Bibliography

American Academy of Pediatrics - The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds, Kenneth R. Ginsburg, MD, MSEd, and the Committee on Communications and the Committee on Psychosocial Aspects of Child and Family Health Guidance for the Clinician in Rendering Pediatric Care

American Academy of Pediatrics - Media and Children http://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Pages/Media-and-Children.aspx

APPG Seminar, 'Well-being the Classroom' 23 Oct, 2007

Baroness Susan Greenfield, Facebook and Bebo risk 'infantilising the human mind', The Guardian, Feb 24th, 2009

Barrett Values Centre, Values Overview, Dec 2012 http://www.valuescentre.com/values/?sec=values_overview

Buzan, Tony, Make the Most of Your Mind, Tony published by Pan, London, 2000

Children and Nature Network 2010 Report

Covey, Stephen, The Seven Habits of Highly Effective People, Simon and Schuster, 2004

Csikszentmihalyi, Mihaly, Flow: The Psychology of Optimal Experience, Harper Perennial, 2008

Davidson, Richard J and Begley, Sharon, The Emotional Life of Your Brain: How Its Unique Patterns Affect the Way You Think, Feel, and Live--and How You Can Change Them, Hudson Street Press 2012

Descartes, Rene, Discours de la Methode, 1637

Dweck, Carol, Mindset - How you can Fulfil your Potential, Robinson 2012

Einstein, Albert, Letter of 1950, as quoted in The New York Times (29 March 1972) and The New York Post (28 November 1972).

er VC. Children, Adolescents, and the Media. SAGE Publications, 2002.

Everett, Daniel L, Language the Cultural Tool, Profile Books, 2012

Capra, Fritjof, The Turning Point, Chapter 8, Flamingo, 2010

Gardner, Howard, Frames of Mind - The Theory of Multiple Intelligences, Basic Books, 2011

Ginsburg et al, The Importance of Play, Pediatrics Volume 119, Number 1, Jan 2007

Goleman, Daniel, Emotional Intelligence, Bloomsbury, 1996

Graham, Bill, The Art and Science of Beholding Nature http://www.patte (http://www.patternsinnature.org/blog) rnsinnature.org/blog

Greenfield, Baroness Susan, Modern Technology is changing the way that our brains work, Daily Mail Online, March 13th, 2012, adapted from ID: The Quest For Identity In The 21st Century, Sceptre Publishing
http://www.guardian.co.uk/uk/2009/feb/24/social-networking-site-changing-childrens-brains"

Kaiser Family, Foundation, Generation M2: Media in the Lives of 8 to 18 year olds, 2010 Report http://ww.kff.org/entmedia/mh012010pkg.cfm"

Konrath, Sara K, University of Michigan, What to Do About Declining Student Empathy, Personality and Social Psychology Review, August 2010

Liedloff, Jean, The Continuum Concept, Penguin, 1989

Louv, Richard, Last Child in the Woods; Saving our Children from Nature Deficit Disorder, Atlantic Books, 2010

Mehrabian, Albert (1971). Silent Messages (1st ed.). Belmont, CA: Wadsworth. ISBN 0-534-00910-7.

Mental Health Foundation
http://www.mentalhealth.org.uk/help-information/mental-health-statistics (Nov 2012)

Merikangas KR, He J, Burstein M, Swanson SA, Avenevoli S, Cui L, Benjet C, Georgiades K, Swendsen J. Lifetime prevalence of mental disorders in U.S. adolescents: Results from the National Comorbidity Study-Adolescent Supplement (NCS-A). Journal of the American Academy of Child and Adolescent Psychiatry. 2010 Oct. 49(10):980-989.

Merikangas, K., He, J., Brody, D., Fisher, P., Bourdon, K., & Koretz, D. (2009). Prevalence and Treatment of Mental Disorders Among US Children in the 2001-2004 NHANES PEDIATRICS, 125 (1), 75-81 DOI: 10.1542/peds.2008-2598

Moss, Peter and Dahlberg, Gunilla, Beyond Quality in Early Childhood Education and Care, New Zealand Journal of Teachers Work, Volume 5, Issue 1, 03-12, 2008

Moss, Stephen, Natural Childhood Report, commissioned by the National Trust, 2012
http://www.childrenandnature.org/downloads/C&NNReport_2010.pdf

National Institute of Medicine, From Neurons to Neighbourhoods; The Science of Early Childhood Development, National Academies Press, 2000

Natural England Commissioned Report, Children and the natural environment: experiences, influences and interventions, March 2011

Neustaedter, Randall, OMD, Preschoolers Watch too much TV, www.naturalnews.com, Feb19, 2011

NIMH Mental Health Survey, Journal of the American Academy of Child and Adolescent Psychiatry. 2010 Oct. 49(10):980-989.

Play England 2010 Report
http://www.playday.org.uk/playday_campaigns/2010_our_place/playday_2010_research.aspx

Polk Lillard, Paula, Montessori Today, Schocken Books, 1996
Roland, E & Landua G, 8 Forms of Capital A WHOLE SYSTEM OF ECONOMIC UNDERSTANDING 2011, http://appleseedpermaculture.com/8-forms-of-capital/

Seldon, Timothy, An end to Factory Schools - an education manifesto 2010 – 2020

Smolin, Lee, The Trouble with Physics, Penguins, 2008

Tandon PS, Zhou C, Lozano P and Christakis DA Preschoolers' total daily screen time at home and by type of child care, The Journal of Pediatrics 158 (2), (2011) 297-300.

Tanimura M, Okuma K and Kyoshima K, Television viewing, reduced parental utterance, and delayed speech development in infants and young children, Arch Pediatr Adolesc Med 161 (2007) 618-9.

UNICEF REPORT Children's Wellbeing in UK, Sweden and Spain - The Role of Inequality and Materialism, June 2011

White, John, Education for Wellbeing, Education Review, Volume 19, No 1, 2008

Whorf, Benjamin, 'Science and Linguistics', Technology Review 42(6): 229-31, 247-8 , 1940

Whorf, Benjamin, Language, Thought and Reality (ed. J. B. Carroll). Cambridge, MA: MIT Press, 1956

Wilber, Ken, A Theory of Everything, An Integral Vision for Business, Politics, Science and Spirituality, Gateway, 2001

Who are you?

What makes your heart sing?

By compromising children's natural development
perhaps we are compromising life itself


blurb

The Freedom to be my Self

Wendy Ellyatt
Co-founder and Director of the Save Childhood Movement

For the last twenty years Wendy has been exploring the unique qualities of human learning with a particular emphasis on what gives us meaning and purpose. Her studies have taken her from being a specialist in the foundational importance of early learning, to examining ancient and indigenous perspectives, natural systems dynamics and our understanding of the word 'wisdom' when looking at sustainable futures.

What does fulfill us and produce sustainable states of wellbeing? How do we protect both children and adults from systems that undermine our inherent creativity and potential? How do we ensure that we can all feel valued and connected? Wendy's diverse projects explore the UK's current education system, the modern world's erosion of childhood and our shared need for meaningful relationship, community and contribution.

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