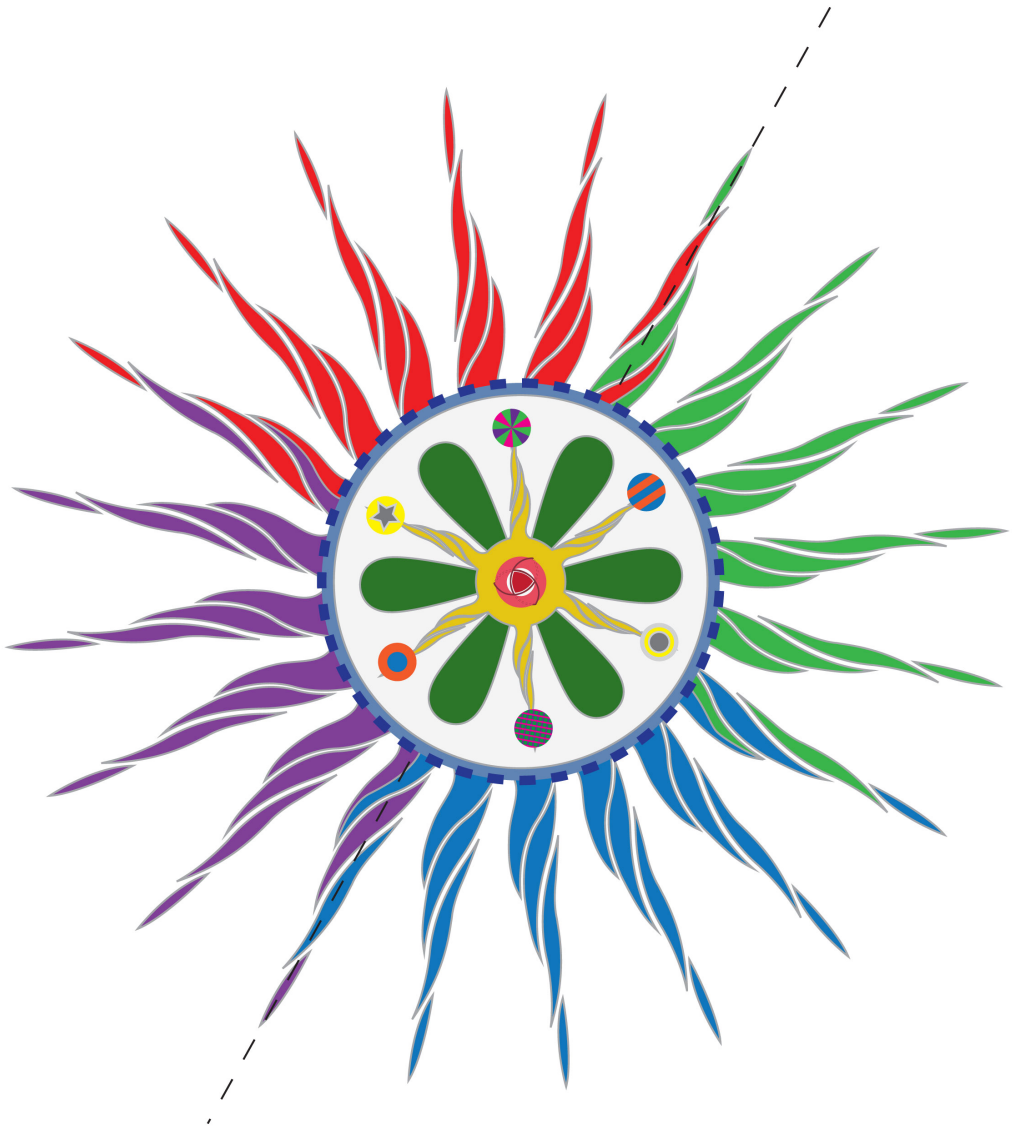
A School

Tutorial/Mentorship

Programme

in *Dialectic Unity*



Richard Roest (Dip. TESOL / MA-TESOL / MA- Ed. Man. / D.Ed.)
(theone.rr01@gmail.com)

Foreword

This programme is concerned with understanding the processes of learning, teaching that occur within formal environments and exploring ways of progressing affiliated operations, procedures, and approaches for better learning outcomes and individual wellbeing - physically and mentally - for both learners and practitioners.

Learning can be defined as a relatively permanent change in an individual's behaviour or capability and is a result of experiences and practice; teaching can be thought of as the purposeful direction and management of the learning process. Schooling and its primary purpose is to help the individual to better develop his/her full potential, as well as to develop knowledge, attitudes, and skills to interact with the environment in a successful fashion.
Development of prerequisites for schooling success is primarily demonstrated in three ways:-

Vision – refers to ideas about who and what we are as individuals, our expectations about what is possible, and more specifically our dreams, goals and desires,
Character – refers to the direction and quality of life; it is often thought of in conjunction with morality and ethics,
Competence – refers to issues of success in terms of expertise – doing a thing well.

The purpose of this programme is to help schools find a way to enhance the prerequisites for schooling success, focusing on fundamental learner **NEEDS**:-

Self-regulation Development

and

Self-efficacy Beliefs Realisation

It must be realised that if learner needs are not met, the individual is likely to react more defensively and less productively; needs reflect the basic person and, therefore, ***each need is a mandate***.
How that need is handled determines outcomes and destinies; moreover, there is an inhibition associated with expressing needs on the part of learners and expression of needs is often subject to learnt social behaviour. An individual's outward behaviour may be observed and the individual's stress felt, but there is nothing in sensory perception that can clue one in on the ***underlying needs***, especially when an individual chooses to shield or suppress them.
The deepest needs are the most resistant to change. In addressing needs, they must first be understood and accepted, so that healing or behaviour modification can take place when appropriate. Secondly, inhibition and stigma that is often attached to the term 'needs', must be eradicated. If needs are not met over time, an entrenched destructive cycle may occur and may lead to **depression** and **self-harm**.

The first step in correcting any impediment to the prerequisites of schooling success is learning that a problem exists, and that encumbrances are usually not overcome by using the same kind of approach which may have helped to create them.
The problem refers to **youth mental health,** a burgeoning problem worldwide.
Schools can do much to mitigate this problem by having a School Tutorial/Mentorship Programme such as featured in this paper, by cultivating a Mental Constitution in learners during the secondary level school years, or as a minimum exposing learners to thinking differently at

high school.[1] Robust mental health is fundamental to quality of life and physical health; it represents a *vital* ingredient in the prerequisites for success in schooling. It contributes to the ability in learners finding satisfying social roles in life and allows individuals to form positive relationships with others. For young people who are still developing socially, emotionally and physically, the development of a mental health problem or disorder can disrupt and seriously impede their social development, education, family relationships and vocational path. Mental health issues affect not only the young person, but also their family, carers, friends and the wider community. Yet there is evidence that young people everywhere do not readily access services to support their needs.[2]

Unless School Management believes that education *begins* with the learner, that the learner is *central* to it and *not* a vassal into which 'knowledge' is poured, then satisfactory learning outcomes and student wellbeing are ***unlikely*** – School Management needs to transform schools into 'Learning Organisations' with a Progressive educational philosophy orientation, thereby creating a *learner-centred* environment, in which this programme may inhibit a perfect fit.

I recommend this paper be considered as an integral part of the School's Education Programme; in making that determination, I would caution the reader to seriously consider two aspects:- **Deficiency** and **Apathy**.

These two aspects work hand in hand, both similarly ***negative*** in nature.

Deficiency **wills** it and **Apathy** **allows** it.

Deficiency is not learning or teaching supportive,
Apathy doesn't care, as long it's not personally inconvenienced.

Richard Roest

[1] **Other affiliated papers by Richard Roest –** A Transition Toward A Learner-Centered Environment / Dialectic Thinking … / The Cultivation Of A Mental Constitution / Practitioner Educational Philosophy Orientation – "You As A Professional" / Pin Point Me / Pin Point Profiler.
[2] **Australia government statistics.**


Help!

Introduction

Why every school should have a Learner Tutorial/Mentorship Programme

In general:-

- Improves student self-esteem, confidence, and self-regulation,
- Increases student mastery of academic skills,
- Improves students' attitudes toward school,
- Decreases student drop-out rates and truancy,
- Breaks down student social barriers and creates new friendships,
- Promotes student emotional support and positive role models.

For students:-

- One-on-one instruction/guidance/mentoring,
- Instruction tailored to specific learning styles and ***needs***,

Hierarchy of Needs

Hierarchy of Needs - **The pyramid illustrates the five levels of human needs plus a need for the youth of today – electronic devices, the internet, and battery life. The most basic needs are Physiological, Safety/Security, shown at the base of the pyramid. As one moves to higher levels of the pyramid, the NEEDS become more complex.**

At the base level WiFi/Battery Life - Since the passing of Abraham Maslow, youth seem to think these a most important and basic need. It would appear that life without a daily dose of internet on some electronic device or other is just not imaginable today…

1.) **Physiological** - Basic needs, such as water, food, shelter, sleep, warmth, exercise, etc.

2.) **Safety/Security** - Physical safety, economic security, freedom from threats.

3.) **Social needs** - Acceptance, to be part of a community, love of family, to belong.

4.) **Esteem** - Important projects, recognition from others, prestige and standing.

5.) **Self-actualisation** - Challenging projects, opportunities for innovation and creativity, learning and creating at a higher level.

Learning Styles:- How the Individual is Intelligent/How the Individual is Intellectually Functional.

1.) **Essential Learning styles**:- Visual, Audio, Kinaesthetic.

2.) **Learning Style Dimensions**:- Psychological-Physical, Logical-Mathematical, Social.

- Instruction **free of competition** – students can progress at their own pace,
- A facility to air personal concerns, anxieties,
- Companionship with a positive adult role model,
- Improved social skills.

For practitioners:-

- Reduced time spent on repetitive work – more time on professional tasks,
- Increased monitoring of individual student development, learning outcomes, and reactive behaviours of *needs unfulfilled*,
- Practitioner educational philosophy orientation – "You, as a Professional".
- Personal gratification in witnessing success and personal fulfilment of students,

This multi-faceted, tutorial/mentorship programme in dialectic unity has additional applications, and may be utilised as :-

- **An instrument for student development in the utilisation of tutorial techniques to advance and meet critical competencies required in : - Learning skills / Organisational skills / Social - Academic skills.**
- **An effective group learning instrument to create essential dynamics for an interactive, cooperative learning environment in the classroom,**
- **A cognitive and normative framework for the recording and processing of observations and developments, thus enabling practitioner *and* student understanding of what actually takes place in their teaching / learning environment,**
- **An instrument for comprehensive profiling of the individual, and pathways; How the individual is intelligent, How the individual is intellectually functional, and for individual content behavioural analysis ~ an integrative function of behaviour.**

This instrument is likely to tailor fit any existing school tutorial/mentoring programme. Broadly, it involves cultivating a Learner Mental Constitution, the cultivation of mental dispositions to enable youth to understand the various ways in which knowledge – 'Knowing' - is developed and propagated. Youth **need** mental disposition cultivation in order to progress and thrive in an ever changing, interconnected, and competitive world. A Mental Constitution comprising of a Disciplinary, Synthesising, Creative, Respectful and Ethical mindsets – all in dialectic unity -, as otherwise the young individual will be dependent on others when formulating views or when making decisions about options.
The programme will make a commitment in a caring way, which involves taking part in the learning process side-by-side with the learner, preparing the learner for change, knowing that what is conveyed through the programme may not be initially understood or even acceptable to learners at first, but in time will make sense and have value to the individual when the situation requires it.
Change tends to reach a certain level of pressure, when learning can escalate.
The tutor/mentor may then elect to immerse the learner into change, thus provoking different ways of thinking, with consequent learner re-adjustments in self, self-efficacy beliefs, and/or a re-ordering of values.

This, by making things understandable, using real examples to demonstrate and foster skills and strategy development in engaging activities, rather than adhere to prescribed, 'correct-way' teaching methods which rely largely on mnemonics, a capacity deemed redundant in today's world.

'Harvesting' techniques may be used to create awareness of what has been learnt through affordances and drawing conclusions, key questions being :-

Knowledge:– Defining, identifying labelling – Who? When? What? Where?

Comprehension:– Understanding , predicting, interpreting, inferring, summarising, siting examples.

Application:– How to be used? How to demonstrate? How to make use of? How to resolve?

Analysis:– Differentiating, comparing, contrasting, distinguishing, relating.

Synthesis:– Designing, constructing, developing, formulating, imagining, intuiting, changing.

Evaluation:– Justifying, appraising, evaluating.

If one is of the philosophical orientation that the learning process begins with the learner, and that the learner is central to it, then it is pertinent to know how the individual is intelligent, how the individual is 'Knowing', how the individual is intellectually functional, rather than merely relying on overt learner behaviours.
Observations alone do not necessarily reveal what learners **feel** and **think**.
This programme will provide the all-important missing element of practitioners 'knowing' the learner, rendering 'one-size-fits-all-teaching' redundant, and thus represents an important tool for school management, practitioners and parents to gain greater insight and understanding into and of the adolescent/young adult mind.
It may help parents to overcome generation-gap issues, understanding modern-day world culture and values as well. Importantly, the concept also represents an instrument for learner self-regulation management and the realisation of learner self-efficacy beliefs.

The concept provides an interface that practitioners and parents are likely to be **attracted to** and students may **learn from**.
Attractive to students, in that it may enable the enhancement of their mental dispositions, thus enabling self-regulation and realisation of individual self-efficacy beliefs for personal fulfilment, improvement in academic and social skills, participatory learning in a group environment, and awareness of " how they fit in" - school, family, and society.
It brings to mind the naturally occurring phenomenon of Matter and Spirit, or as they are more commonly recognised - **Matter** and **Energy**.
Matter and Energy represent a relationship of 'unity', found in all living systems, embodying a certain *quantity* as well as certain energetic and other immaterial characteristic *qualities* combining in a totality, with the amalgamation of both these aspects as *One*.

A bi-directional conjecture, creating an impulse that can alter development to the extent that the student is more able to create more complex innovations which, in turn, create new selection pressures in relation to functional consciousness – thought - and symbolic communication.

An instrument, concept, that incorporates distinctly human energies and characteristics, such as a natural tendency to form and act in groups, of how a person is uniquely intelligent and functional, a natural inclination to inquire, to learn, a tendency for one to be a natural psychologist, the human need and want to communicate through a common language, but wanting to retain one's identity and culture.

Identity **Culture**

These attributes in their proper arrangement and usage, can naturally energise a learning environment through a dynamic activating occurrence to work-up active engagement and negotiation in affordances to include the practitioner as a facilitator of learning. The practitioner, however, must embrace the following for dynamic classroom activation to occur :-

1) Teach for multiple intelligences, Visual / Audio / Kinaesthetic - Essential Learning Styles, with a Progressive educational philosophy orientation.

2) Adopt a student grouping strategy of dichotomies within groups of six, conforming to a Polar-Unity-of-Opposites arrangement, incorporating the Learning Style Dimensions - Psychological-Physical / Logical-Mathematical / Social - the things that define the individual learner's uniqueness.

This approach is likely to generate a learning energy presence that lives and evolves, that can transform "Old" - to - "New" through the dialectic phenomena of **Permeation of Opposites**, the process of **Negation of Negation**, and **Transformation** as Mutually Interactive Reciprocities in dialectic unity.
In these circumstances it is possible for a school learning community to become greater than the sum total of its individual student uniqueness - **a centred learning community that continually evolves - as do ALL living things in Nature.**

The Programme Explained

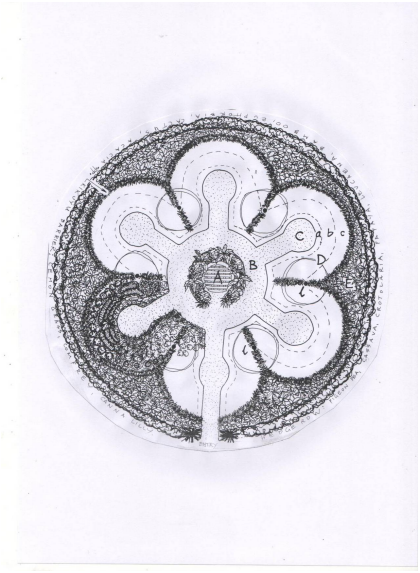
Applying Naturalist Intelligence

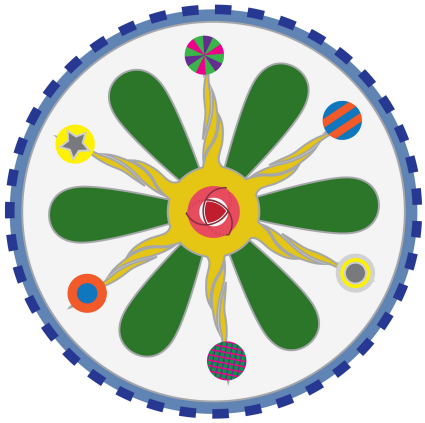
To fully understand the concept is it perhaps helpful to first provide some background information and elucidation as to how this concept was conceived with an explanation in relation to its design, as well as featuring aspects of psychology, the science of dialectics, Goethean Methodology, Bio-dynamics and the Australian concept of permanent cultures, Permaculture, before detailing a generic format of learner profile reports.

Concept design is composed of ideas, materials, techniques and strategies, much like the human body is composed of a brain, bone, blood, muscles, and organs; when complete, it functions as a whole assembly with a unified purpose, the parts functioning in relation to each other. In our Natural world for example, Permaculture as a design system, seeks to integrate natural, fabricated, spatial, temporal, social and ethical parts to achieve an interactive whole, thus not dissimilar in objective to this imagery concept. It features :-

A)

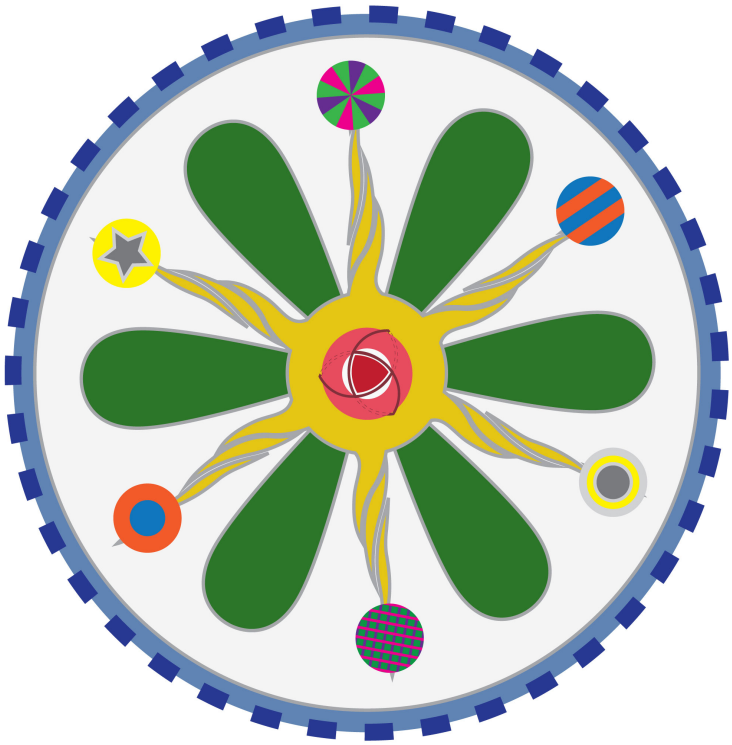
How the Individual is Intelligent, Different Ways of Knowing, embodied in a learner grouping strategy. Multiple Intelligences adapted and featured as Essential Learning Styles and Learning Style Dimensions, depicted as a Permaculture Key-Hole Circle Garden.

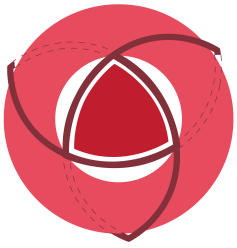




The component How the Individual is Intelligent / Different Ways of Knowing will profile the individual learner in relation to Essential Learning Styles and portray Visual, Auditory and Kinaesthetic intelligences with regard to dominance. This component will also profile the individual in relation to Learning Style Dimensions, the individual's **defining** factors - Independent or Collaborative / Deductive or Inductive / Left-Brain or Right-Brain dominance.

This component provides the criteria for effective group learning in dialectic unity design - **learning refinement** - based on the second main proposition of dialectics, the principle of Negation of Negation.

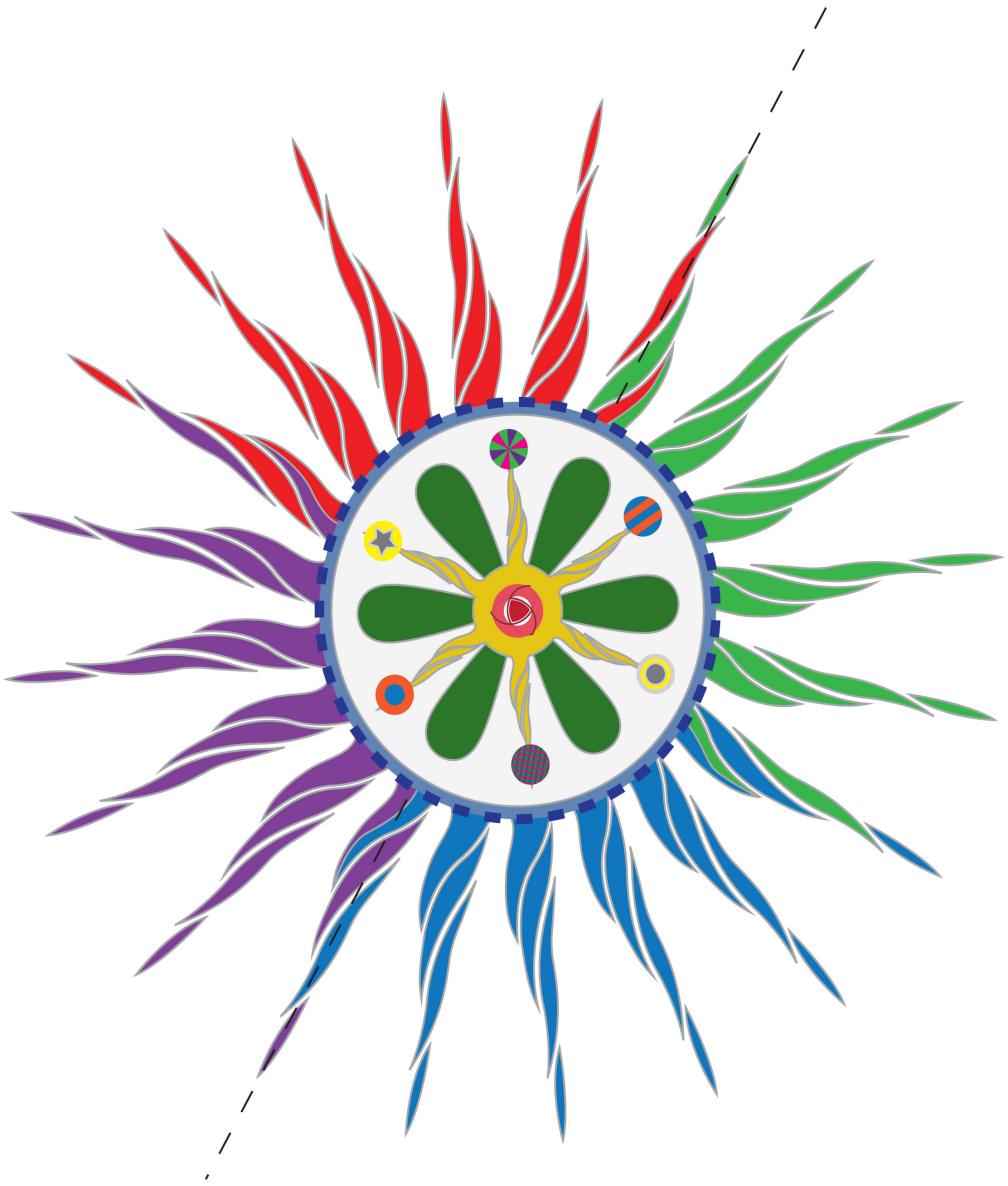




Essential Learning Styles

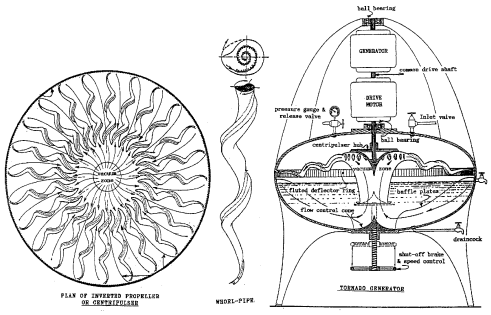
Learning Style Dimensions

A) is " Zone 0" and is situated at the centre of **B)**



B)

A four-character functional style grid, featuring *two dichotomous pairs*, functioning psychologically as thinking and doing, portrayed in four differently coloured quadrants, a design inspired by Viktor Schauberger's Centripulser Generator.



A student profile depicting a four-character functional-style grid, featuring a schema in Dialectic Unity from four perspectives: ~ **Interests** ~ **Usual/Active Behaviour** (Organisational Style) ~ **Needs** ~ **Stress/Reactive Behaviour**.
The student personal behavioural / functional profile component will feature the individual by taking four basic, essential characters:-

The Expediter/Doer

The Persuader/Communicator

The Designer/Thinker

The Organiser/Administrator

NB *

If **NEEDS** remain unfulfilled reactive behaviour tends to occur, triggering **negative** behaviour. It is a destructive cycle that worsens and will continue unless corrected.

Interests ~ *artistic, clerical, mechanical, musical, numerical, outdoor, persuasive, scientific, social services.*

Needs ~ *Motivational needs,*

Esteem ~ *relating to others individually,*

Acceptance ~ *relating to others,*

Structure ~ *systems and procedure,*

Control ~ *authority relationships,*

Advantage ~ *teamwork and individual competition,*

Activity ~ *action or reflection oriented,*

Empathy ~ *objectivity and subjectivity,*

Change ~ *managing varied assignments,*

Thought ~ *making decisions,*

Freedom ~ *personal independence / personal space*

Positive Self-image

&

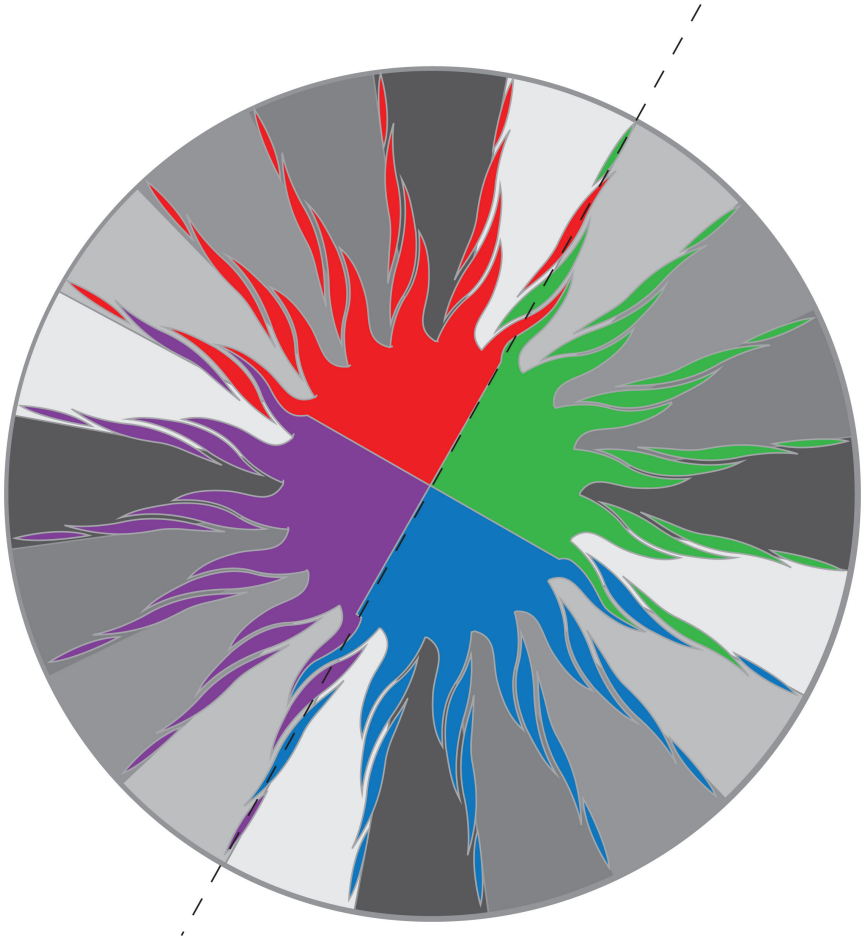
Self-critical Image

This, because the individual is much more than intellect alone - *"humanising the Intelligences"*.

The Four Quadrants

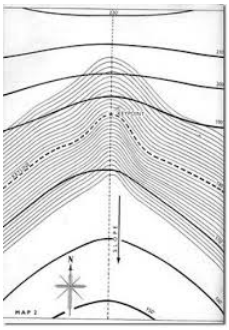
C)

An Integrative Function of Behaviour in a schema, featuring *the content* aspect of Behaviour according to Professor Hans Eysenck :~ Extraversion - Introversion / Neuroticism - Stability / Psychoticism - Socialisation / Social and Political Attitudes / Sexuality.



The concept, pictured in an overlay configuration, one on top of the other, shows opposite 'Key-line' energies not unlike the Yeoman's Key-Line System in Permaculture design ~ a key-line system provides for drought-proofing farms on contour, and such configuration profiles the essential axes of **"Opposites"** superimposed.

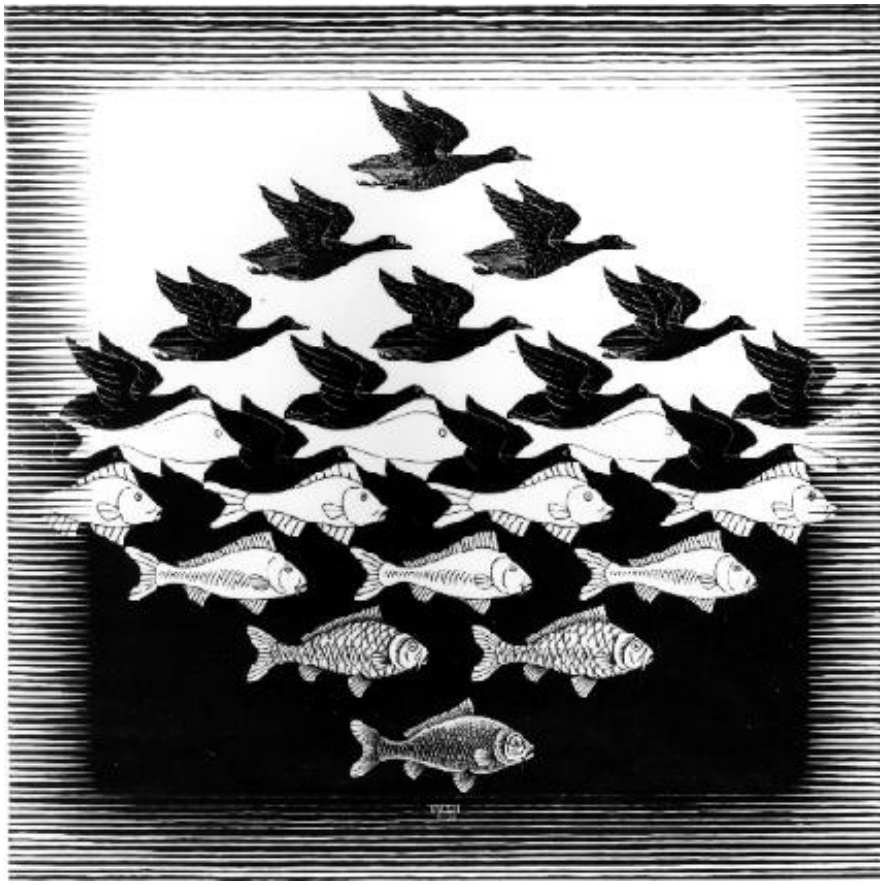
Opposites



Yeoman's Key-Line System

This method of design is intended to provide a visual tableau pertaining to dynamic interaction and connectedness of important elements in learning, teaching and is in accord with the principles of the natural environment. As the learner is central in Progressive educational philosophy orientation, the learner is profiled in his/her Learning Style Dimensions, in three dimensions in opposite ways of knowing and behaviour. It also endeavours to profile the individual in relation to functionality – whether he/she tends to be *Direct Involvement* or *Indirect Involvement* oriented, whether he/she is *Leadership* or *Creatively* inclined, whether he/she is *Task Oriented* ~ works *through* others, or *People Oriented* ~ works *with* others.

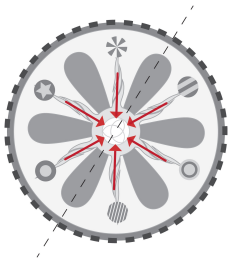
The overlay shows an integrated, synergetic arrangement; it reveals the first stage of dialectics **"One-after-the-Other"** , the second stage **"One-beside-the-Other"** *and* the third stage of **"Permeation of Opposites"/"Negation of Negation"**, positioning all the elements in their proper relationships ~ all connected, interactive, and negating in affordances, thus to unify in dialectic unity for **Transformation**.

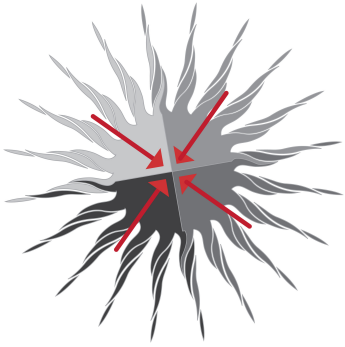


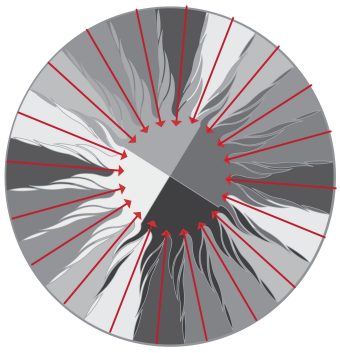
Transformation

Opposites may be represented in aspects such as (egoism / altruism) ; (zero / infinity); (chaos / order) ; (gravitation / levitation) ; (quantity / quality) ; (specialisation / generalisation); (analysis / synthesis) ; (electricism / magnetism) ; (expansion / implosion) ; (pressure / suction); (light / darkness) ; (heat / cold) ; (oxygen / carbons) ; (yang / yin) ; (positive / negative); (string-length / pitch) ; (wavelength / frequency) ; (radius / curvature) ; (radius / angular-velocity) ; (tangent / cotangent).
In relation to learners, one may also include additional aspects such as (city / rural learners); (expediter / designer learners) ; (organiser / communicator Learners) ; (male / female students) ; (extrovert / introvert students) and the Learning Style Dimensions' opposites.

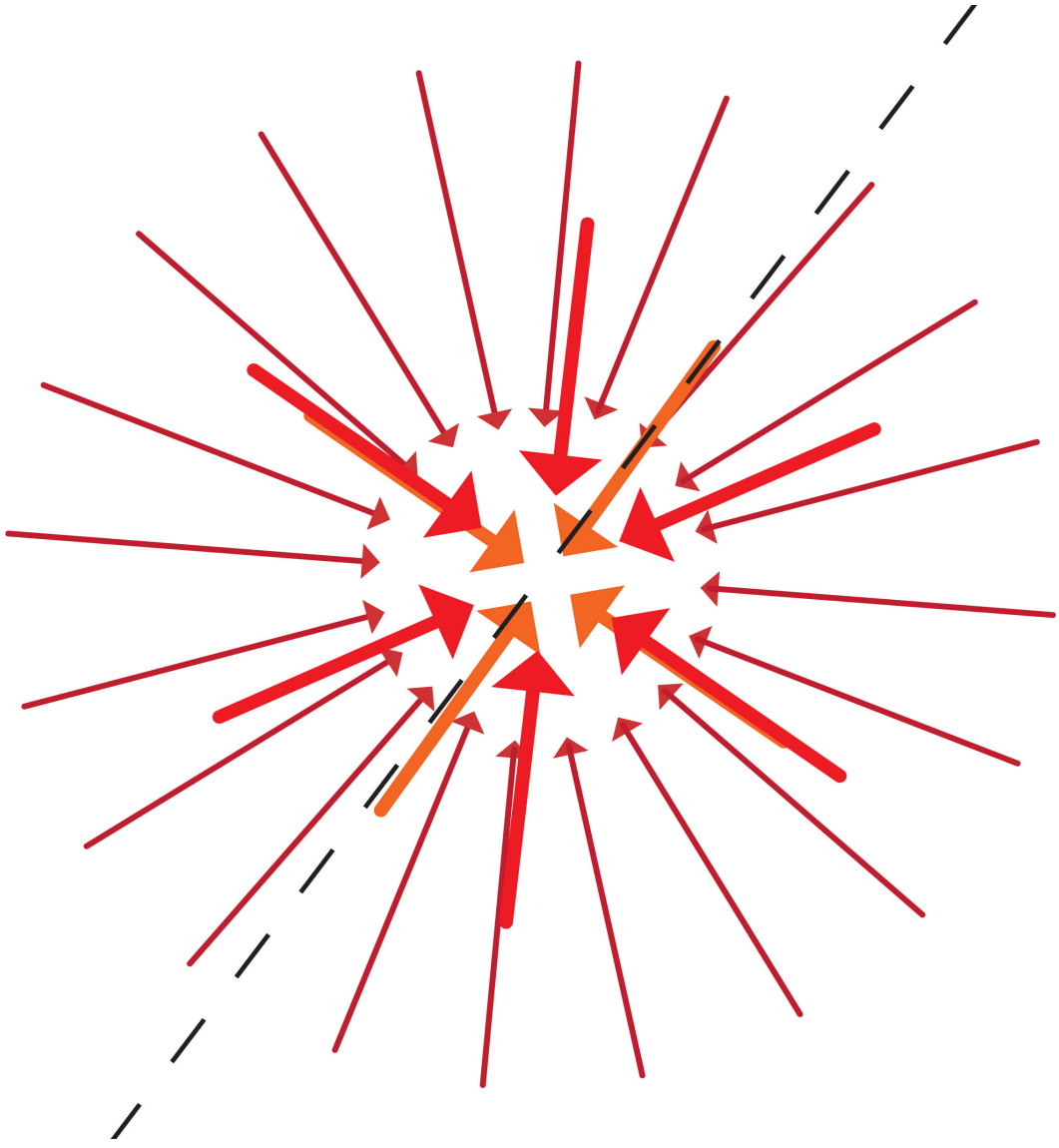
Key-Line Energies







The Overlay Configuration ~
Opposite Key-Lines



All three categories, **A, B,** and **C** are subject to questionnaires in order to comprehensively profile learners. This is necessary, as practitioners need be aware of learner underlying needs in order to reach them in matters conveyed; teachers need to recognise stress behaviours and why they occur. A 'one size fits all' approach to teaching simply will not do, neither will mere observed overt behaviours and practitioner interpretations, assumptions thereto – all too often they are incorrect.
The imagery concept is employed to graphically assist in simplifying the concept by reducing it into four broad categories, quadrants, each sharing similar characteristics.
Symbols and colours used to describe the four characters:-

Action Clipboard **Megaphone** **Computer** **Diary**

Expediter/Doer **Persuader/Communicator** **Thinker/Designer** **Administrator/Organiser**

Quadrant positioning of markers to represent different perspectives to "picture" the individual, a process not limited to mere "labelling".
For instance, it is not uncommon to find different characters /colours / quadrants in association with each other in the various individual profiles created. The make-up of an individual person's profile is therefore not a simple and straight forward process, given the combinations and permutations possible; providing a framework for analysis and observation is complex, given the combinations and permutations possible with the four basic characters and the twelve defining dimensions.

The imagery concept features an arrangement of potentials that are premised on Mutually Interactive Reciprocities in dialectic unity, not based on ranked 'ability'.
The arrangement is based on what the individual may *contribute* in terms of his / her potential and uniqueness; for this to be achieved, the programme will not merely concentrate on the components, but also on the *relationships* between them, and on how they function to interact with each other.
It is in the arrangement and positioning of components that this design has its being and function, and it is the adoption of purpose which decides the direction of the designed imagery concept.
This three-component imagery concept is interconnected and integrated as a whole; to ignore any part may not achieve synthesis and could result in a learning environment difficult to manage, an occurrence not unusual today especially with adolescents, young adults.
Designing with insightfulness and through system-evolution-observation, the practitioner / parent may gain a contemplative and a celebratory opportunity as a consequence.
In celebration, the practitioner may incorporate Multiple Intelligences and the twelve psychological principles pertaining to the student and the learning process.

In contemplation, the practitioner/parent may address myths using an interpersonal barometer through self-answering statements to provide a clearer understanding of 'people-normalcy', social skills' development, and may discover more refined, more subtle insights into constructive parenting.

This designed imagery instrument will attempt to deal holistically with students in the context of the real-world learning environment in regard to how the individual is intelligent and self-discovery, to gain a better understanding of self in comparison to others.
The implementation of a programme such as this is more likely to insightfully introduce the learner to the concept of self-efficacy beliefs, and with evolution, to a more fulfilling lifestyle through personal achievement with a sense of **purpose** and **direction**.

This instrument is capable of producing various student profile reports :-

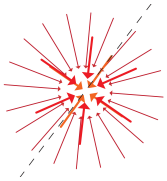
- Profile Report – 'How the Individual is Intelligent' report, and a 'How the Individual is Functional' report, denoting the individual's ways of knowing, Interests, Active/Usual Behaviour (Organisational Style), Needs, Reactive/Stress Behaviour (Stress)

- **Personality-Trait**/**Temperament Report**, denoting *content* of behaviour, may be asked for or may be required when greater detail in relation to the student is needed.
  (Useful also in enabling a better and more balanced pair and group-mix configuration in the classroom if and when required ~ this report will further define the individual and is particularly relevant in tutoring/ mentoring, and of value to the parenting role in the home, the family environment)

- **Pathway Report** -

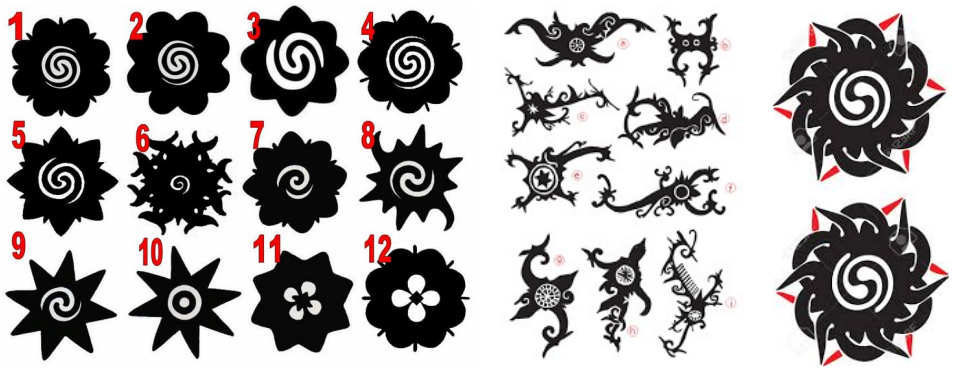
NB.

An Individual student pathway report is not featured in this paper, although is available on request.



A student grouping arrangement in dialectic unity in the classroom is likely to create a very different effect compared with arbitrarily dividing a learning community into pairs, or into small groups. Humans are complex and unique, and to assume that such rudimentary approach to group learning *within* and *between* learning communities to invoke competition, or some other notional objective, is to seriously err on the premise of conformity. Such approach actually corrupts group learning, and at best, might only positively affect a few individual learners.

Human group-membership has long been a deep-seated tendency even with predecessors of *homo sapiens,* and goes as far back as a hundred thousand years or more. In the view of historians, members of one humanoid group distinguished themselves from others, through marking themselves in a prescribed manner.
It is not known whether decorations were carried out for group-marking purposes, or whether early man was already conversing with another in some language or protolanguage, or how such marking patterning related to other early forms of symbolisation.



Traditional Sarawak/Borneo – Dayak & Iban – tattoo patterns

(Iban, Dayak, Bidayuh, Orang Ulu, Kedayan, Kelabits, Punan Bah people)

Today, one example of this deep-seated grouping tendency is evident in the various codes of football ~ the distinctive decorations and colours of team jerseys and in fans' apparel. Fans often adopt a clearly friendly or antagonistic attitude toward other teams and their supporters.

Football apparel

Football fans - elation

Football fans - antagonism & violence

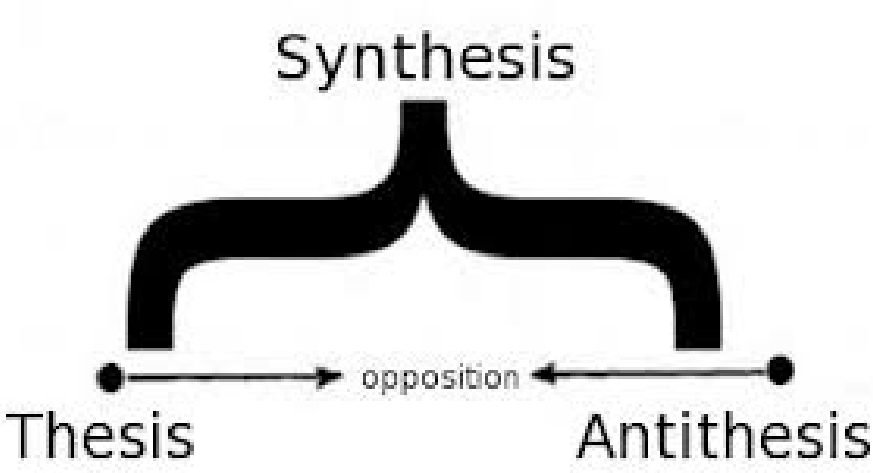
Anthropologist Claude Levi-Strauss considered the dichotomisation of social relationships as a chief characteristic of human beings; the tendency to break into groups and thereby 'organise' social life is seen by scholars as a cultural legacy, one that can be voluntary altered.

Explanatory scaffolding tilts toward biology; scholars emphasise analogies across the order of primates, whilst researchers search for evidence that part of the human brain is associated with the recognition of group differences and the presentation of congenial or antagonistic relations that may prevail between groups. Such biological explanations have limitations, though.

For instance, they do not account for the contours, breadth or flexibility of in-group and out-of-group distinctions ~ human beings may exhibit both aggressive and congenial tendencies in affiliation.

Any stance toward another group, therefore, may be retroactively rationalised. Even if biological bases can be found for dichotomisation, humans in every generation must attempt to manage these proclivities and where possible overcome them.

However, a more plausible avenue may lie in education and through collaborative experiences, according to Professor Howard Gardner.
One needs to focus on **human functionality**, and **how the individual is uniquely knowing,** connected, with both elements arranged and conforming to a Polar-Unity-of-Opposites design.
The scenario of argument, counter-argument and synthesis, which may be seen to merge themselves in a higher truth that comprehends them as interactive reciprocities, is an occurrence in dialectics that is particularly relevant in **human development** and largely ignored in classroom teaching.



Dialectics may be characterised as the science which concerns general relations of things in Nature, in history, and in **thought**. The opposite of dialectics is the ***isolated consideration*** of things, and the consideration of things only in their **fixity.**
Dialectics, to the contrary, considers all things in their most general relations, in their mutual relations of ***dependency***, not in their fixity, but in their **development.**
This aspect and viewpoint of human development is not inconsistent with one of Professor Howard Gardner's eight criteria supporting Multiple Intelligences, the one that makes reference to an evolutionary history and evolutionary plausibility.
He suggests that in order for an intelligence to qualify to the list of intelligences he compiled, there must be evidence for it in prehistoric life of humanity, even in earlier phases of evolution before civilizations sent roots into the nucleus of living systems.

It is appropriate, therefore, to consider the interpretation, configuration of Professor Howard Gardner's Multiple Intelligences theory, as first featured in the author's Master of Arts thesis. This, for the grouping concept to be understood and, of course, its intended effect on a learning environment.

How one is intelligent, portrayed as Essential Learning Styles and Learning Style Dimensions is an adaptation of Professor Howard Gardner's Multiple Intelligences theory, a vital and integral component at the centre of the three-component instrument.

It is inspired by the insights of Johann von Goethe, the thinking of Rudolf Steiner, Bill Mollison, Georg Hegel, Viktor Schauberger and others.





J.W. von Goethe, **G. Hegel**, **R. Steiner**, **V. Schauberger**, **W. Mollison**

(From left to right)

With creativity of mind one may attain some intuit to interpret these forms and creations of Nature, thus identify the ideas that properly belong to the phenomena, according to the philosophy of Goethean Methodologies and Bio-dynamics.
The latter is explained as a science of life-forces, a recognition of basic principles at work in Nature ~ it integrates precise observation of natural phenomena, an approach which takes into account clear thinking, and knowledge of spirit. It brings about in a real way an ongoing path of knowledge, rather than a focus on assembly of methods and techniques alone; the system of Bio-dynamics is harmonious with the framework of Permaculture design principles.
Many of the insights of Bio-dynamics are rooted in Goethean Science; this School holds the view that every empirical object/situation is incomplete, that it is only half there, and that it should be completed by its other half, by the idea proper to it.

One should, in observing, not merely observe an external world available to one's senses; one should observe the internal world of ideas in order to enable one to apprehend the totality of the phenomenon.
Every empirical thing has its ideational aspect which is perceived only by the human mind as the inner form, another way of knowing the world, through awareness as a by-product of brain and body processes.
Awareness of how people perceive, how they interpret and direct their attention and intentions toward their environment and each other.
Whereas external perception may describe and explain natural phenomena, internal perception gives one wider connections and underlying ideas.
Applying the internal world of ideas to the scenario of the practitioner trying to 'energise' and teach a classroom of students by him/herself, one is apt to believe that it only represents half the solution; 'the other half', collective-learner-dynamics, is invariably missing.

A vital component to learning/teaching been overlooked, it would seem...

The Goethean Approach differs from the normal scientific approach which tends to divide into the external, real and objective.
The internal world of concepts and thought, symbols are arbitrary, are subjective, according to conventional philosophy. Goethean Methodology, however, views quick drawn hypotheses as subjective, of diminished value, and the proper idea belonging to the phenomenon as objective, as the phenomenon itself.
The correct idea that belongs to it is not normally derived from hypothesising or postulating; however, by staying with the phenomenon, seeing it in one light and then in another, observing the coincidental aspects that make up the whole will enable the mind to make the proper connections without straying into fantasy. Eventually concepts will materialise to satisfy the mind's need for an explanation.

In regard to the Essential Learning Styles and Learning Style Dimensions, all human beings possess at least eight relatively autonomous cognitive abilities, each as a separate intelligence, but connected.
People differ in their profile as to how they are intelligent, and this holds significant consequences for learning and pathways.

In relation to the second part of Howard Gardner's threefold cornerstone search for making a case in support of his Multiple Intelligences theory, he suggests that it should be possible to draw up an individual's intellectual profile, proclivities, at an early age and then draw upon this knowledge to enhance the person's educational opportunities.
The individual intellectual profile features Essential Learning Styles and Learning Style Dimensions and is configured as a Perma-cultue's Keyhole Circle Garden concept, with the position of the Learning Style Dimensions positioned as 'Opposites', as two sides of the same coin ~ two discrete entities emanating from a single generative principle to attain a cohesive whole ~ a 'balanced-imbalance', as in Nature.

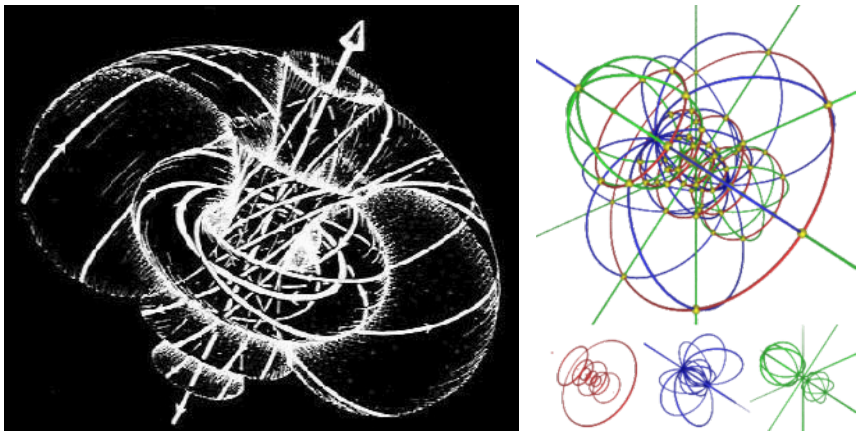
Keyhole Circle Gardens are found in Taiwan and the Philippines, where small intensively planted gardens are planned to feed a family of five all year round.
The design owes much to the work of East-West Institute in Hawaii and the Samaka Gardens of the Philippines, but the layout is distinctly Permaculture.
It embraces the concept of guilds, and in design represents a 'least-path' layout to give a succinct and productive model of a sustenance garden. It relies on companion planting, edge cropping theory, eco-tones, an overlapping of mediums for greater soil life activity, for an enhanced yield.
At the centre of a hundred square metre garden area, a circle of approximately two/three metres across and a depth of some three/four feet from hollow to rim, usually contains a circle-garden of banana, sweet-potato, and papaya irrigated by all household wastewater.

Permaculture Keyhole Circle Garden

However, for the purposes of this paper the inner circle garden features the Essential Learning Styles ~ Visual / Audio / Kinaesthetic ~ autonomous, but connected as One. The Learning Style Dimensions ~ Social, Logical-Mathematical, and Psychological-Physical dimensions, six elements in all, are located at the keyhole path ends, with Naturalist intelligence portrayed as a large green "asterisk" in the background and Existential intelligence featured as a blue interrupted circle surrounding the Keyhole Circle Garden image.
The surrounding circle represents to the Permaculture Keyhole Garden hedge-row concept, normally made up of pigeon- pea, cassava, crotalaria, papaya, Leukaemia, eupitoreta and acacia as a barrier to resist invasive grasses and feral animals.

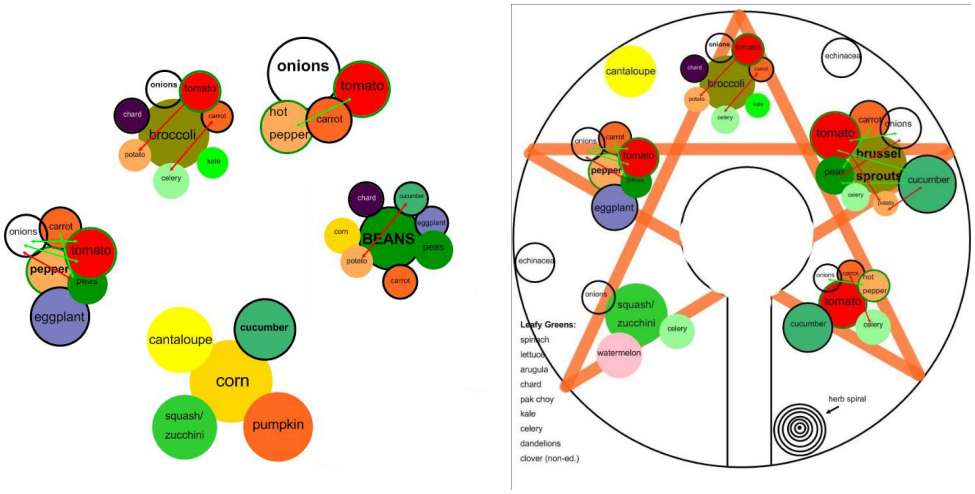
Permaculture hedgerows

All learners possess the Essential Learning Styles, unless an individual is sight, hearing or physically impaired, when the remaining styles and proclivities tend to compensate for the handicap.
It is important that all three be developed to the maximum ~ particularly eye and ear, vision and sound respectively, as they are the foundational elements in the development of personal performance potential.
They are relatively autonomous, but connected, and to portray this fact the image is mirrored on the DNA signature in the Robinson congruence.



DNA signature in the Robinson congruence

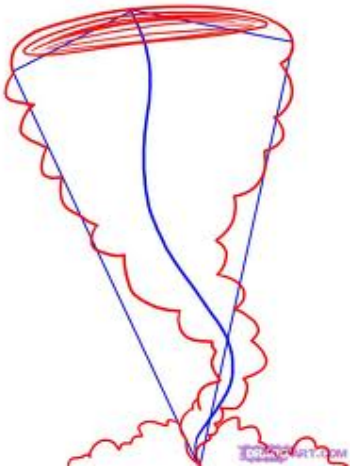
In relation to the Learning Style Dimensions, the pair-mix is important in order to gauge and connect motivation with interests for the purposes of students reaching their goals.
The arrangement of pairing students, opposites in each of the three dimensions, is likely to complement as well as contrast potentials, is likely to differentiate individual focus and orientation in terms of direct or indirect involvement, working with or working through others to achieve goals.
In this regard, one may recognise similar and parallel lines between different ways of learning and personality traits, looking closely. Provision must be made to cater for the individual in the group who may be somewhat overbearing, who finds difficulty in maintaining a 'neutrality pact', and who may need to be replaced in the group or be paired with another learner.
This mix-and-match skill is not infrequently applied in finding the most suitable guild of plants, particularly concerning the aspect of Natural Pest Control by inter-planting herbs; some herbs may be too strong, or may be antagonistic to productive plants nearby, within the guild.

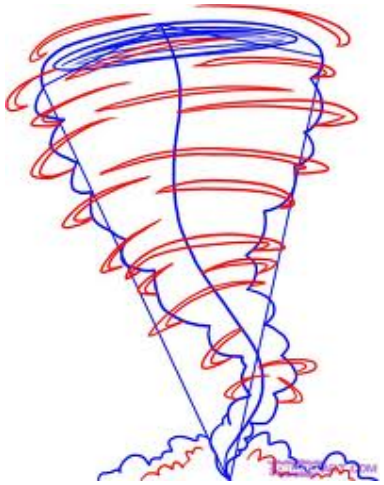


Permaculture guilds

The six different dimensions provide the practitioner with scope in this regard, as well as being able to draw on those who show promise in Naturalist and Existential intelligence for a different perspective on tasks set.
The Learning Style Dimensions define the student; students paired within a group of six positioned in such proposed arrangement produce synergy, a process of thought, negation, by which such contradictions are seen to merge themselves and positively so, in a higher truth that comprehends them.

This phenomenon, as the foundational dialectic proposition, is explained by appraising the elements of argument, counter argument and unity in the dynamics of a tornado, according to Viktor Schauberger.





The Tornado

The tornado descends from a lower to a higher atmospheric density and normally takes the form of a hyperbolic funnel. The smaller the radius, the higher the rotational velocity ~ Radial - Axial motion, moving from the outside inwards.
In the eye of the tornado there is an upward movement ~ suction. Suction and pressure are the two forces interacting in this analogy, each being the counterpart of the other, and taken together represent the undivided phenomenon.
These forces could be viewed as two discrete entities emanating from a single generative principle. In terms of dialectic thinking, logical thought, these forces could also be interpreted as two counter concepts of argument.
According to German philosopher Georg W.F. Hegel, dialectic thinking refers to the process of thought by which such contradictions are seen to merge themselves in a unifying principle, that comprehends them. There are various examples of reciprocities, in which, generally, argument is the quantifiable aspect and counter argument the qualifiable aspect, both of which are represented in the equation formulated by Dr. Walter Schauberger.

$$1/n \times n = 1$$

1/*n* stands for the **quantitative** component, and **n** for the **qualitative** componentt and *n* itself is equal to any integer from naught to infinity. The answer is ***always*** **one** (**1**), and echoes Albert Einstein's observation that Nature is the embodiment of the simplest conceivable mathematics.

Viktor Schauberger maintained that any given phenomenon always has its counterpart, its counter aspect, and **both** components should ***always*** *be taken into account*. The manifestation of all natural forces is the result of the interaction between two opposites, neither of which ever reaching totality in the lower realms of duality, the physical world, for they can only become total when they unite within their unifying governing principle.

The interaction process between two opposites and dialectic unity, the fundamental principle and the first main proposition of dialectics, in terms of dynamics is perhaps best elucidated by the argument and counterargument of Yin and Yang, as in the two spiral systems, the female and male forces of the pine cone, by Callum Coats.

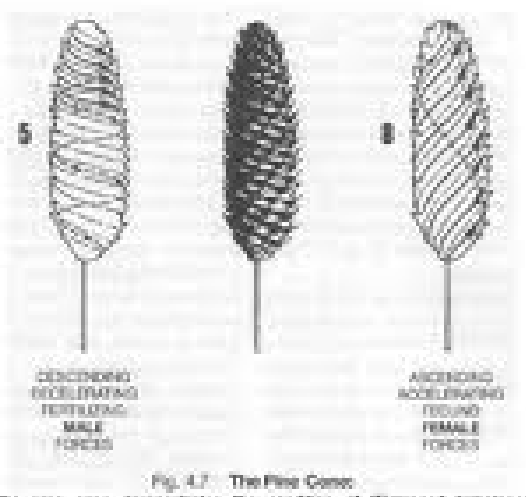


Fig. 4.7 The Pine Cone

The symmetry of the pine cone demonstrates the condition of "Balanced Imbalance" which arises out of the harmonic interaction of two antithetical, complementary, but oppositely charged forces. The 5 positive male spirals of energy descend towards the 8 rising negative female spirals of energy. Where these cross each other a union of both forces occurs and there the seed of the new life is to be found. The male forces decelerate and the female forces accelerate to arrive at a mutual state of resonance.

The spiral systems demonstrate, he contends, that the condition of 'balanced-imbalance' arises out of the harmonic interaction between two antithetical, complementary, but oppositely charged forces. The five positive male spirals of energy descend toward the eight rising negative female spirals of energy; where these cross each other, a fusion of both forces occurs, and there the seed of new life is to be found. The male forces decelerate, whereas the female forces accelerate to arrive at a mutual state of resonance; they have a common wavelength, dynamically viewed as cycloid-spiral-space curves.

As they curve out from their common axis, they eventually return to it over the full length of the cone, the eight female spirals having a slower rotational period than the five male spirals.

Within the wavelength, there are points where the spirals interconnect 'creatively'. Such a point is referred to as 'zero-point'.

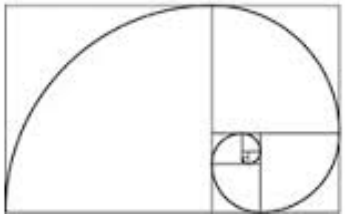
It is this point where both male and female negate, where energetic attributes die, or are temporarily suspended in order that new life may be created.

The zero-point is where all motion ceases and where all motion begins; it is a point of extremely high potential in the same fashion that a string of a musical instrument is still in a state of tension, of sound-creating potential, even though it is not vibrating. In this circumstance, there are two systems of opposing, complimentary energies creating symmetry, notwithstanding unequal forces.
In the function of dialectic magnitudes, it is the antitheses that prevail over theses to proceed productively. That is to say, the effect and function of the antithesis of each dialectic unity should predominate.

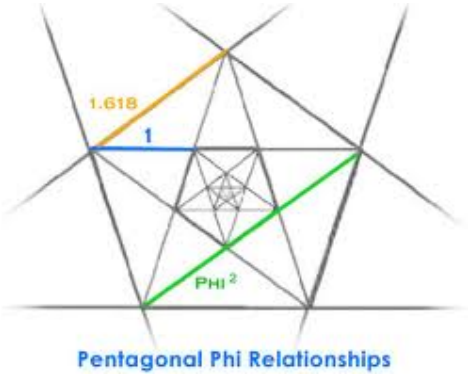
Viktor Schauberger estimated the correct proportion between argument and counter-argument to be 1/3rd and 2/3rds. The Chinese also consider an unequal relation to be the one most propitious for the harmonious unfoldment of life, their ratio being 2/5ths to Yin, and 3/5ths to Yang.

However, due to the manifestation of *Phi* in so many of Nature's creations, the '**Golden Section**', the transcendental number (1 : 1.618033988) describing the circumference of the circle, the proportion of 1 : *Phi* is probably the more correct, since a proportion of slightly more than 1 : 16/10 lies between the two ratios of 2/5ths and 3/5ths = (1 : 1 $\frac{1}{2}$) and 1/3 : 2/3 = (1 : 2).

An example of Fibonacci Numbers in the form of a Nautilus shell.



φ phi



Pentagonal Phi Relationships

Using weights and a pivoting weighing scale, the relative magnitudes of these forces are perhaps more clearly revealed.

A 1 kg weight **(B)** for thesis, and weight **(A)** of 1.618033988 kg for antithesis.
The antithesis weight is at a distance of 1/*Phi* x m, or 0.618033988 cm from the pivot of the scale, whereas the other is 1 metre distant.
Weight **(B)** exerts a moment about the pivot calculated as 1 x 1m = 1 kg/m. Weight **(A)** exerts the same moment, however, 1.618033988 kg x 0.618033988 m = 1 kg/m.
The seesaw of life is in a state of 'balance', even though the absolute force of one magnitude is greater than the other.
The resultant downward force is the sum of these two weights and equals 2.618033988 kg, which equals (2.618033988) or *Phi* squared.
Through the interaction of two proportions, the unstable dynamic balance, the 'balanced-imbalance' in Nature and her energetic processes is achieved.
Were it not for this tentative balance, **no forward progress is possible**, according to Viktor Schauberger.

It must be noted, that it is the *second* main proposition of dialectics, the principle of **Negation of Negation**, that constitutes ***the principle of development*** through opposites, the principle of the process of thought / thinking, according to theoretician and philosopher August Thalheimer. (1884 – 1948)
It is closely related to the first principle of **Permeation of Opposites** as featured above; the second main proposition of dialectics is a presentiment in the oldest of Chinese philosophy, in *Book of Transformations*, Lao-tse and his disciples and likewise in the oldest of Greek philosophy ~ Heraclitus; however, not until Georg W. Hegel were the principles of dialectics properly developed.
Disregarding the beginnings of dialectics in Indian and Chinese philosophy, dialectics itself has undergone a 'dialectical development'.
Heraclitus represented the *first* stage, **'One-after-the-Other'**, Plato and Aristotle represented the *second* stage, **'One-beside-the-Other'**, the latter in opposition to the dialectics of the first stage, being its negation.

The *third* stage was developed by Georg F. Hegel of Berlin University, who embraced variation of natural processes, as the first source.
The second source was his observation of human history, of changes which occur from one historical period to another, changes in the mode of production, in the forms of society, and in social ideologies associated with them.
The third source was his examination of human **thought** *itself;* it begs the question what proof is there to be found, that the principles of dialectic thought are in accord with the principles of reality?
Are they in keeping with the principles of change in Nature?
Correlation is not remarkable nor difficult to find, since man is part of Nature, and human thought is in the last analysis a natural process, the same kind as any other process in Nature.

The opposite would be inconceivable.

The most general and the most inclusive fundamental principle of dialectics from which all others are deduced, is the principle of Permeation of Opposites.
This principle has a two-fold meaning: first, that all things, all processes, all concepts merge in the last analysis into unity.
Secondly, and just as valid, that all things are at the same time different and opposed ~ this principle may also be referred to as the **Principle of Opposites**, and applies to **every single thing**, **to every single phenomenon**, ***and to the world as a whole*.**
In relation to thought it may be put this way; on the one hand the human mind is capable of infinite condensation of things into unities, even the sharpest contradictions.
On the other hand, it is capable of infinite differentiation and analysis of things into opposites. The human mind can establish this unlimited unity and differentiation because they are present **in reality**.

If one takes night and day as an example, there is the twelve-hour day and the twelve-hour night, a period of light and a period of darkness.
Day and night are opposites; they are mutually exclusive. This, however, does not prevent their being, at the same time, parts of a twenty-four hour day.
Where only simple objects of direct perception are involved, where social interests are not involved, the conception which asserts the identity of opposites will usually meet with no difficulties.

Obstacles to this conception present themselves when social interests oppose it, or when it is no longer a question of ideas. The question of social distinction by some, between white and coloured people, for example.
To comprehend that these are not absolute opposites, but that they are united in the concept of mankind shared equally by white and coloured requires not only a dialectically trained mind, but also a definite social viewpoint, as espoused in Progressivism and Social-Reconstuctionism.
The untrained mind, therefore, may be confronted with peculiar difficulties when general concepts are in question, difficulties that increase as the more abstract, the further removed these kind of concepts become from sense-perception. It is much more difficult with such opposites as True / False, and still more difficult with the concepts of Being / Non-Being, which are perhaps the most general of all, the most inclusive, yet the poorest in content.
One could argue, how is it possible to unite such absolute opposites as being and non-being?
Either a thing is, or it is not, and surely there cannot be common ground between them.
The following example may clarify this question; a boy developing into a man is a child and at the same time not a boy any longer.
So far as the individual is becoming a man, the individual ceases to be a boy.
But he is not yet a man, because he has not yet developed into a man.
The concept of 'becoming' contains concepts of being and non-being.
In this concept example they permeate each other.
The obverse side of the coin, another aspect of the proposition of the Permeation of Opposites ~ there are no opposites which cannot be united, no opposites between which there is no identity, whilst at the same time there are no things between which there is not some difference, some opposition ~ e.g. the opposition of things is just as unlimited as their identity.

It is in the nature of things as well as the nature of the mind, that no two things exist which do not differ. The capacity of the mind infinitely to equate things as well as to differentiate and oppose, corresponds to the infinite identity and the difference of things in Nature.
This principle of the Permeation of Opposites may be deducted from the examination of thought itself.
In **thought** this principle is inherent in the basis of consciousness, and this basis consists in the fact that one knows that one is part of the universe, a part of being, and on the other hand, in the fact that one knows oneself to be distinct from the external world, distinct from other things.

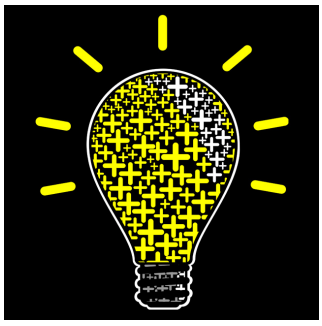
Discourse – Dialectic
= Leverage existing knowledge/
Generate new thought

The basic structure of thought is, from the very beginning, a Polar-Unity-of-Opposites; from this all other principles of thought are derived and corresponds to the nature of all things.
This principle applies to all motion and changes of entities ~ to real entities as well as to their images in one's mind, e.g. imagery and mental concepts.
It states that entities and concepts move, change and develop.
All fixity of individual entities is merely relative and limited; their motion, change, or development is potentially unlimited ~ the principle of the Negation of the Negation has a sense beyond the mere proposition that all entities are processes; they involve change, and also states something about the most general form of these changes, motions, developments.
All the aforementioned factors take place through opposites, or contradictions, or through the **negation** of an identity.
Conceptually, the actual movement of entities appears as a negation, which represents the most general way motion or change is imaged in the mind.

This is the first stage of this process; the negation of a thing from which the change proceeds, however, is in turn subject to the principle of transformation of things into their opposites.
The negation is itself negated and thus the reference '**Negation of Negation**'.
This phenomenon logically results in something positive, in thought as well as in reality.

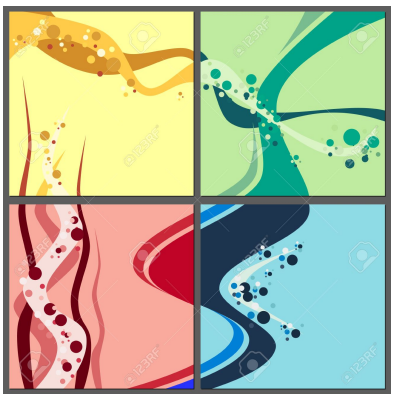
Negation and affirmation are polar concepts; negation of the affirmation results in negation, whereas negation of the negation equals affirmation ~ if one negates YES, the outcome is NO – the first negation. If one negates NO, the outcome is YES, the second negation. The result is something **positive.**
Even in everyday speech, for example, an affirmation results from a double negation; however, and this is the definitive aspect, the old and the original are **not re-established** by the double negation in dialectics. It is not a matter of *a* return to a starting point, but of something **NEW** arising.

The identity, or the condition with which the process started is re-established on a higher plane. It is through the process of double negation that new qualities and new forms emerge, forms in which the original qualities are not only retained, but **enhanced.**
To understand the principle of the Negation of the Negation correctly, one must guard against two misinterpretations.
Thesis and antithesis are dialectically united in the final proposition; the dialectical union must not be mistaken for the mere summation of those qualities of two opposite things which remain after mutually exclusive qualities are cancelled ~ dialectical development does not occur in this fashion.
This would constitute mixture or effacement of opposites, a hindrance to dialectic development.
It is a necessary characteristic of dialectical development that it fulfil itself through negations.
In language learning, negations are only possible through the recognition of **affordances**, and learners being interactively engaged ~ Prescribed Methodology, 'correct way' learning, and a teacher-centred environment does not occasion openings for this phenomenon to occur ~ without negation there is **no process**, **no development**, **no emergence of the New**, **no emergence of 'original development'**.



In society, negation is expressed as struggle which abolishes the old ~ pseudo-dialectics says that a mutual understanding, a compromise is attempted between the old and the new, that an attempt is made to unite the old and the new, without rejecting the old.
This misunderstanding of the dialectics of development is due to the fact that the role of negation as an essential factor in unification is ignored.
There is also an opposite misunderstanding that arises from a disregard of the fact that the new which emerges from the process of development not only negates or neutralises the old, but also retains the old ~ if this is ignored, the dialectics of development is distorted.
There is only one kind of negation in which the thing negated has nothing more to do with that from which the development proceeded ~ this is complete negation or destruction, development forced beyond its limits, transformed into its opposite, into fixity, or lack of development.
It must be understood that negation in the dialectic process is not absolute, is unconditioned, nor complete; it is relative, conditioned and is partial.
The first distortion of dialectics, the distortion which disregards negation, may be called the opportunistic distortion.
The second, in which the retention of the old in the new is disregarded may be called the anarchistic distortion.
These two opposed distortions are alike in that both put an end to development – the first because it puts an end to negation as the moving force of development, the second because it puts an end to the connection between opposites.

The relationship between the first main proposition, the proposition of Permeation of Opposites, and the second proposition, the Negation of the Negation, is the Permeation of Opposites as a process in time, and in sequence.
It represents the general relations of things from the point of view of structure, whereas the second principle represents the relation of things as a process.
These two propositions are so related that they hold true *ad infinitum* ~ a process for everything at the same time, and to the same extent.
They permeate each other, they form a coherent whole.



The *third* main proposition of dialectics, the principle of **Transformation** of quality into quantity and of quantity into quality, states that the mere augmentation of an entity or entities produces a change of quality, of characteristics and conversely, that a qualitative change produces a quantitative one.
To elucidate the relation between the third main proposition of dialectics and the first two, the substance of water is an example.



Water has a definite temperature, an optimum health temperature at 4 degrees Celsius; if the temperature is raised one will not achieve an ever hotter temperature of water, but instead, at a certain point steam will occur.
Likewise, if temperature is lowered, water does not become colder indefinitely ~ at a certain point it becomes ice.
It freezes because of the decreased quantity of molecular motion.
Temperature is merely an expression of the motion of the smallest particles, the molecules.
If one changes the molecular motion or the speed with which the molecules move about, the characteristics will change at certain points from gas to liquid, liquid to solid.
Conversely, ice can only be changed to water, or water to steam if the quantity of molecular motion is changed.
The relation of the third proposition to the first two is that the principle of the Transformation, of quantity into quality and vice versa merely represents a special application of the first proposition, the principle of the Permeation of Opposites.

Quality and quantity are polar opposites; quality is quantity analysed ~ quantity is quality analysed.
An apple, a pear and a plum all have different qualities and can only be counted together if their different qualities are abstracted from them or negated. One cannot add an apple, a pear and a plum together ~one can only say 'three pieces of fruit'.
In other words, negated quality is quantity; negated quantity is quality ~ these opposites are contained in each thing.

Perhaps the finest example of the Transition / Transmutation process is Bio-dynamics' **'Preparation 500'**.



It represents a process based on Polar Opposites, on dialectics - all three main propositions, and if applied to the soil every year, one's garden, farm is linked into the wider and deeper processes of Nature, according to Rodney Blackhirst.
The mid-to-longer term effect in applying this Preparation, is to significantly increase the humus levels of the soil and improve its structure, with decidedly positive effects on plants. It enhances the processes of exchange and transmutation in the realm between plant and mineral ~ it is said that plants become more fully macrocosmic, become more sensitive to their environment, including the stellar environment and select their nutrients more 'intelligently'. Preparation 500 is made with fresh, pasture-fed cow manure, which is put into a cow horns and buried in the soil for the winter under strict conditions.
The preparation process involves such opposites as the Earth's Warmth and Cold, Chaos and Order, stirring Clockwise and Anti-Clockwise for an hour exactly, for a transmutation from Quantity to *Quality* in the end product.
The distribution of Preparation 500 must be in homeopathic quantities and applied directly upon the soil, during the right lunar position, and season for it to be effective.
According to Dr. Wolf Storl, it was during Rudolf Steiner's fifth lecture, that the possibility of the transmutation of elements within the realm of living chemistry was suggested, and the implication was made that the chemistry of living organisms transcends that which can be asserted in the test tube.
Preparation 500 is a soil microbe activator, a soil humus builder, and very beneficial to plants and soil microbes ~ a 'Technology of the Four Elements' according to Rodney Blackhirst.
Laboratory tests in relation to Preparation 500 have revealed that significant internal changes take place in the manure during overwintering in the cow horns; [3] ***principal changes are a significant drop in pH, increases in aerobic status, and production of nitrate.***

[3] ***Dynamic Chemical Processes Underlying BD Horn Manure (500) Preparation*** **– Wm. F. Brinton Jr., Woods End Research Laboratory, Journal of Bio-Dynamics Vol. 214.**

An important aspect is that the process results in little evident loss of organic matter ~ these are <u>most unusual</u> findings when analysing manures and composts.

Rudolf Steiner's Bio-dynamic Preparation 500 is in tune with the much earlier the three delineated principles of living organisms by von Goethe, plants in particular. [4] His first principle, The Principle of Polarity is noteworthy, since von Goethe's characterisation of the 'Ur-Plant', or 'Primal Plant' took place on a journey through the Swiss Alps into Italy during the years 1786-1788 ~ interestingly, Georg Wilhelm Friedrich Hegel was only sixteen years of age at that time, and Rudolf Steiner was not born until 1861 ...
Von Goethe asserted, that one of the major characteristics of plants is their **dualistic nature**; from the seed the plant grows geocentrically into the soil *and* into the air. Nowhere is something similar to be found in inorganic Nature; another example of polarity, of antitheses, not considered by science, are Gravitation and Levitation.
The latter is not taken into account at all ~ considerable consideration is afforded to element of Gravity, yet Levitation is omitted notwithstanding this force is **basic** to Nature.
What else if not levitation enables a tree to grow upwards against the action of gravity ~ were there no levity, the tree would merely spread out horizontally over the ground in a green amorphous mass.
However, it thrusts skywards and does so in response to another force operating in the opposite direction; **this is Life-Force, a quickening, uplifting energy and when extinguished the living organism will die.**

Plants respond to the polarities of day and night, winter and summer, waxing and waning moon. Polarity is found in the male and female flowers, in the round cosmic bud and the extended terrestrial leaf, in the green chlorophyll molecules and the red haemoglobin molecules, which are perfect mirror images of each other except that the haemoglobin has an iron radical where the chlorophyll has a magnesium radical attached.

The practiced Bio-dynamic grower looks for harmonies and symmetries, thinking of the roots when looking at the leaves and flowers, thinking of the opposites that make up the complete picture. It should be realised, that each thing, entity has a definite size, quantity, or degree and at the same time definite characteristics. All things have, at the same time, quality and quantity ~ ***as opposites they permeate each other and are transformed into each other.***

It is important, therefore, to be conscious of the dialectical nature of things in teaching and learning; it is not 'magic', neither is it part of anyone's natural equipment. This is a skill that must be practised and learned by practitioners and learners alike, hence the creation of a Comprehensive Learner Profile in dialectic unity, a schema for the realisation of learner self-efficacy beliefs.

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[4] ***Culture and Horticulture: A Philosophy of Gardening*** **– Dr. Wolf D. Storl, *The Primal Plant*, Page 100/101/102/103 , Bio-Dynamic Literature, Wyoming, Rhode Island, USA, 1979.**

It should be realised that dialectics and its fundamental principles can only be understood through repeated study and practice; ultimately anyone can grasp them because one has the proof of dialectics in one's daily experience, as well as in one's own mind.
In this respect human thought is exactly the same in all minds.

The most general characteristic of dialectical thought is the study of things in their interrelations, in both One-Beside-the-Other relations, and One-After-the-Other relations ~ that is, in their changes, their transformations.

Grouping in this fashion will ensure that it is **always** the **qualitative** that is

the delineating factor and the animator in a learning environment ~

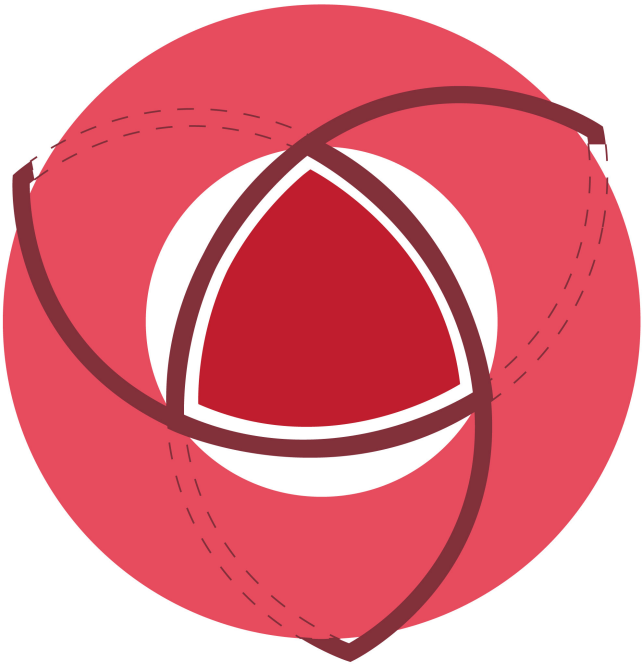
an essential ingredient for effective learning.

The Essential Learning Styles and the three components of

Learning Style Dimensions

The Essential Learning Styles

Auditory Learner Kinaesthetic Learner



Visual Learner

The three categories of Learning Style Dimensions

1. Psychological-Physical

This dimension incorporates learning to include the processing of stimuli, Auditory / Kinaesthetic / Visual, in relation to the individual's internal 'body image' based on muscular feedback and motion awareness. This dimension spans the three Essential Learning Styles.

The Left-Brain dominated Learner

This learner relies on language in thinking and remembering.

The Right-Brain dominated Learner

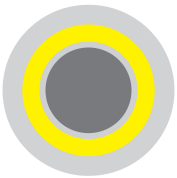
This learner relies on drawing or manipulation to think and learn.

2. Logical-Mathematical

This dimension, also known as the Abstract Dimension, is acquired through invention or recognition of patterns or relationships based on interactions, interconnections. It involves another level of processing, that of explicit sensory information.

The Deductive Learner

This learner prefers an overview, the total picture ~ MACRO

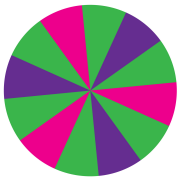


The Inductive Learner

This learner prefers the facts, all the details ~ MICRO

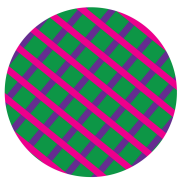
3. Social

This dimension involves cultural knowledge and involves values, morals, ethics etc. This dimension includes emotional learning and spans two basic types.



The Independent Learner

This learner prefers self-directed activities ~ 'Loner'



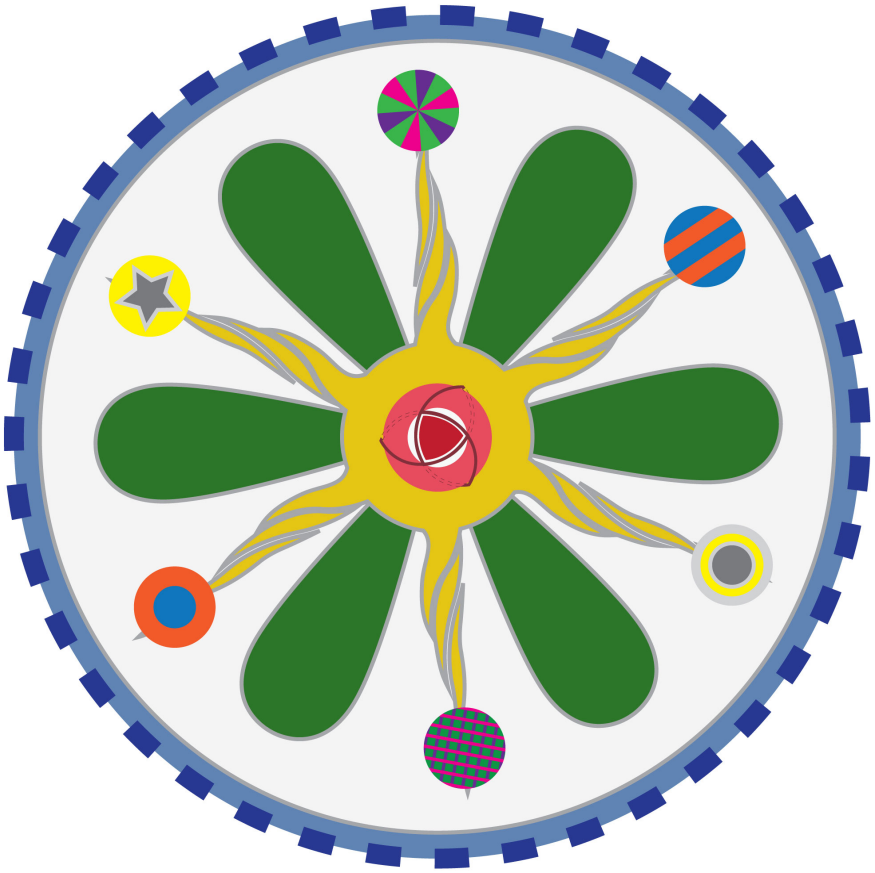
The Collaborative Learner

This learner prefers co-operative learning ~ 'Social butterfly'

A Learner Grouping Model

Essential Learning Styles & Learning Style Dimensions

in Dialectic Unity



Naturalist Intelligence ~ *

Existential Intelligence ~ - - -

Individual Behavioural/Functionality Profiling involves individual intelligence profiling, featuring a visual display at the centre of a functional behavioural schema based on Interests and Needs, and an individual personality trait profile to augment, articulate behavioural trends, as the human individual is unique and complex in make-up.
A learner behavioural/functionality profile is important; that is, if open dialogue, learner interaction and collaboration are desired, because people tend to form assumptions about others usually based on overt behaviour only.

Profiling students in this fashion may avoid disruptive diversions due to blame, cultural differences, aspects of personality, reactive behaviours; these disruptions usually emanate from **right perceptions – wrong assumptions**.
It is a matter of seeing past behaviour, expression, culture, and seeing the learner and how he she **thinks** and **feels**.
'Social behaviour', a screen not unusual for people to hide behind, because many people feel trepidation in discovering who they really are, usually due to and conditioned through and by social conventions and/or traditions. This is an important aspect in relation to collaborative learning especially ~ differences in family culture, attitudes and behaviours increase in significance in situations where the persuasion of others and our own persuasions prevail.
Aspects such as cognition guiding behaviour, generation-gap ideologies and differences will also impact families and people as the emerging approach to leaning is 'knowing perceptively' rather than by rote and, of course, the fact that intercultural interactions and exchanges are rapidly increasing, linking people's lives more intensely and more immediate than before.
For example, cross-cultural differences regarding attribution are more prone in Western societies, as they are more inclined toward personal bias. Western cultures tend to emphasise the notion that people can take charge of their own destiny. Eastern cultures, however, tend to emphasise the role of fate, or circumstances in controlling one's destiny; in the latter case people will tend to make more situational attributions.
When making attributions about one's own behaviour, personal bias is viewed as **weaker** than situational bias and is becoming an increasingly important aspect in multi-cultural societies today.

Trepidation in relation to self-discovery is not least due to the myths surrounding 'people-normalcy'; if one can see past these, one's relationships with others, including parents and their children, may become clearer.

Myth One :~ '***I am normal, and anyone who is different is abnormal*** '.

Myth one is exemplified in the situation where a parent assumes that one strict set of criteria is norm.

From a personal perspective one's opinions are usually based on one's own characteristics and normalcy is determined by one's inner definition of what is normal. As one observes others and situations around one, one may automatically determine to what extent others are behaving normally, based on one's instinctive definitions. Meanwhile, others are looking and thinking exactly the same in reply. It is not a matter of others or oneself, as there are no criteria to define 'normal'; therefore, nobody is normal and everyone is.

Myth Two :~ '***My way is the best way***'.

Myth two is exemplified in the situation where a parent may force his / her expectations on their children or others.

From a personal perspective one learns from experience and one's experience is usually based on one's unique interests, needs and personal strengths. Consequently, the methods one may devise adopting this stance may seem awkward and unnatural to others.

Myth Three :~ '***The way a person acts is the way that person needs to be treated***'.

Myth three is exemplified in the situation where a practitioner/parent may defy logic or reason in actions and attitude in a learning environment; a parent/ practitioner who always speaks with a laconic authority, for instance.

The learning community knows better than to question his/her judgement; learners simply listen to his/her directions and comply with his/her wishes. From a personal perspective one may act boldly or aggressively, but it does not necessarily follow that one wishes to be treated by others in a similar style.

Myth Four :~ '***Most people feel the way that I do***'.

Myth four is exemplified in the situation when a practitioner / parent may display the human tendency to fill in unknown characteristics about others from what he/she knows about himself /herself.

From a personal perspective one might be correct in the way one feels, but the same may not necessarily apply to others; one needs to ***communicate*** one's preferences to others and acknowledge differences.

Myth Five :~ '***There are always many 'Spectators', but it's the 'Expediters' who get the assignments done***'.

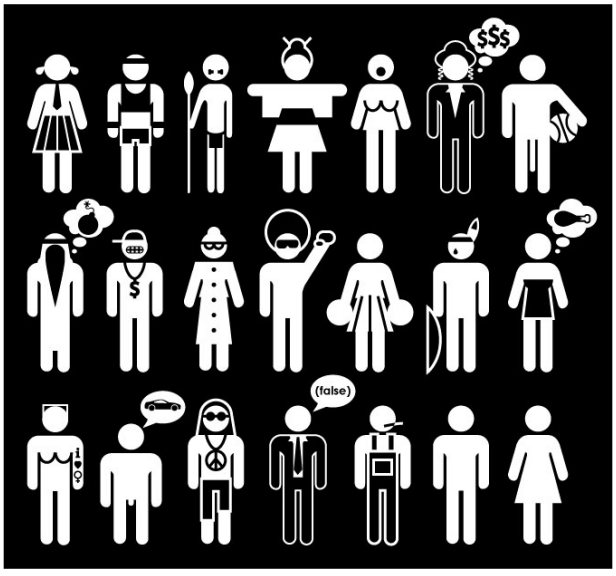
Myth five is exemplified in the situation where an **Expediter/Doer** stands out in a learning environment, often easily recognisable; however, these individuals are not the only productive and contributory learners in the community.

Individuals who act instinctively and individually are usually vital, sure, but they depend more than they realise on other learners, when completing a group assignment engaging in different ways of knowing ~ 'distributed intelligence'. From a personal perspective one needs to realise that all learners are uniquely different and life would far less interesting and complete without this diversity. For instance, one may be task oriented working ***through*** others, whereas another may be people oriented, working ***with*** others in achieving a common goal.

Myth Six :~ '***There is but one behavioural style***'.

Myth six is exemplified in the situation where a practitioner parent has ceased asking for opinions, because students may want to check and debate the issues first.
From a personal perspective one should realise that if no single standard for normal feelings or behaviour exists, a wider range of acceptable possibilities is the correct approach.

The better one understands oneself, the more capable one may be of *understanding* and *relating* to others.
It should be evident that to become aware of oneself one must *first* become aware of others, and through Intrapersonal intelligence one may identify and symbolise a range of one's emotions/feelings to gain a better understanding of one's own behaviour, one's own personality.
Self-awareness includes awareness not merely of the physical self, but also of one's own personality and character reflected psychologically in the reactions of others.
Seeing oneself through the eyes of others and what others think, influences one's own interpretations and form natural inferences that combine to build one's own self-concept.
One tends to carry mental pictures not just of individuals, but of groups and these are called stereotypes or 'people-type' groups.



Some mental images may accurately portray the distinguishing characteristics of a group, others may be exaggerated and still others may be total fabrications.
Getting to know oneself, a corner stone of the three-component concept, is a concept normally reserved for executive team members only, with the purpose to increase corporate ***performance;*** however, for students in a group learning environment, it represents a vital aspect for positive interaction, collaboration, harmony in the achievements of common and individual goals pertaining to learning, knowing and ' being able to do'.
This notion is entirely in keeping with the educational philosophy of Progressivism and a ***learner-centred*** environment.

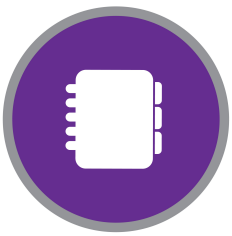
Four Coloured Quadrant Grid

Four Essential Characters

Expeditor / Doer

Persuader/Communicator

Designer/Thinker



Administrator/Organiser

The Coloured Grid featuring Four Essential Characters

The Characters from Different Perspectives

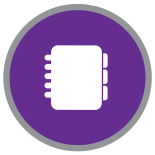
Active/Usual Behaviour (Organisational Style)

This is the **Effective Style** of the individual, his/her life style. In an attempt to categorise the behaviours people display, it should not be impossible for a learner to recognise at least *some* character traits, behaviours in himself/herself and in others. Portrayed and broadly described are four Organisational Styles.

The **Expediter/Doer** tends to organise others by working through people in the attempt to attain goals, is dynamic and prefers direct involvement.

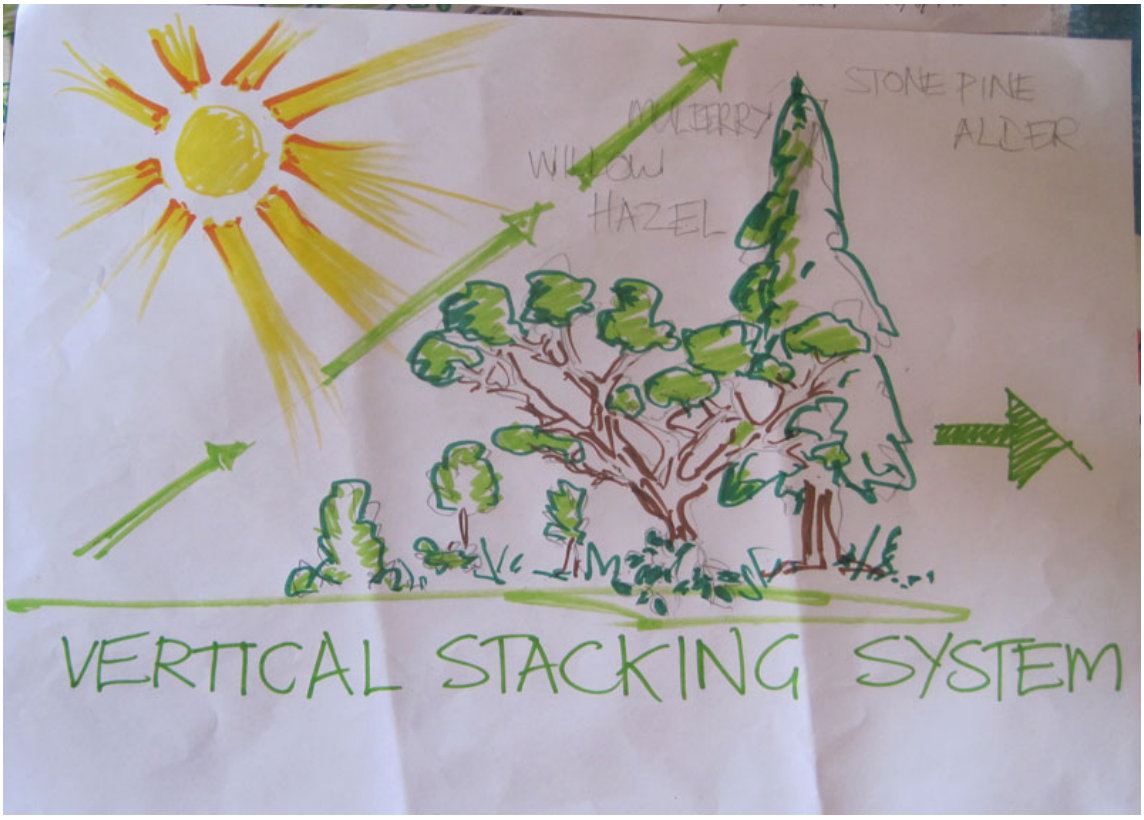
The **Persuader/Communicator** tends to organise others by working with people in the attempt to attain gaols, is dynamic and prefers direct involvement.

The **Designer/Thinker** is a planner and usually prefers a support role in resolving problems, tends to work with others, low-key and indirect involvement.



The **Administrator/Organiser** is methodical and prefers a regulated environment, tends to work through others, is low key and prefers indirect involvement.

The student's Organisational Style grid position is the **foundation** upon which additional layers of more complex revelations about the individual's characteristics will be stacked, not dissimilar to a Permaculture technique of 'stacking' plant, shrub and tree varieties in the humid tropics for productive forest farming ~ a case of using the vertical plane effectively.

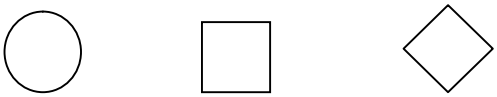


The practitioner should take care to ensure that the learner is ***discouraged*** to think that any one of the four basic profiles featured is 'better' than the other three.
The myths regarding this issue, if understood, should dispel such notion.
The learner must learn to ignore these myths that are prevalent in society, in schools, and in work place cultures.
A high value should be accorded to each one of the four Organisational Styles; to rank the four character categories according to personal preference is to do others an injustice, and is likely to erroneously influence attitudes and behaviours toward the other three.
The practitioner should, therefore, make every endeavour to ensure the learner selects the Organisational Style most like his/her personality.
At this juncture, the four styles featured are broad generalisations only; the four styles should not be construed as being 'set', as every individual is different, complex, and unique.

The stacking of dimensions, not unlike the stacking of plants and trees in a productive forest, combined with the aspect of quadrant-edge-trait-merge tendencies, will make this spherical grid imminently workable, according to Roger Birkman.

In relation to feelings and actions, practitioners should note that feelings of students in adjoining the following quadrants are somewhat similar; (**Expediter/Doer** & **Persuader/Communicator**) ~ (**Administrator**/**Organiser** & **Designer/Thinker**). Regarding actions of students, similarities tend to occur in adjoining side-by-side quadrants.

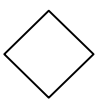
Those that are most 'Opposite', are the quadrants that are diagonally opposite each other. Wherever the quadrants merge there may be a certain amount of merge between either actions or feelings. At the centre of the foundation grid, the Organisational Style grid, where the four quadrants meet, there is normally only a small degree of similarity of the four styles. However, when consideration is given to the variables of students' Interests and Needs, the trait symbols may well be located within the same sphere or they may span to the other two or three. Plotting the graphical behavioural effigy connecting the components, will articulate the student's uniqueness in the positioning of the

component symbols ~ 

Active Behaviour (Organisational Style) 

Interests 

Needs -----

Reactive Behaviour (Stress) 

Before exploring the component imagery concepts and dimensions, as above, it is appropriate to explain the methodology in determining the individual's quadrant as an appropriate likeness. The practitioner should have the learner answer these key questions as part of comprehensive questionnaires.

	Not **like me** **(1 - 25)** **(A)**	**A little** **like me** **(26 - 50)** **(B)**	**Generally** **like me** **(51 - 75)** **(C)**	**Just** **like me** **(76 - 100)** **(D)**
Do I tend to argue when contradicted?				
Do I tend to argue the point when I think I am correct?				
Do I openly give my opinion with groups of people or individuals?				
Do I tend to express my feelings when someone annoys me and tell that person?				
Do I tend to bluff at times to attain what I want?				
Do I tend to put annoying people in their place?				
Do I tend to point out faults to my friends?				
Do I have a tendency to keep others guessing?				

Do I display a tendency to be orderly and systematic in the way that I do things?				
Do I leave things until the last minute to complete my assignments?				
Do I strive to be early for class and hand in my assigned work component to the group?				
Do I tend to work for accuracy or speed?				
Do I tend to finish an assignment I have started even though others in the group may lose patience with me?				
Do I schedule my diary for a week or longer ahead and stick to my regimen set?				
Do I prefer to take care of the details rather than take things as they develop?				

5 or more ticked answers in boxes (***A***) (**B**) (***C***) in relation to *italic* questions - ***production*** centred

5 or more ticked answers in boxes (***A***) (**B**) (***C***) in relation to **bold** questions - ***production*** centred

4 or less ticked answers in boxes (***A***) (**B**) (***C***) in relation to *italic* questions - ***procedure*** centred

5 or more ticked answers in boxes (***A***) (**B**) (***C***) in relation to **bold** questions - ***procedure*** centred

5 or more ticked answers in boxes (***A***) (**B**) (***C***) in relation to *italic* questions - ***people*** centred

4 or less ticked answers in boxes (***A***) (**B**) (***C***) in relation to **bold** questions - ***people*** centred

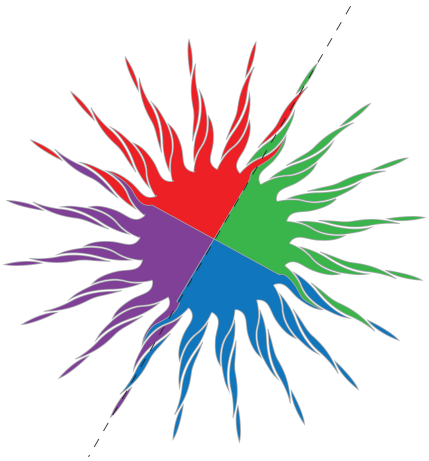
4 or less ticked answers in boxes (*A*) (B) (*C*) in relation to *italic* questions - ***idea*** centred

4 or less ticked answers in boxes (*A*) (B) (*C*) in relation to **bold** questions - ***idea*** centred

Scores of 3 or 4 in relation to *italic* questions and 4 or 5 in relation to **bold** questions indicate that the individual may have traits of more than one type; if the numeric scores are close to a borderline situation, the individual may have some characteristics from the adjoining quadrant also.

Example A) ~ 1 ticked answer box (A) in relation to the *italic* questions, and 6 ticked answers in boxes (B) (C) in relation to the **bold** questions, clearly marks this learner in the quadrant coloured **purple** **(Administrator/Organiser),** the person who prefers a structured environment.

Example B) ~ 5 ticked answers box (B) in relation to the *italic* questions, and 2 ticked in box (C) in relation to the **bold** questions, clearly marks this individual in the quadrant coloured **green** **(Persuader/Communicator)** the person who tends to persuade, motivate others to attain a common goal.



The apparent Effective / Active Behavioural style of the **Expeditor/Doer** :~
Individuals in this category tend to thrive on authority and dominance. They tend to treat others in a direct and assertive manner and will usually be rather intolerant of poor performance from anyone themselves included. This individual is partial to group attention, decisive action, physical activity, challenging tasks, competitive situations and matter-of-fact relationships. This individual is heterogeneously and task oriented.

The apparent Effective / Active Behavioural style of the **Persuader/Communicator**: ~
Individuals in this category tend to manage their style effectively by persuading, motivating others into accomplishing goals. They tend to influence behaviour and attitude in others in the pursuit of important or worthy objectives, tend to extend authoritative support, prefer discussion and debate, personal understanding and need a sense of personal freedom.
This person is heterogeneously and people oriented.

The apparent Effective / Active Behavioural style of the **Designer/Thinker**:~
Individuals in this category tend to be future-oriented, are 'ideas-people' in style. They prefer to explore the implications of tomorrow and tend to wonder because of their curiosity to find viable solutions to problems, tend to be creative, artistic and innovative. This person is domain and people oriented.

The apparent Effective / Active Behavioural style of the **Administrator/Organiser**:~
Individuals in this category tend to prefer a lower profile yet understand procedures and systems others do not. These people are normally comfortable with the status quo and prefer group backing, minimum change, group approval, consistent controls, structured environment, tend to be orderly, like systems and procedures.
This person is domain and task oriented.

A key issue to grouping strategy success, is to put the 'right' learners together from a personality perspective ~ individuals that are opposite will probably make for a combination key, likely to cover all necessary bases:~

- Groups are unlikely to become cohesive unless someone takes the initiative,
- The individual within a group must learn to value diversity,
- There must be freedom within the group to maintain Active / Usual,

  Behaviour consistent with the learner's Organisational Style,
- Usual behaviours should produce synergies if relating to others and the four,

  Organisational Style profile concept is understood,
- Group work should not be equated with 'committee work'.

Relating to others, therefore, is to know oneself and the general four personality profiles as featured. Importantly, the issue of relating to others is not a matter of popularity *per se;* all learners are different and work a task differently. Relating to the other personalities provides the learner with an array of insights to completing tasks in a cooperative and collaborative environment.

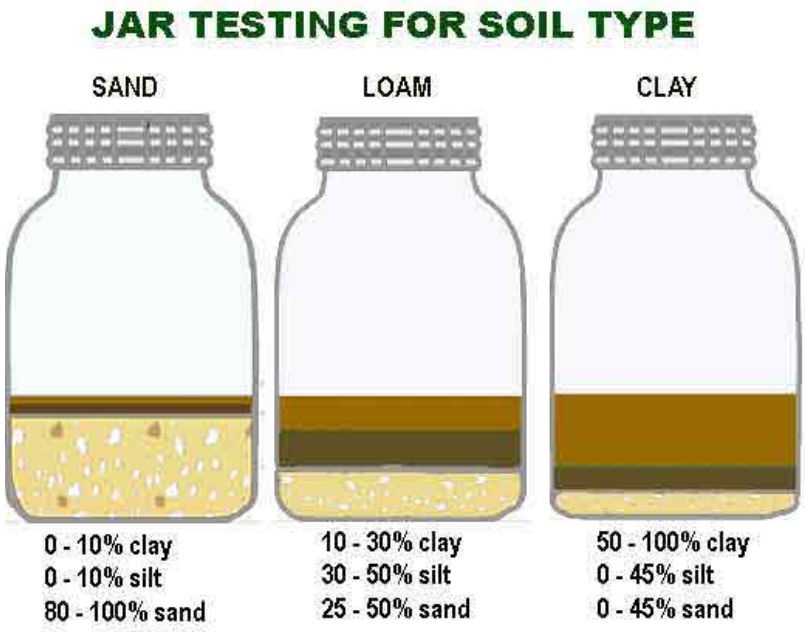
Interests are those activities which provide the learner with the greatest sense of personal fulfilment, the things he/she enjoys most.
Interests may not be necessarily apparent, and while the foregoing refers to what individuals prefer, usually through internal assessments, one needs to see past actions, appearances to inner feelings, before one may begin to trust one's perception of others.
The dimensions of Interest influence the student's uniqueness, an aspect that makes the individual special.
From a young age onwards learners should actively seek an outlet for stronger interests particularly at school or during leisure hours, because interests influence people to a greater extent than is generally realised.
To neglect this important aspect is to invite frustration, burnout, irritability, or worse at a later stage. When a learner's strongest Interests are identified, it is imperative that he / she stay connected with these Interests, as it is not beyond the realms of possibility that strong Interests may develop into proclivities.

Effort must be made to have the learner and family take the initiative to realise this connection, or years may pass without the student knowing the satisfaction of being himself / herself, or realising possible dormant potentials.

To exemplify the assertion and its importance for the learner to stay connected with strong Interests, it is relevant to explore this aspect and the process of rediscovering much later these early strong interests/potentials in a threefold approach for late actualisation of possible untapped abilities.
Early childhood is the period when Howard Gardner's original seven intelligences are generated; he refers to these early signs as 'inclinations', and suggests that they are hard-wired into the individual through genetics and other biological elements.
For instance, children's early language is musical in character and their first spatial representations may be Kinaesthetic; in the area of Logical-Mathematical thinking, Jean Piaget suggests that the child appears to reason entirely on a physical level.
Children appear to have frequent experiences of synaesthesia; seemingly they can hear colours, see sounds, mix the senses and the intelligences together in unique ways.
It is not unusual to see a child moving along dancing, singing, counting and talking, and seemingly relating to all simultaneously.
Emerging patterns of interests and inclinations, once most at promise, should be taken note of by parents and schools / practitioners, because they may provide the footprints to a pathway back in time through memorabilia and school reports to reveal interests, dormant intelligences that have developed through adolescence into unrecognised strengths in adulthood.
An interest and/or an inclination shutdown can occur for various reasons; they may be hidden for psychological reasons due to parental and practitioner inadvertent or conscious behaviours and attitudes.
In a broader sense, culture itself can and does work to short-circuit certain interests and intelligences; Western societies, even today, are strongly artistic and logical-mathematical oriented.
As a consequence, students with promise in other interests and inclinations may be overlooked, or deemed to have potential of little value to culture overall.
Ultimately, competence will flourish or languish due to biological influences such as genes and educational psychology, parent and family environment in a cultural context in terms of favourable or unfavourable historical epoch.

Timing, setting and circumstances also have a significant impact on a learner's innate interests, talents and abilities during the critical periods of development during the post natal sensitive period and the later internalisation period.
Recent research indicates that one continues to develop, notwithstanding the existence of the sensitive and internalisation periods and that the experimental environment is a major factor in maintaining a healthy and active mind.
Israel Scheffler suggests a threefold approach to actualising untapped abilities; first, one has to eliminate those factors that hinder the realisation of an interest/inclination.
Second, one has to be exposed to experiences that discover, re-awaken and elevate the interest / inclination ~ third, one needs to make a personal commitment to develop the interest / inclination.

Renewal in this fashion may be instrumental in getting the learner out of a stagnant or negative pattern of feeling, thought and behaviour, a pathway from depiction to prescription in finding and recognition of one's uniqueness, the genius within.
Israel Scheffler's approach, a personal investigative process, is one not dissimilar to a naturalist interdisciplinary investigation of soil composition ~ Permaculture's *Jar Method*, an accurate method of assessing soil structure for the determination of crop type suitability.



Although the four Organisational Styles represent only broad areas of Interest, there are various separate and distinct Interest variables that will accentuate and colour the learner's personality and traits. **A strong Interest has the status of a NEED.**

Needs /Stress are the most significant and revealing aspects of a learner's personality; they reflect the essential person and when misunderstood, distress can be profound.
A need is a mandate, and the manner in which a need is managed by a learner affects his/her usual effective behaviour.
Reactive behaviours are a result of needs unfulfilled. Needs are inherited, hard-wired into a person while the expression of those needs are learned social behaviours.
The deepest needs are also the most resistant to change and in addressing needs the learner must first understand and accept them, in order to modify behaviours when appropriate.

The learner should try to remove the stigma associated with the term 'needs'; *everyone* has needs, a fundamental truth of life and if ignored the learner will feel stress, frequently triggering reactive behaviours in others also.

To illustrate this occurrence, the learner should identify his/her element featured needs, his/her motivational needs, and mark five statements with which the learner can identify. The learner should then be asked to circle the element of the group type with the most marked items.

Needs tend to cluster under one element; however, if a learner has marked statements under two or more elements, his/her needs are somewhere in between.

The learner should draw on his/her strengths represented by the other elements in meeting his/her motivational needs.

Motivational Needs	Motivational Needs
Expediter/Doer Plenty to do Clear-cut decisions Strong supervision Tangible benefits	**Persuader/Communicator** Discussion and debate Novelty and change Competitive relationships Independent action
Administrator/Organiser Knowing exactly what to do Scheduled activities Feeling part of the group Clearly defined authority	**Designer/Thinker** Freedom from social demands Time for decisions Low-key direction Personal, warm relationships

Recurring Stress	Recurring Stress
Expediter/Doer Unsympathetic Authoritative Dogmatic, Obdurate Impulsive Tense Impatient	**Persuader/Communicator** Defensive Concerned with saving face Argumentative Resistant to rules Easily side-tracked

Administrator/Organiser	Designer/Thinker
Excessively factual	Sensitive to criticism
Over-controlling	Easily hurt
Opinionated	Idealistic
Nervous of the unexpected	Withdrawn
Resistant to change	Hesitant to make changes

There are other influences that can trigger defensive/reactive behaviour in a learner. Sometimes the origin may be a physical illness, fatigue, personal trauma, or a prolonged radical change in life style.

More commonly however, the cause of a learner's reactive behaviour is an actual, or perceived inability to have some motivational need fulfilled, according to Roger Birkman. Even during intense stress, learners' actions usually remain fairly consistent but may not necessarily reveal the way the individual feels.

As with Interests, there are variable dimensions affecting the other three areas of personality ~ Active Behaviour – Needs - Reactive Behaviour.

It is these variable dimensions that reveal attitudes and feelings; dimensions such as ***esteem, acceptance, structure, authority, advantage, activity, empathy, change, thought, freedom and challenge.***

Organisational Style, Needs and Stress Behaviour; Organisational Style or Active Behaviour reflects the way a learner would normally treat others, Needs indicate the way the learner would prefer to be treated, and Stress Behaviour or Reactive Behaviour indicates the way the learner is likely to behave when Needs are not fulfilled.

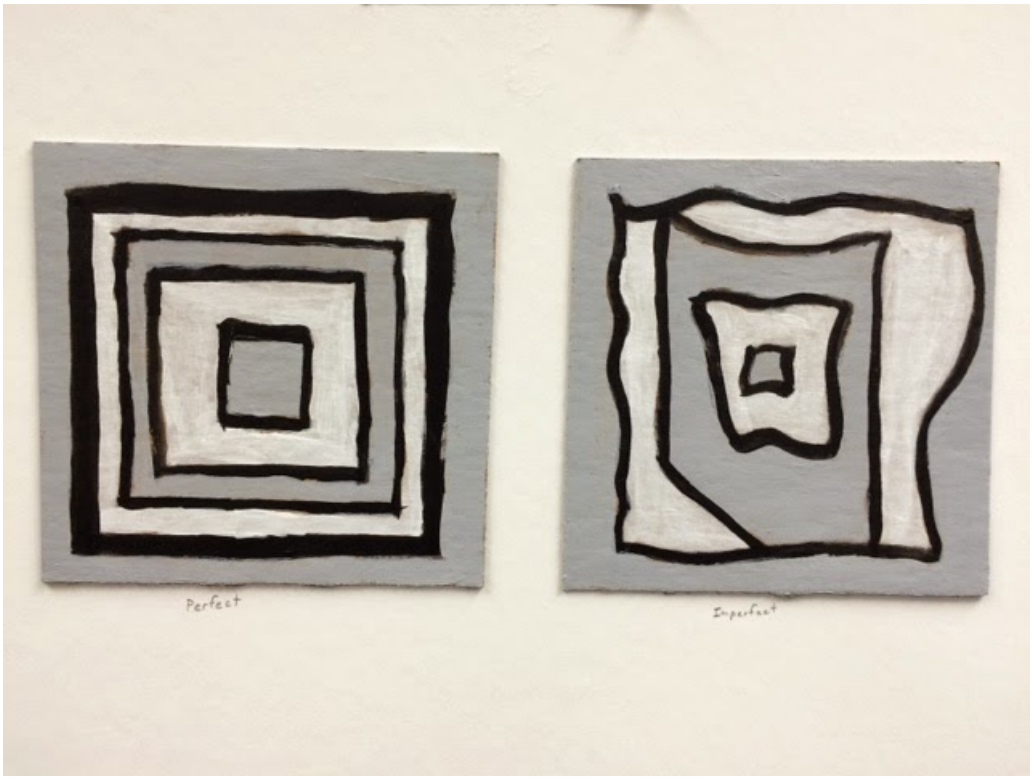
NB.*

Characters are portrayed ***One-next-to-the-Other***, ***One-after-the Other*** in quadrants making a sphere as per the imagery concept.
In the following tables the underlined **bold** print is the character in focus ~ this individual presents as more intense compared the other, in *italic* print, to clearly differentiate the two. This is to accentuate discordant personality interpretations of others under normal and stress conditions.
Characters positioned diagonally opposite each other in the imagery concept are 'Opposites'.

Expediter/Doer / **Persuader/Communicator**

Designer/Thinker / **Administrator/Organiser**

(* *Their Needs and Stress Behaviours tend to be opposite too*)



Esteem - Relating to Others

Expediter/Doer	*Administrator/Organiser*
Active Behaviour This learner generally deals with others on the basis of frankness, openness and directness. This learner tends to feel at ease with instructors and usually does not hide his / her feelings, yet tends to remain objective and unemotional, somewhat detached when dealing with problems and in relationships with others. **Needs** This learner prefers to open and direct with others in the class, in a group or on an individual basis. He / she tends prefers relationships to have a minimum of sentiment. This learner prefers others to tell him / her what they think this learner might want to hear. **Reactive Behaviour** During times of stress, this learner tends to become insensitive and tends to show little concern for the feelings of others. He / she tends to have some difficulty responding to the needs of others as he / she tends to become too factual and abrupt.	***Active Behaviour*** *This learner generally deals with others on the basis of frankness, openness and directness. This learner tends to feel at ease with instructors and usually does not hide his / her feelings, yet tends to remain objective and unemotional, somewhat detached when dealing with problems and in relationships with others.* ***Needs*** *This learner prefers to open and direct with others in the class, in a group or on an individual basis. He / she tends prefers relationships to have a minimum of sentiment. This learner prefers others to tell him / her what they think this learner might want to hear.* ***Reactive Behaviour*** *During times of stress, this learner tends to become insensitive and tends to show little concern for the feelings of others. He / she tends to have some difficulty responding to the needs of others as he / she tends to become too factual and abrupt.*
Designer/Thinker	*Persuader/Communicator*
Active Behaviour This learner tends to be serious and earnest in relationships. He / she has insight into the feelings of others and tends to be respectful and appreciative. This learner seeks the respect of key people at school or in everyday life and tends to value status. **Needs** This learner needs for others to show him / her respect and appreciation; any criticism should be moderated by an understanding of this person's personal qualities. **Reactive Behaviour** During times of stress, this learner tends to feel ill at ease with instructors; they appear to lack emotional toughness. He / she tends to become overly sensitive with a resultant loss of confidence.	**Active Behaviour** *This learner tends to be serious and earnest in relationships. He / she has insight into the feelings of others and tends to be respectful and appreciative. This learner seeks the respect of key people at school or in everyday life and tends to value status.* **Needs** *This learner needs for others to show him / her respect and appreciation; any criticism should be moderated by an understanding of this person's personal qualities.* **Reactive Behaviour** *During times of stress, this learner tends to feel ill at ease with instructors; they appear to lack emotional toughness. He / she tends to become overly sensitive with a resultant loss of confidence.*
Discordant interpretations of *individual* relationships:~ Expediter may see Designer as overly sensitive and somewhat of a dreamer, whereas Designer may see Expediter as a person who tends to blunt insensitive.	

Acceptance - Relating to People

Administrator/Organiser	*Expedite/Doer*
Active Behaviour This learner enjoys teamwork and works well with groups. He /she does not dislike meeting people, is socially adaptive, interacts and mixes well with others. At times, however, this learner can be agreeable merely for the sake of harmony.	**Active Behaviour** *This learner enjoys teamwork and works well with groups. He /she does not dislike meeting people, is socially adaptive, interacts and mixes well with others. At times, however, this learner can be agreeable merely for the sake of harmony.*
Needs This learner needs the support of a group. It is important that he / she feels accepted and that he / she is in control. At times this learner may take strong stands for the feeling that of security it offers.	**Needs** *This learner needs the support of a group. It is important that he/ she feels accepted and that he / she is in control. At times this learner may take strong stands for the feeling that of security it offers.*
Reactive Behaviour During times of stress, this learner tends to tell others what he / she thinks others might want to hear. He / she may be easily swayed by others' pinions. Even though this learner may have many acquaintances, he / she does not easily enter close relationships.	**Reactive Behaviour** *During times of stress, this learner tends to tell others what he / she thinks others might want to hear. He / she may be easily swayed by others' opinions. Even though this learner may have many acquaintances, he / she does not easily enter close relationships.*
Discordant interpretations of *group* relationships:~ Organiser may see Designer as withdrawn and somewhat antisocial, whereas Designer may see Organiser as a person who follows, a person seeking popularity and approval.	

Structure - Systems and Procedure

Administrator/Organiser	Expediter/Doer
Active Behaviour This learner has a concern for detail and has the ability to impose a system upon his / her activities. This learner prefers working to a predetermined plan; he / she likes stability and predictability. The ability to organise and follow through on tasks is an asset as long as the learner does not develop an overly rigid and obdurate insistence on following procedure and precedent. **Needs** This learner needs a structured schedule, plan and classroom environment. he / she needs a list of tasks, the order and timeframe for completion. This learner would like the support of the group and the instructor in whatever task undertaken. **Reactive Behaviour** During times of stress, this learner tends to become anxious about unknowns and tend to become security focused. He / she tends to resist change and may tend to over-control work in progress to maintain the *status quo*.	**Active Behaviour** *This learner has a concern for detail and has the ability to impose a system upon his / her activities. This learner prefers working to a predetermined plan; he / she likes stability and predictability. The ability to organise and follow through on tasks is an asset as long as the learner does not develop an overly rigid and obdurate insistence on following procedure and precedent.* **Needs** *This learner needs a structured schedule, plan and classroom environment. he / she needs a list of tasks, the order and timeframe for completion. This learner would like the support of the group and the instructor in whatever task undertaken.* **Reactive Behaviour** *During times of stress, this learner tends to become anxious about unknowns and tend to become security focused. He / she tends to resist change and may tend to over-control work in progress to maintain the status quo.*
Discordant interpretations of *structured environments* :~ Organiser may see Designer as disorganised and somewhat impractical, whereas Designer may see Organiser as a person who is unimaginative, procedural, a by-the-book type of person.	

Control – Authority Relationships

Persuader/Communicator	*Expediter/Doer*
Active Behaviour This learner tends to be self-assertive. He / she enjoys directing the activities of others and is prepared to debate / discuss a point of contention. This learner tends to take a stand on issues or a point of view. He / she has the capacity to be outspoken, to be to-the-point and usually leaves little doubt for misunderstandings. This learner seeks to excel, influence others, tends to assume a leadership role and is usually quite competitive.	**Active Behaviour** *This learner tends to be self-assertive. He / she enjoys directing the activities of others and is prepared to debate / discuss a point of contention. This learner tends to take a stand on issues or a point of view. He / she has the capacity to be outspoken, to be to-the-point and usually leaves little doubt for misunderstandings. This learner seeks to excel, influence others, tends to assume a leadership role and is usually quite competitive.*
Needs This learner needs to sense a firm sense of instructor stewardship, with well defined programmes and opportunities for forthright discussions in relation to subject matter, assignments, techniques with firm face-to-face supervision.	**Needs** *This learner needs to sense a firm sense of instructor stewardship, with well defined programmes and opportunities for forthright discussions in relation to subject matter, assignments, techniques with firm face-to-face supervision.*
Reactive Behaviour During times of stress, this learner can become domineering with an inclination to demand attention. He / she tends to express opinions too freely and can act provocatively enjoying open disagreement and arguments.	**Reactive Behaviour** *During times of stress, this learner can become domineering with an inclination to demand attention. He / she tends to express opinions too freely and can act provocatively enjoying open disagreement and arguments.*
Discordant interpretations of *authority relationships* :~ Persuader may see Designer as weak and somewhat submissive, whereas Designer may see Persuader as a person who can be pushy, domineering, but cogent.	

Advantage - Group work /Individual

Competition

Expediter/Doer	*Persuader/Communicator*
Active Behaviour This learner tends to be competitive and likes to be recognised for what he / she achieves. Opportunity minded, he / she tends to be resourceful in dealings with others in the group. This learner has a strong drive for task completion and may have a low regard for others who are more idealistic, impractical or unrealistic in the group.	**Active Behaviour** *This learner tends to be competitive and likes to be recognised for what he / she achieves. Opportunity minded, he / she tends to be resourceful in dealings with others in the group. This learner has a strong drive for task completion and may have a low regard for others who are more idealistic, impractical or unrealistic in the group.*
Needs This learner needs concrete, tangible rewards as recognition of his / her individual merit within the group. This individual prefers a competitive class environment and with personal contributions recognised by peers as well as the instructor. He / she tends to seek immediate recognition and praise regarding accomplishment and needs reassurance in relation to advancement.	**Needs** *This learner needs concrete, tangible rewards as recognition of his / her individual merit within the group. This individual prefers a competitive class environment and with personal contributions recognised by peers as well as the instructor. He / she tends to seek immediate recognition and praise regarding accomplishment and needs reassurance in relation to advancement.*
Reactive Behaviour During times of stress, this learner may adjust his / her attitude to serve self interests, placing too much importance on personal advantage. This learner can become somewhat distrustful and opportunistic in these circumstances.	**Reactive Behaviour** *During times of stress, this learner may adjust his / her attitude to serve self interests, placing too much importance on personal advantage. This learner can become somewhat distrustful and opportunistic in these circumstances.*
Discordant interpretations of *personal advantage* **:~ Expediter may see Organiser as impractical and somewhat idealistic, whereas Organiser may see Expediter as a person who can be opportunistic and willing to take advantage of others in pursuit of success.**	

Activity – Action / Reflection oriented

Expediter/Doer	*Persuader/Communicator*
Active Behaviour This learner tends to have a high energy level and it is important for him / her to be active. He / she has the stamina to command a demanding schedule. This learner can manage and probably enjoy a substantial workload.	**Active Behaviour** *This learner tends to have a high energy level and it is important for him / her to be active. He / she has the stamina to command a demanding schedule. This learner can manage and probably enjoy a substantial workload.*
Need This learner needs a variety of tasks that will keep him / her actively engaged. He / she may need restraint in relation to enthusiasm, and needs an outlet for excess, pent up energy. This learner may need to look at outside opportunities to meet this need in sport and / or social outlets.	**Need** *This learner needs a variety of tasks that will keep him / her actively engaged. He / she may need restraint in relation to enthusiasm, and needs an outlet for excess, pent up energy. This learner may need to look at outside opportunities to meet this need in sport and / or social outlets.*
Reactive Behaviour During times of stress, this learner can expend much energy without being commensurately productive due to a lack of planning. He / she tends to become impatient and reluctant to change course. The learner may then become edgy, irritable, become at odds with the group direction, have difficulty in directing individual contribution and having individuals acting to their strengths in achieving group goals	**Reactive Behaviour** *During times of stress, this learner can expend much energy without being commensurately productive due to a lack of planning. He / she tends to become impatient and reluctant to change course. The learner may then become edgy, irritable, become at odds with the group direction, have difficulty in directing individual contribution and having individuals acting to their strengths in achieving group goals.*
Discordant interpretations of *preferred activity levels* :~ Expediter may see Designer as lazy and somewhat ineffective, whereas Designer may see Expediter as a person who is restless and active for the sake of it.	

Empathy – Objectivity and Subjectivity

Expediter/Doer	*Designer/Thinker*
Active Behaviour This learner tends to be detached, factual and objective in relationships. He / she tends not to allow emotions cloud issues, logical and seeks practical outcomes. This learner tends to hold definite opinions, and may occasionally overlook important emotional elements in the relationship with others in the group.	***Active Behaviour*** *This learner tends to be detached, factual and objective in relationships. He / she tends not to allow emotions cloud issues, logical and seeks practical outcomes. This learner tends to hold definite opinions, and may occasionally overlook important emotional elements in the relationship with others in the group.*
Needs This learner prefers to be treated in a matter-of-fact manner and does not need much attention from others in the group. The environment must offer detached supervision and regular straight forward instruction. This learner prefers a logical approach without personal feelings or high emotions.	***Needs*** *This learner prefers to be treated in a matter-of-fact manner and does not need much attention from others in the group. The environment must offer detached supervision and regular straight forward instruction. This learner prefers a logical approach without personal feelings or high emotions.*
Reactive Behaviour During times of stress, this learner tends to impersonal and demanding. He / she tends to minimise problems and tends to look for immediate results. In the process, this learner tends to show little sensitivity toward others in the group.	***Reactive Behaviour*** *During times of stress, this learner tends to impersonal and demanding. He / she tends to minimise problems and tends to look for immediate results. In the process, this learner tends to show little sensitivity toward others in the group.*
Discordant interpretations of *emotional involvement* :~ Expediter may see *Persuader* as emotional and somewhat moody, whereas *Persuader* may see Expediter as a person who is impersonal and unfeeling.	

Change – Managing varied assignments

Persuader/Communicator	*Designer/Thinker*
Active Behaviour This learner enjoys introducing change to the group in the way of new assignments, objectives and variations to routine to test different skill sets. He / she enjoys taking responsibility for a wide assortment of tasks, as this learner thrives on variety and novelty. He / she need be cautious not to introduce change for its own sake. **Needs** This learner needs the opportunity for varied even unconventional work situations and changes in activity. He / she needs new challenges or special assignments to compensate for a tendency to become bored easily by rigid routine. **Reactive Behaviour** During times of stress, this learner will experience trouble concentrating on the important aspects of tasks, tends to become restless with self-discipline lagging. He / she may become excitable and unruly.	**Active Behaviour** *This learner enjoys introducing change to the group in the way of new assignments, objectives and variations to routine to test different skill sets. He / she enjoys taking responsibility for a wide assortment of tasks, as this learner thrives on variety and novelty. He / she need be cautious not to introduce change for its own sake.* **Needs** *This learner needs the opportunity for varied even unconventional work situations and changes in activity. He / she needs new challenges or special assignments to compensate for a tendency to become bored easily by rigid routine.* **Reactive Behaviour** *During times of stress, this learner will experience trouble concentrating on the important aspects of tasks, tends to become restless with self-discipline lagging. He / she may become excitable and unruly.*
Discordant interpretations of *managing change* :~ Persuader may see *Organiser* as unadventurous and somewhat inflexible, whereas *Organiser* may see Persuader as a person who is restless, lacking in self-discipline and wanting change for the sake of it.	

Thought – Making decisions

Expediter/Doer	*Administrator/Organiser*
Active Behaviour This learner can and tends to make decisions rapidly in an objective, matter-of-fact manner. He / she usually is able to grasp and weigh tasks set quickly and form opinions. This learner enjoys the ability of being logical and decisive, but has a tendency to be impetuous. **Needs** This learner needs opportunities to take action, needs definite and decisive supervision. Tasks allocated need to be unambiguous and clearly set out and explained. **Reactive Behaviour** During times of stress, this learner tends to become frustrated and make irrational decisions. He / she can also lose sight of the programme and react impulsively.	**Active Behaviour** *This learner can and tends to make decisions rapidly in an objective, matter-of-fact manner. He / she usually is able to grasp and weigh tasks set quickly and form opinions. This learner enjoys the ability of being logical and decisive, but has a tendency to be impetuous.* **Needs** *This learner needs opportunities to take action, needs definite and decisive supervision. Tasks allocated need to be unambiguous and clearly set out and explained.* **Reactive Behaviour** *During times of stress, this learner tends to become frustrated and make irrational decisions. He / she can also lose sight of the programme and react impulsively.*
Discordant interpretations of *decision-making style* :~ Expediter may see *Designer* as indecisive and somewhat obstructive and delaying, whereas *Designer* may see Expediter as a person who is over simplistic, impetuous and impulsive.	

Freedom – Personal independence /Personal Space

Persuader/Communicator	Designer/Thinker
Active Behaviour This learner tends to feel himself / herself to be different from others in the group; this learner's behaviour tends to be more distinctive and individualistic not necessarily bound by convention. He / she usually does not regard precedent as a limitation in trying a new approach; unusual solutions are sometimes called for to resolve a difficult problem. This learner needs to be careful not to espouse unconventional notions merely because he / she may be different. **Needs** This learner needs opportunities for self- determination and expression. He / she welcomes the chance to set goals and standards. **Reactive Behaviour** During times of stress, this learner may become nonconformist to the point of rebellious. He / she can become too individualistic at times and may in these circumstances misjudge the average person.	**Active Behaviour** *This learner tends to feel himself / herself to be different from others in the group; this learner's behaviour tends to be more distinctive and individualistic not necessarily bound by convention. He / she usually does not regard precedent as a limitation in trying a new approach; unusual solutions are sometimes called for to resolve a difficult problem. This learner needs to be careful not to espouse unconventional notions merely because he / she may be different.* **Needs** *This learner needs opportunities for self- determination and expression. He / she welcomes the chance to set goals and standards.* **Reactive Behaviour** *During times of stress, this learner may become nonconformist to the point of rebellious. He / she can become too individualistic at times and may in these circumstances misjudge the average person.*
Administrator/Organiser	Expediter/Doer
Active Behaviour This learner tends to regard himself / herself very much as others and tries to fit in with others in the group. His / her behaviour is consistent, restrained and conventional in attitude. This learner usually understands the thoughts and attitudes of others in the group and tends to dismiss most unconventional ideas as a waste of time. **Needs** This learner needs order in his / her world. He / she need a predictable environment that offers the reassurance of consistency and predictability. **Reactive Behaviour** During times of stress, this learner can become anxious and nervous and is likely to repress his / her inner feelings. He / she seems inhibited and dreads the unexpected.	**Active Behaviour** *This learner tends to regard himself / herself very much as others and tries to fit in with others in the group. His / her behaviour is consistent, restrained and conventional in attitude. This learner usually understands the thoughts and attitudes of others in the group and tends to dismiss most unconventional ideas as a waste of time.* **Needs** *This learner needs order in his / her world. He / she need a predictable environment that offers the reassurance of consistency and predictability.* **Reactive Behaviour** *During times of stress, this learner can become anxious and nervous and is likely to repress his / her inner feelings. He / she seems inhibited and dreads the unexpected.*

Discordant interpretations *of personal freedom* :~ Persuader may see *Organiser* as dull and conventional, whereas *Organiser* may see Persuader as a person who is unpredictable, intolerant of any constraint on his / her freedom.	

Challenge - Self-image

(all four characters)

The self-image component is a measure of how the learner relates to the demands of school or to any assignment the learner may be involved in. Essentially, it is a measure of self-image and can be used to some extent as a measure of self-confidence also. This dimension infuses all the learner's perceptions and expectations and relates directly to all other variable dimensions and all four characters.

Positive Self-Image

Active Behaviour

Most of this type of student tends to be reasonable in his her expectations of himself / herself. On the whole these students have confidence to varying degrees in their abilities. They normally have some record of their successes and wants to extend it. They tend to chose tasks, if allowed, that are within their capabilities. Sometimes these students have an inability to accept criticism.

Needs

These students need to feel that goals and plans are reasonable, even if they are challenging, as they want to see potential for success. Many of this type of student needs to be involved in the pursuit of interests at school or outside; sport, social and / or service-type of activities.

Reactive Behaviour

During times of stress, many of these students may get carried away with their own enthusiasm and / or blame others or the situation / environment. When faced with opposition, these students tend to lose emotional strength and may follow the path of least resistance, thereby avoiding introspection and self-efficacy.

Discordant interpretations:~

A *Positive* Self-Image student tends to see a self-critical person as too self-critical, demanding and unsure of himself / herself, whereas the *Self-Critical* Image student sees a person who is positive self-image as too self confident, too quick to blame others, the situation or the environment and self-aggrandising.

Self-Critical Image

Active Behaviour

Most of this type of student tends to take some pride in his / her achievements, yet the majority of this type are frequently critical of their performance and at times of others also. They tend to feel responsible for problems they are involved in to a lesser or greater degree. Notwithstanding these students being aware of their shortcomings, he / she tends to accept challenging tasks. Most of these students have a will to a varying extent and tend to be somewhat critical in their analysis of problems / tasks and their performance.

Needs

Most of this type of student needs stretching, interesting and challenging goals. He / she needs to feel that tasks require the most from them, even at the risk of failure. Most of these students want to take on tasks that can be done well, and most appreciate firm and fair supervision.

Reactive Behaviour

During times of stress, most of these students are tough on themselves and tend to take blame unnecessarily. As a consequence, performance may become erratic, which can make them to feel inadequate. Some students can be unconsciously defiant in subtle ways and may even subvert their own efforts due to fear of failure.

Generic Profile Reports

Four Perspectives

Generic Behavioural/Functionality Profile

Organisational Style

Active, Usual Behaviour

Open, Respectable, Accessible, Decisive, Energetic, Indefatigable, Frank, Forthright, Outspoken, Logical, Sensible, Practical.

Competitive, Ambitious, Enterprising, Assertive, Positive, Confident, Flexible, Discretionary, Prudent, Enthusiastic, Passionate about new things, Avid.

Direct Involvement

Task Oriented

Indirect Involvement

People Oriented

Orderly, Methodical, Businesslike, Concentrative, Focused, Preoccupied, Cautious, Judicious, Discriminating, Insistent, Determined, Diligent.

Insightful, Aware, Perceptive, Sociable, Selectively Outgoing, Cheerful, Thoughtful, Reflective, Quietly Optimistic, Positive, Expectant.

Generic Behavioural/Functionality Profile

Interests

Activities Archetypical of the Four Characters Portrayed

Seeing a Finished Assignment,
Solving Practical Problems,
Working Through People,
Managing, Expediting, Doing.

Persuading, Counselling,
Innovative New Approaches,
Building Agreement with People,
Influencing People.

Direct Involvement

Task Oriented

Indirect Involvement

People Oriented

Scheduling, Detailed Work,
Close Association,
Working with Numbers,
Working with Systems.

Designing, Creating,
Dealing with Abstracts,
Thinking of New Approaches,
Working with Ideas.

Generic Behavioural/Functionality Profile

Needs

Support, Motivation Needed to develop Usual Organisational Style

Needs Encouragement, Inspiration,
Stimulus in an Interactive Group.
Needs a Clear-Cut Transparent, Unobstructed Situation.
Needs a Substantial Workload,
A Challenging Task, Clear Pathway.
Needs a Direct, Logical, Rational, Interactive Group.

Needs an Environment where Competition,
Ambition, Challenge is Provided.
Needs Assertiveness, Presence, Influence in an
Interactive Group Environment.
Needs Flexibility and Aligned Interpretation,
Adaption. Needs Novelty and Variety.

Direct Involvement

Task Oriented

Indirect Involvement

People Oriented

Needs an Organised, Coordinated,
Structured Environment.
Needs to be able to Concentrate, Provide
Linkage and Detail to Tasks.
Needs an Environment of Trust,
Delegation and Expectation.
Needs a Consistent, Steadfast and
Uniform Environment.

Needs Individual, Specific Support.
Needs Encouragement to Express Feelings
Emotions and Enthusiasm.
Needs Time for Reflection, and Cogitation.
Needs Time for Difficult, Delicate Decisions.

Generic Behavioural/Functionality Profile

Stress

Stress Behaviour ~ When Needs Remain Unfulfilled

Stress may make Individual Support Difficult to Dispense.
Stress may cause Impatience.
Stress may cause a "Too Busy" Disposition.
Stress may cause the Dismissal of Others' Feelings.

Stress may cause Easy Distraction.
Stress may cause a Distrust of Others.
Stress may induce a Domineering Disposition.
Stress may cause Failure to Follow an Agreed Plan.

Direct Involvement

Task Oriented

Indirect Involvement

People Oriented

Stress may cause Over Insistence on Rules and Regulations.
Stress may cause Resistance to Necessary Change.
Stress may cause Reluctance to Comfort Others.
Stress may cause the Individual to be Taken in.

Stress may cause Social Conventions to be Ignored.
Stress may cause a Listless, Indecisive Disposition.
Stress may Induce a Situation of Inertness.
Stress may cause Depression, Seeing the Worst Possibilities.

Graphical Behaviour/Functionality Profile

The plotting of a graphical representation under the symbol categories of :- **Interests ~ Active Behaviour** (Organisational Style) ~ **Reactive Behaviour** (Stress) may be achieved by assigning numerical results to the above categories. Numerical results relate to answers furnished in questionnaires.

A graphical behavioural representation is necessary in order to rationalise the comparison process of an individual's profile to others, given the variables, the four character categories expressed as four symbols of different colours and in their own quadrant, their dimensions of Interests and their Needs. The objective is to first pin-point the learner's overall position; then **Interests** with its symbol ☐, after which two categories are added and similarly calibrated ~ namely, **Active Behaviour** and **Reactive Behaviour**, thereby completing the exercise. A graphical representation below, as an example, is the author's profile - **Interests** lie within the **(green) Persuader/Communicator** quadrant but not too distant from the **blue Designer/Thinker** quadrant, **Organisational Style** in the **(red) Expeditor/Doer** quadrant, and **Needs / Stress Behaviour** in the **(blue) Designer/Thinker** quadrant, fairly close the **(green) Persuader/Communicator** quadrant.

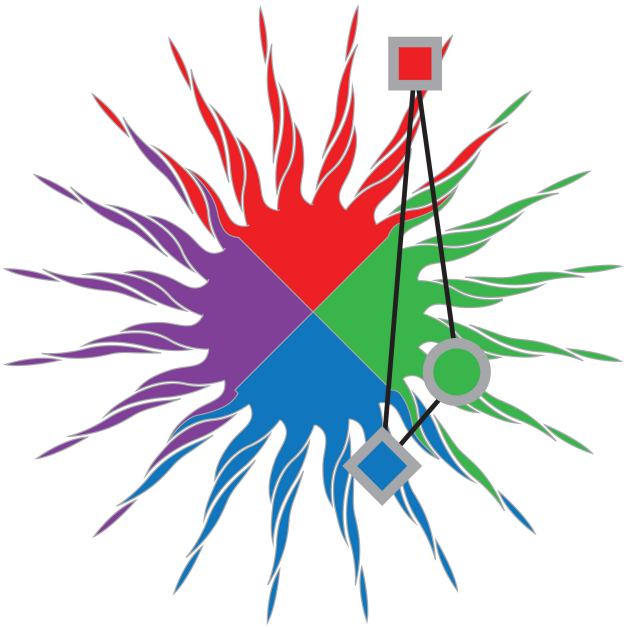
In relation to grouping strategies, insight into the learner's personality and behavioural trends is sometimes advocated in order articulate group learning performance and greater group harmony ~ a necessary condition in Collaborative learning.

Humanising the intelligences

Graphic Behavioural/Functionality Profile

A Graphic Portrayal of Interests, Usual and Reactive Behaviour

The closer a symbol is to the line dividing the quadrants, the greater the probability that interests may be influenced by characteristics on either side of the dividing line. Conversely, Needs, Usual and Stress behaviours may be influenced also. The closer the symbols are to the centre of the grid, the more likely they may be influenced by the characteristics of the other quadrants.



Interests

Persuasive, likes to counsel, act as a mentor, likes innovative new approaches, prefers building agreement with people, likes to influencing people ~ Education / Law as pathway options.

Active Behaviour (Organisational Style)

Open, receptable, accessible, decisive, energetic, indefatigable, frank, outspoken, logical, sensible, practical.

Stress Behaviour

Social conventions may be ignored, may become listless and indecisive, may become somewhat inert, may become subject to depression, seeing the worst of possibilities, may be easily distracted, may become somewhat distrustful of others, may become somewhat overbearing, may fail to follow an agreed plan, course of action.

(The symbol for Needs / Stress Behaviour is within the blue Designer/Thinker quadrant, but fairly close to the green Persuader/Communicator quadrant, hence the characteristics of both ~ *profile of* **Richard Roest**)

The calibration process for the right individual profile and learner group-mix is probably best administered and managed by a designed computer software programme due the number of permutations possible; the process, however, is not dissimilar to Bill Mollison's Permaculture's concept of ***Guilds in Design Methods***.
The methodologies of Polyculture design, for instance, rely equally on guilds, species interaction and cooperation, as they do on configuration; both are necessary inputs to design.
Therefore, in designing for most beneficial species assemblies, one requires to know about and put to good usage, the *relationships* among species, fauna and flora, as well as the *co-actions* of species – no different for humans.
In the natural world one may notice assemblies of plants *and* animals that occur together over their range; closer inspection of such mixed assemblies often reveals a set of mutual benefits that arise from such convivial togetherness, not unlike the tiered grouping strategy in this paper. Mutual benefits may offer assistance or protection to the whole assembly, if arranged correctly.
When designing plant guilds, one should endeavour to maximise the benefits of each species to others, much like the objective of this programme for learners and the learning process.
One can add factors of convenience which may save inputs, as with the grouping strategy, and pairing within a group of six; this approach has the effect of 'down-sizing' the classroom, promotes peer-learning for a self-directed learner oriented learning environment, which is consistent with the twelve psychology principles pertaining to both the learner and the learning process.
A guild is, therefore, a harmonious assembly of species clustered around central elements which can be plants and /or animals.
The assembly acts in relation to the elements and their characteristics to assist health, to aid crop production and management, or to buffer adverse environmental effects.

Productive landscapes

Degraded landscapes

Reasons for placing species in association :~

- To reduce root competition from invasive grasses by planting herbal ground covers,
- To assist in pest control ~ by providing feeding barriers, bitter or unpalatable browse and /or chemical deterrents such as nasturtium ~ by providing killing root-parasites or predators such as *Crotalaria* and *Tagetes* ~ hosting predators such as robber-flies and predatory wasps by planting dill, fennel, carrot and coriander,
- To create open soil surface conditions or providing mulch to allow tree roots to feed at the surface by planting spring bulbs and alliums,
- To provide free nutrients such as woody or herbaceous legumes that fix nitrogen and other essential nutrients via root associations and through the atmosphere,
- To stimulate soil bacteria or fungi to benefit associated trees,
- To provide physical shelter from frost, sunburn or the drying effects of wind in the form of windbreaks, where 'personality' of trees selected is important in order for windbreaks to be effective and to avoid tree-stress.

As with the four Organisational Styles, personality and the four-character grid in relation to Interests and Needs, there are different categories and dimensions in relation to guilds also, such as specific animal associates of a guild:~

- Ground foragers ~ pigs, poultry are used to clear fallen fruit that host the fruit fly,
- Insectivores birds ~ birds that search bark crevices such as woodpeckers and honey-eaters,
- Mollusc control ~ snails, slugs that are controlled by ducks, geese.

These are just small sample of the total guilds and as with learner personalities, guilds are complex. Here too, one needs to assign a numerical / scientific measurement to results in order to rationalise the concept's many variations and permutations in possibilities. It is relevant, therefore, to investigate the analytical approach towards selecting a fitting guild. Most species co-exist in harmony; this is self evident from a study of any complex garden or botanical garden.
Perhaps eighty percent (80%) of all plant species can co-mingle without ill effect.
Some species greatly assist others in one way or another, often unnoticed unfortunately.
Positive benefits arise from placing such species together where they can interact; ten to fifteen percent (10%-15%) of all species.
This category is important to the selection of pairing within the group of six approach.
A minority of species show antagonistic behaviour towards one or more other species.
This in itself can be a benefit as in the case of biological pest control, or a nuisance as in the case of rampancy or persistent weeds and pests.
Perhaps as few as five percent (5%) of all species act in this fashion.

To render the aforementioned levels of interaction a more manageable analytic structure, one can allot symbols as follows:~

(+) ~ this symbol may be used to indicate a beneficial result of interaction with a yield above that of some base level, judged from a monoculture or controlled crop of species.

(0) ~ this symbol may be used to indicate a no-change result of interaction on the same basis as above.

(-) ~ this symbol may be used to indicate a reduction in yield result or vigour, as a result of interaction with another species.

Thus, for two useful species, each selected for a useful product, one may refer to the tabulation below which features all possible transactions.

	Species A	**Species A**	**Species A**	**Species A**
Species B		**+**	**O**	**-**
Species B	**+**	**+ +**	**+ O**	**+ -**

Species B	**O**	**O +**	**O O**	**O -**
Species B	**-**	**- +**	**- O**	**- -**

In common usage, *co-action* implies a force at work, one that restrains, impedes, impels, or coerces another object. *Interaction* implies reciprocal action, two things acting on each other; this is an important distinction, as it is in the classroom.
Another category is *inaction*, or an absence of any detectable action.
At this point one cannot guess which state applies, but when one puts two species together there are these possibilities:~

- One acts on the other ~ ***co-action*** or unilateral action,
- Both act on each other ~ ***interaction*** or mutual action,
- Neither act ~ **inaction** or **neutrality**.

It seems probable that in the case of (+ +) and (- -) one may observe interaction or mutual action, (+ O) (O +) and (+ -) (- +) one element only needs to be acting, a form of co-acting.
In the case of (O O) neither acts, no effects appear, and both are inactive insofar as one's measuring can detect. One needs to observe and analyse each case as it seems probable that such states of action apply in Nature, as they do in the classroom when grouping strategies are employed.

Mutual action states ~ (+ +) *symbiosis* *, is common both in nature, at school and in society. It is a mutually beneficial situation, ideally suited to guild development. An example in Nature, is the mycorrhizal associates of higher plants where mutualism or a fair trade occurs between a plant and its root associate.

* It is this state that should be adopted and promoted in the class room for optimum learning results and for all learners.
The grouping strategy to be deployed is one that incorporates the power of diversity as well as contrast, the occurrence of opposites such as **'Yin – Yang'**, the fertile and the barren side of a waterway.

(- -) In 1970 Haskell coined the term *synnecrosis,* and this state **is** not an uncommon occurrence.

War is probably an apt example of a mutual loss situation; similarly, in the natural world also there are 'battles' between plants and light, space and nutrients, as well as chemical antagonism between plants and animals.

In the classroom it is a matter of perceptions and assumptions by the individual manifested in the way of a personality clash, not infrequently due to discordant conclusions in relation to others.
All four elements are needed and are connected; learners need to understand and develop a Respectful mind as part of the learning process, because without same, the individual will not be worthy of respect by others; this factor will hinder the learning environment and a state of synnecrosis may eventuate.

(+ 0) ~ this state is referred to as *commensalism;* although the actor benefits, the other remains unaffected. An epiphyte attached to a sturdy tree, such as vanilla on the trunk of a coconut tree.

(O +) ~ this state is referred to as *allotropy;* the actor is unaffected, but the other party benefits. An example of this state is a charity where surplus goods are passed on to a cause, to people less fortunate.

(+ -) ~ this state is referred to as *parasitism;* the actor benefits, the other suffers if the actor is a parasite. All pathogens and parasites tend to weaken, or take from the host.

(- +) ~ this state is referred to as *self-sacrifice;* the actor loses and is the reverse of parasitism ~ a form of self deprivation to help others, Mother Mary H. MacKillop of Fitzroy, Melbourne, Australia is an apt example of this state in action.

(0 0) ~ this state is referred to as *neither-one-acts;* where no one species is host and no one gains. Neutrality pacts may achieve this result in society and in a learning environment.

There are critical areas in our natural world such as water holes, salt lakes, grooming stations where antagonistic species agree on neutrality. In fact, many plant species appear to be basically neutral in behaviour. In a learning environment such pact may be a useful ploy for practitioners to bear in mind, especially in the case of a personality clash of individuals at a critical time when all four elements are needed to complete a task. Analyses as above, suit two-species interacting not unlike the pairing learners within a group of six approach. One departs from Nature in a designed system where one values only one of the species, in the sense of obtaining a specific yield for instance. There may be consequences in adopting this approach, not infrequently the case in modern-day scientific farming methods. Nature has its own 'rules' and for mankind to manipulate this balance is to potentially create imbalance and confusion – great care and thought need be applied to this kind of aberration.

(E.g. species **A** ~ a productive palm, and species **B** ~ a weed such as Lantana which is normally eradicated, with the thought of *matrix-plan*, the idea might be entertained to produce a specific yield.)

	Palm	**Palm**	**Palm**	**Palm**
Lantana		+	O	-
Lantana	+ 1	+ 1 +	+ 1 O	+ 1 -
Lantana	O 1	O 1 +	O 1 O	O 1 -
Lantana	- 1	- 1 +	- 1 O	- 1 -

In order of benefit (increase in Palms, less increase or decrease in Lantana)

(1 +) > (O 1 +) > (- 1 O) > (+ 1 +) > (O 1 O) > (- 1 -) > (1 -) > (O 1 -) > (+ 1 O)

Best Result **Neutral** **Worst Result**

This is a necessary type of analysis for selecting useful plants that may weaken an unwanted species. Lantana makes for an excellent mulch and soil nutrient, but is a hardy and invasive weed. Due care must be taken to contain this species as it tends to root deep to become well established; through moat-techniques one may protect the palm as well as contain the weed yet attain the special yield through the nourishing materials supplied by the Lantana plant. This arrangement may also have an application in a learning environment; in the circumstances where one or two personalities are overbearing in traits, an exchange or adjustment would need to be made where a neutrality pact has failed; the practitioner may have difficulty in managing learners unless a weakening element is introduced to create a balance. This approach is consistent with peer-learning and a Collaborative approach.

The measurement of co-action is not difficult in the field, providing there are enough examples to effect a score; similarly at school and / or university; evaluations into human behaviours and potentials should be commenced as soon as practicable but no later than in year ten secondary school and first year university ~ moreover, *the programme should continue to include training programmes and practice in the workplace.* At some stage here should be practical workshops as to how the four elements may be applied in the workplace for greater output – a team setting with a focus on performance and further employability skills development.

An example of co-action measurement ~ an apple tree and other plants:~

(+) ~ apple tree healthy, bearing well and not stunted,

(O) ~ apple tree healthy, in fair order and bearing,

(-) ~ apple tree bearing poorly, sick and dying,

(x) ~ apple tree not in the yard.

	Apple Score	**Apple Score**	**Apple Score**	**Apple Score**
Other trees near, or in the yard.	**+**	**O**	**-**	**X**
Mulberry			**7**	**15**
Mulberry	**5**	**5**	**1**	**3**
Acacia	**7**	**5**		**3**

Scoring can be of specific pairings :~

	Apple Score	Apple Score	Apple Score	Apple Score	Apple Score
		+	O	-	X
Walnut Score	+				5
Walnut Score	O			5	4
Walnut Score	-				
Walnut Score	X				

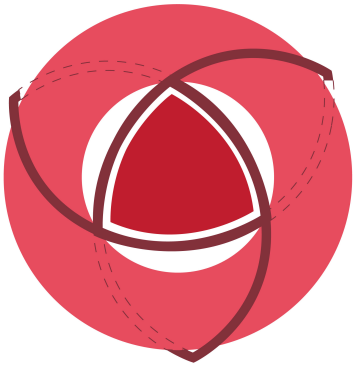
The concept provides a cognitive and normative framework for the recording and processing of observations and developments in a learning environment, thus enabling practitioner *and* student understanding *of what actually takes place in their teaching / learning environment*. It might be helpful for the reader to first visualise such framework as a mental picture ~ a 'mind-map'.

The grid below shows teaching for the three Essential Learning Styles ~ the Learning Style Dimensions further define, articulate, the individual learners in relation how he/she - is knowing. It is why classroom dynamics through an effective grouping strategy in dialectic unity is so important – the 'missing half'.[5]

A framework to teach for Essential Learning Styles

Visual	Auditory	Kinaesthetic
Pictures	Discussion	'Hands-on' work
Charts	Reading aloud	Touch
Maps	Verbal instruction	Craft
Graphs	Dictation	Art
Colour	Storytelling	Creating
DVD	Info-gap-tasks	Deconstructing
Flashcards	Pair / group work	Planning

[5] **Dialectic Thinking … Richard Roest.**



Essential Learning Styles, Visual / Audio / Kinaesthetic intelligence, although relatively autonomous are perceived as appended, as one blended potential ~ Essential learning Styles are depicted by the DNA-like figure in the Robinson Congruence at the core of the design.
All individuals possess a unique blend of the Essential Learning Styles; they are intrinsic to the human being, normally with one or two styles more dominant, unless an individual is sight, hearing or physically impaired when the remaining styles tend to compensate for the handicap. As Essential Learning Styles, it is important that all three be developed to potential ~ particularly the eye and ear, vision and sound, are foundation elements in the development of personal performance potential.

As it is ***cognition*** that holds a **critical** position in the individual's capability to *construct* reality, encode information, and perform behaviours, it is fitting to schedule Learning Style Dimensions in context. Cognition *guides* behaviour, whereas interests and needs *influence* behaviour. Personality traits refer to the *content* of behaviour, and Learning Style Dimensions *articulate* the individual's ways of knowing.

The *Collaborative* and *Independent* learners as a pair within a group of six, are the ones likely to produce a 'kick-start' homeopathic effect in the creation of a more communicative classroom environment **~ the Social Dimension.**

Of the two, the Collaborative learner may assist the practitioner to help achieve 'learner-speak', with the Independent learner acting as the anchor and/or rudder providing balance and learner-speak-direction. The Collaborative learner has the capacity to discern and respond to the moods, temperaments, motivations and desires of the group thus can provide a useful role in facilitating shift-need. The anchor / rudder, the Independent learner, can provide balance and direction, because this individual has the ability to access his/her emotional life and the ability to discriminate among emotions with knowledge of self ~ strengths and weaknesses.

The Logical-Mathematical dimension, **the Abstract Dimension**.
This dimension refers to the invention of patterns or relationships through interactions with others. *Deductive* and *Inductive* learners,  can deduce applications, the latter considering all the details, facts and logical steps before arriving at the governing principles by inference.

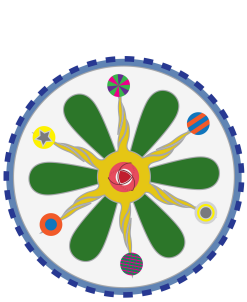
The third dimension is **the Psychological-Physical Dimension**.
The dimension incorporates learning to include processing of perceptual stimuli, spanning the three Essential Learning Styles ~ Visual, Auditory and Kinaesthetic. *The Left-brain* dominated learner who is a 'sequential' individual, and *the Right-brain* dominated learner who is a 'random' individual. 

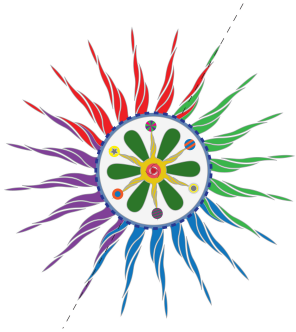
In summary, at the centre there is the Essential Learning Styles' grid, as above; it in turn, is further defined by the three Learning Style Dimensions in terms of how the individual perceives the world around him / her. Learners profiled and are arranged in a 'Polar-Unity-of-Opposites' configuration to facilitate permeations, thus to comply with the first and main principle proposition of dialectics, which considers mutual relations of dependency, not in their fixity, but in their **development**.

The individual, however, is more than intellect alone; the design concept therefore also features a four-character image depicting an individual Behavioural /Functionality profile and dimensions in dialectic unity, as well as a Behavioural Determinant schema in the form of a Personality Traits for articulation when required, which completes the concept design.

It is now possible to record observations in a grid format and better understand the individual, the nature of and reason for learner interactions, development, and learning refinement ~ *the learning process.*

Permeation of Opposites **~** ***Negation of Negation*** **~** ***Transformation*****.**



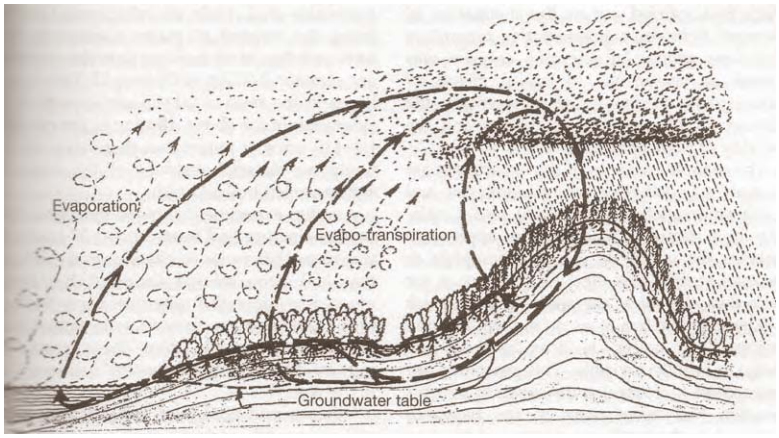


Post Script

The process and intended effect of this programme on a learning environment is probably best explained by applying Naturalist intelligence, observing a phenomenon in Nature that may elucidate the concept in action. The process and intention of learner profiling and grouping strategy is to achieve student homeopathic interaction, not unlike *learner interaction in engaged affordances, negations, leading to transformation* ~ an effect not dissimilar to that of trees regulating water distribution in the atmosphere.

The broad-leafed forests around the equator produce this phenomenon; however, with the systematic destruction / eradication of same, trade winds are affected to the extent that world weather patterns are ever becoming more unstable. This is evidenced by greater and expanding semi-arid land belts north and south of the equator, with a disturbing trend ~ the 'elasticity' aspect of these areas to expand and contract is no longer apparent. Time has always seen expanding and contracting semi-arid areas around the equator, but today semi-arid / arid areas are expanding at a rate where now approximately 2/5th of the world's landmass is so affected. Energies in the transpired water from trees differ in quality from those in water evaporated from the oceans. When water rises from trees, it rises from a living entity rather than from a body of water such as the ocean. That is not to say that the oceans are dead; however, almost all of what the oceans produce, materially and energetic derivatives such as CO2, O2 etc. have already been consumed by living creatures in the oceans, whereas this is not the case with the transpiration content of trees. One may be concerned with an energy form derived from a more refined living system which carries within it the imprint of characteristic traits such as higher vibratory matrices of mineral and trace-element compounds. Tree transpiration has a homeopathic effect on water vapour distribution in the atmosphere ~ it regulates an even distribution of water vapour. *The finer/purer the dilution of a substance, the greater its potency as a healing medium.*

This analogy, inspired by the phenomenon called 'The Hydrological Cycle', represents an apt and fitting correlation in relation to the intended effect and process of this concept on a learning environment where only 'half' is present, it seems.



Viktor Schauberger's Half Hydrological Cycle