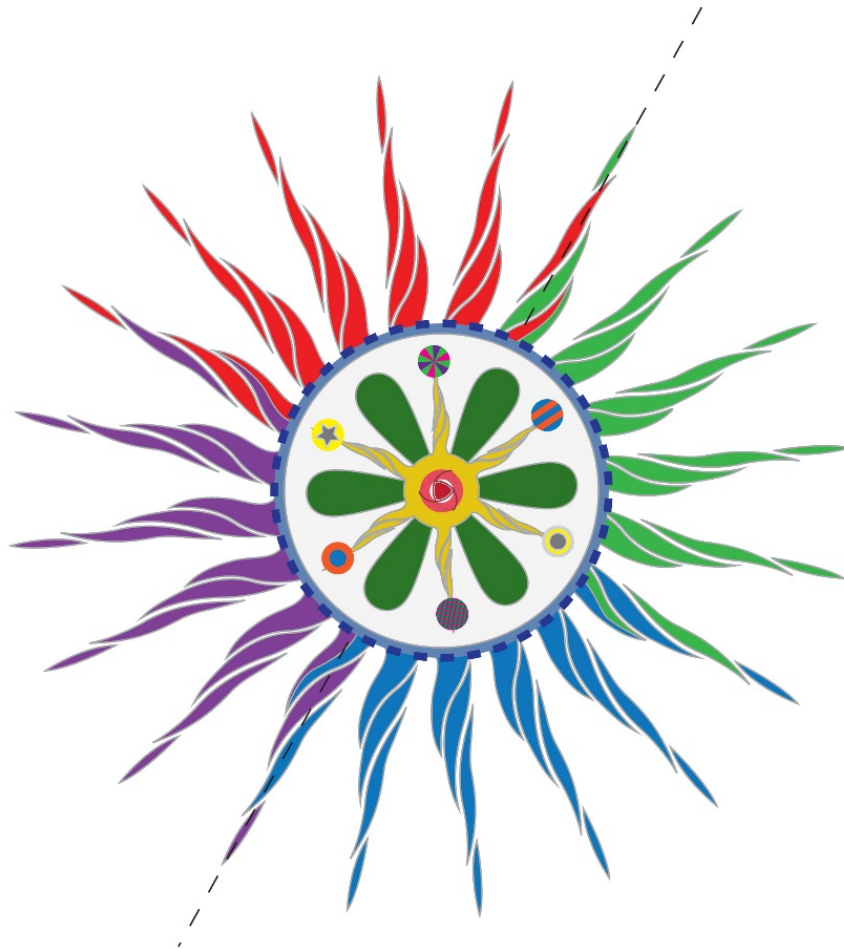


The Cultivation of a Learner Mental Constitution

In an electronic age with immense bodies of information available to anyone with a computer and access to the internet, mnemonic learner capacity is today largely redundant, whereas the organization in useful, creative ways is now requisite.

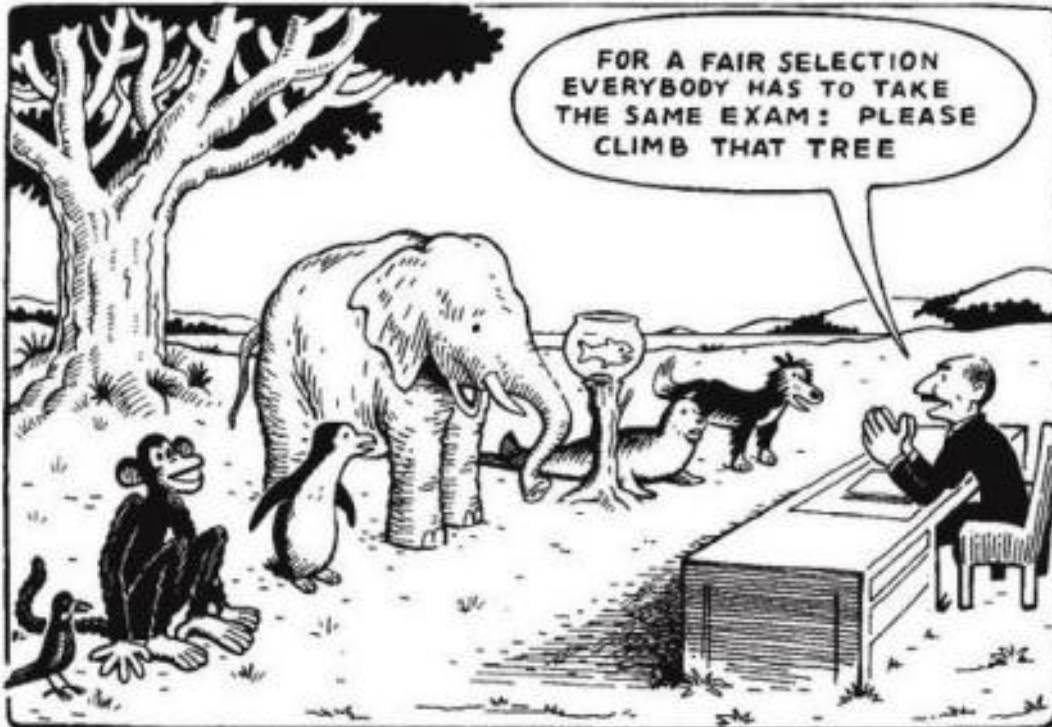
The cultivation of idiosyncratic ways of thinking in the application of knowledge-use, is an essential asset. Learners need to understand the various ways in which knowledge, 'knowing', is developed and propagated or they will be reliant on others when formulation views when making decisions about options.



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

Worldwide integration – globalisation – and the 'Factory Model of Education'

(1) Their combined effect on today's youth is, in pace and relevance, exponentially lagging behind an ever-increasing global interconnection of societies, technologies and economies. However, it seems that apart from lagging behind, there is no general agreement in education **what** to teach youth, never mind the important issue of **how**. Notwithstanding this perplexity, education systems are showing a disturbing and growing **disconnect** between learning environments and reality on the outside.



The effects of globalisation are manifested everywhere, namely in obvious growing prosperity as economic, consumer-oriented phenomena and technological advancements. That said, education still remains a cornerstone development factor in most countries, particularly in developing countries. Broadly, there are two options in education : - private education or public education. The former remains beyond the financial capacity of most, whereas the latter generally present as an overtasked system. The public system, while making every endeavor to best educate youth aged between 5 and 18, tends to be subject-matter and rote learning oriented, under resourced with practitioners overworked, demoralised and not adequately remunerated. A consequence is a burgeoning shadow education system that seeks to 'augment' a flailing system in relation to unfulfilled learner needs, as well as providing practitioners with an opportunity to supplement income levels. Traditional factors such as professional standing and respect no longer hold the same appeal with many practitioners as they once did.

Today, many practitioners feel abandoned and ignored by the education authority they feel has become a bureaucracy, tending to be autocratic, inflexible, austere and, more often than not, out of touch.

On the one hand, practitioners tend to see schools as negative environments in which to work; they seem to experience increasingly poorly behaved, demotivated youth in relation to learning, tend to face un-supporting parents in a system that does not allow practitioners to do their best work because of obligatory administrative compliance issues taking valuable time away from attending to professional tasks.

On the other hand, practitioners *themselves* are seen as being negative about teaching by many. This is due to the foregoing, as well as heavy workloads invariably completed outside working hours in a system that is primarily concerned with measuring performance for school ranking purposes.



Unfortunately, both private and public education systems still largely rely on mnemonics and prescribed learning methodologies - mnemonics, a system of 'habit learning' methods which tend to follow formulaic solutions.

It should be realised that today such cultivation of learner minds is unlikely to have youth thrive in open dynamic and in ever more competitive, interconnected economies.

Whilst the past should inform the future to some degree, the current situation presents a case where the past, in curriculum, is crowding out preparation for the future.

Traditional instruction practices, usually teacher-centred, do not provide learners with affordances to allow for negations, the very type of pedagogical encounters that capture the full fidelity of what might happen in real life. It is these very experiences that are thought to contribute toward enhanced preparation for a learner's active, responsible role in society and in the workplace.

Yet, education policy makers continue to believe that preparing youth for an active, useful and satisfying role in society is possible administering a policy of subject-matter oriented curriculum by way of conveyor-belt learning in a world that is ever more complex and interconnected.

Today, no one anywhere can remain stationary; to do so means to fall behind, to in effect become marginalized - 'invisible'. Interconnectedness, technological advances and increased mobility demand that people be globally literate, numerate and sensitive to foreign cultures, identity and sovereignty, that people be conversant in different languages, be innovative, flexible, and be creative through synthesis at problem solving. (2) Therefore, beyond standard curriculum education is called for; education authorities should address problems of the present and challenges of the future with a focus on processes rather than outcomes alone.

The complexity of problems facing youth requires a level of problem-solving skills never before imagined. Reform is necessary - reform toward a learner-centred environment, incorporating the twelve psychological principles pertaining to the learner and the learning process. Reform pertaining to the provision of learning experiences that challenge perspectives, challenge processes, probe to gain a deeper understanding of issues subject to change through a process of 'Performances of Understanding'.

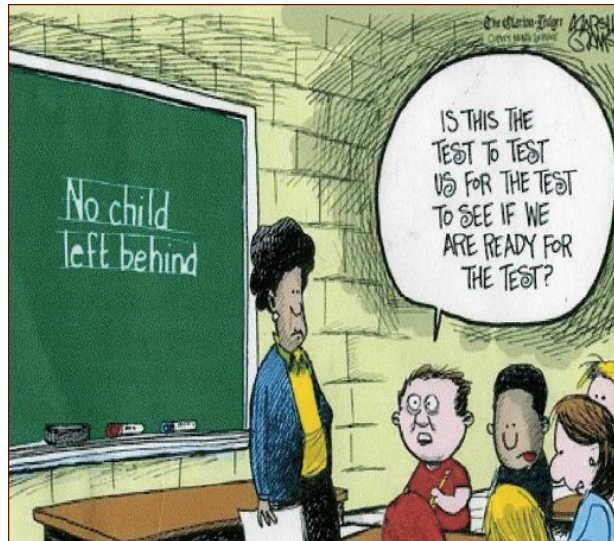
Learners should be introduced to distinctive ways of thinking with a dialectic perspective, modes that characterise the major disciplines and professions. These are likely to reveal the difference between knowing subject matter as data and that which marks the learner as knowing through a disciplined mind. Knowing through a disciplined mind will allow learners to make decisions and choices based on values, on who and what they are, not necessarily on trade-offs only.

It is clear that problems faced by youth are not adequately addressed and, as a consequence, learners continue to adhere to erroneous ways of thinking, despite best motivational endeavours to ready learners for productive roles in society.

Minds of learners should be fashioned in ways for the proper development of a Learner Mental Constitution, comprising of five mental dispositions - **Disciplined, Synthesising, Creative, Respectful** and **Ethical** Minds for learners to remain current and to progress. (3) For example, learners are only examined on problems to which they have been exposed in the classroom and in textbooks.

They learn the book only and at best can only repeat rather than explain, because 'learning

the book' constitutes rote-learning - therefore, **true** comprehension cannot be readily ascertained.



Ultimate uses of such purveyed knowledge, it must be realised, are usually not evident because :-

- A) Learners are not stretched to test their knowledge given new scenarios,
- B) Learners are not able to prioritise, combine and organise knowledge-use in their minds.

Practitioners need to become enablers of knowledge. Schools too, need to shift beyond being mere instruments of subject-knowledge transmission centres to being centres of innovation, creativity and ingenuity by creating learning experiences that move past prescribed methodologies and 'correct-answer' standardized testing, so typical of traditional methods.

The cultivation of idiosyncratic ways of thinking in the application of knowledge-use is a vital aspect in preparation for professional training, whether at graduate school, apprenticeship or vocational training. Vital, because professional training constitutes a different accent in education, an accent that more resembles the world of practice, when the learner comes to understand the various ways in which knowledge is developed and propagated. It is this stage that constitutes the disciplinary curriculum for success in later life.

Foremost, youth need to understand the world they live in, and the world they are likely to inherit.

From mathematics to economics, from physics to art, real world issues should become part of curriculum. **Questioning** and **thinking** about **how, what, why** must become part of raw material for authentic experimental and exploratory learning - youth NEED cultivation of a Mental Constitution - five mental dispositions for the future.

Worldwide integration - globalisation - is both a theory and process

- It can be seen as a compression of the contemporary world and the intensification of consciousness of the world as a singular entity with a singular orientation, manifested by exponential compressed interaction and integration of politics, business, cultures, identities and intellectual elements worldwide.



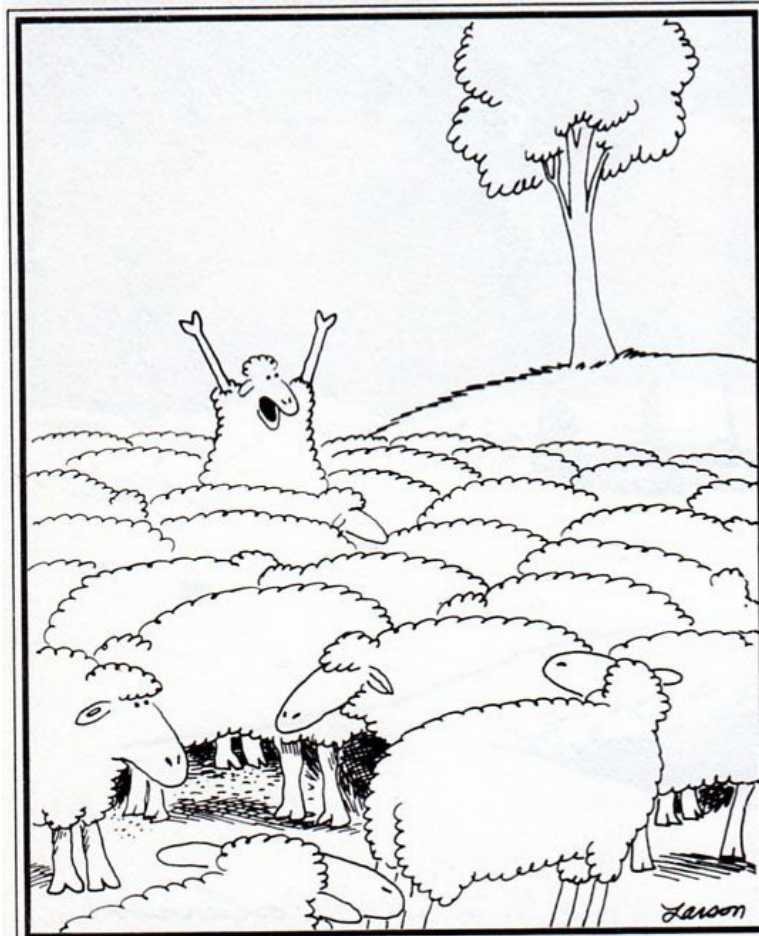
Compression makes the world a single place by virtue of the power of a set of globally diffused ideas that render the uniqueness of societal, ethnic identities and traditions irrelevant, except within local, regional contexts.

Worldwide integration refers to the multiplicity of linkages and interconnections that transcend nation-states, and by implication their societies, which make up the modern world system.



It defines a process through which events, decisions and activities in one part of the world can come to have significant consequences for individuals and communities in other parts of the world. (4)

It is fueled by technology, information, communication, finance and although a full spectrum of views exist as to positives and negatives of globalisation, some observers still believe that harnessing the positives lies in the cultivation of **knowledge through education**. (5)

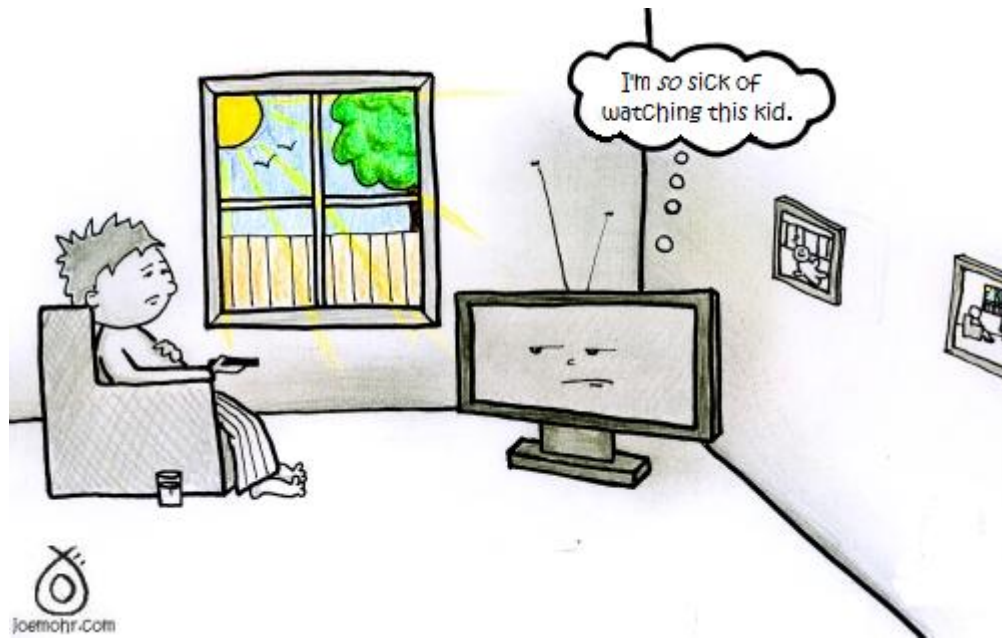


"Wait! Wait! Listen to me! . . . We don't HAVE to be just sheep!"

Worldwide integration – globalisation – has caused shifts in society

Education must find new and quicker ways to come to grips with society lifestyle changes due to worldwide interconnectedness and competition, affecting traditional cultures, identity, gender, generation-gaps and values. Societies everywhere have gone through radical shifts in everything from family structure and ideals, to where and how families and individual family members spend the majority of their time, resources, energy, quality of life, and traditions. (6) Education systems are not in pace with these shifts, and are not coping with changes in society, labour markets, and industry requirements.

Of concern is a significant increase in stress and rising depression among adolescents and young adults, (7) pointing to larger issues at play – difficulty in constructing a future, pressure to succeed, less physically active, coping with stressed out families, increased violence, flat labour markets for those starting out, no or inadequate school tutorial programmes and the phenomenon of 'Nature-deficit-Disorder' – a diminishing bond between learners and the natural world. (8)



Continued reliance on prescriptive structured activities without a focus on learning outcomes and disproportionate learner-time spent using technology, electronic gadgetry, are all constraints to community social capital building. (9) It is clear that teaching methods are partly responsible and need reviewing certainly, but schools jointly with parents and the community need become more involved in arresting this worrisome trend. The situation is further exacerbated now that there are more people living in urban concentrations and are less connected. (10) Today, loneliness is not uncommon among youth... This scenario has direct implications for schools and communities, particularly in larger cities - a decline in educational social activities with the result that specific benefits that flow from trust, reciprocity and cooperation associated with face to face or group social networks are diminished.

Modern urban living often involves youth spending more time indoors using technology, with parents spending more time shuttling their children from one structured activity to another, youth spending hours on end on study and by themselves, without direction and purpose.

These factors add up to a significant decline in 'free play' which tends to translate into stress, dissatisfaction and disharmonious behaviours. (11)

The pursuit of interests is largely eliminated in pressure for youth to achieve 'success' academically, so hindering opportunities for stimulating and developing important human attributes such as creativity, communication, inventiveness, curiosity and imagination, the very attributes that may help the individual thrive in the world of tomorrow.

For education to be effective, one must be concerned with the health and vitality of the community, and active community participation by policy makers in schools as an integral part of the educational programme. (12) A Canadian study revealed that 41% of respondents said it was hard to find time and energy for parenting, (13) and when youth were asked what they would like most from parents and family, the answer was decidedly time and interest. Whether this phenomenon of little time and interest is driven by social pressure and an expectation to maintain lifestyle, and/or due to the imperative to cater for household needs is not clear. The pace for most families, however, is not slowing. The world seemingly is in a grip of a development dilemma; it is moving ever faster with much energy spent on productivity, consumption and wealth acquisition, yet people do not want to give up on ideals, culture and traditions either. Perhaps the cultivation in schools of a Learner Mental Constitution might provide greater insight into resolving such dilemma in the youth of today.

The mental dispositions of the Respectful and Ethical Minds, representing distinctly human attributes, that more likely than anything else, can preserve societal harmony, balance of culture, and traditions given the vicissitudes and extremities of life today.



Worldwide integration has caused worldwide changing economies

Schools must recognise that the future belongs to a very different person with a different mode of thinking - innovators, creators, communicators, pattern reorganisers and 'meaning-makers', according to author Daniel Pink. (14)

Today, preparing youth for society and the workforce is far different than it used to be; society has undergone change from a factory-based economy to what some call the 'concept age'. This new economic reality requires a different approach to work, productivity and consequently requires a different approach to learning and training.

The Factory Model of education features rote instruction, learner passivity and structured classrooms with a focus on numeracy and literacy. This model fits training people for standardized production in a factory or repetitive administrative tasks. Today's workplace requires much more; more creativity, more people skills, more initiative and the ability to synthesise across fields. If youth are to function well in an open and dynamic economy, then it is imperative to expose them to open and dynamic environments. For youth to thrive in highly flexible, changing environments, they need to have been exposed to settings that stimulate ability to adapt, ability to be creative and insightful through synthesis (15) rather than through mnemonics, repetition and following formulaic solutions.



"Have you any other skills outside of being able to shoot down 250,000 droids in a video game?"



"Some of these young school-leavers aren't remotely prepared for the realities of the modern work environment."

Education today needs to encourage critical thinking, synthesis, creativity, problem solving as well as standard curriculum. Studies on the accumulation of human capital points out that as youth spend more time in structured learning environments they become successful navigating closed environments only.

Learners quickly learn the rules, and as long as the rules do not change they tend to do well - they feel comfortable in settings they are used to, where things are structured and controlled, whereas a more open and risky environment they find intimidating.

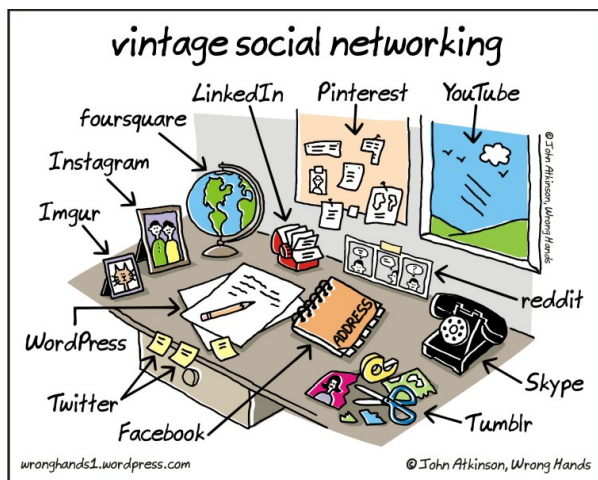
The education system is creating a dangerous disconnect between their learning environment and the realities on the outside when youth enter the workforce. (16)

Youth everywhere face the same problem - they need to become more entrepreneurial and innovative to succeed. (17) Education rooted in subject matter only learning, standardised testing, onerous homework loads, 'correct-answer' instruction, do not encourage genuinely creative and collaborative learning, nor do these aspects help cultivate a more entrepreneurial individual.



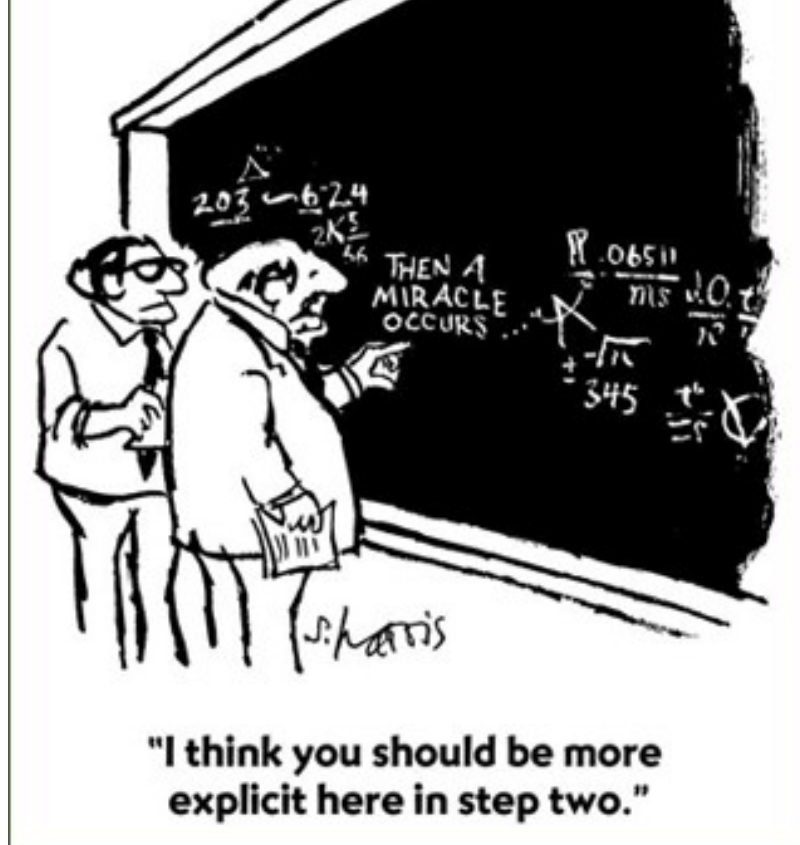
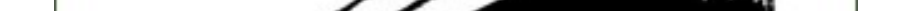
Worldwide integration has caused a continuous rise of technologies

Today's youth is the first generation to grow up in the midst of digital technology. Digital technology has changed the way learners think and behave; learners require different activities to engage them in the learning process and so maximise the potential of new technologies that surround them.



The new generation of digital learners have been exposed to a different range of experiences during the key developmental phases that actually make these learners think and process information differently, according to Marc Prensky. (18) These learners have become accustomed to receiving information quickly and are adept at parallel processing and multi-tasking. (19) They tend to function best when networked in a group cooperative environment. These learners also tend to thrive on instant gratification and frequent rewards. (20) This means that step-by-step instructions, so prevalent in present teaching methods today, will not work too effectively in engaging these learners. Linear thought processes that dominate presently, can actually hinder learner brain development through game and web surfing processes on an electronic device. (21) Learners having grown up in the digital era have had easy access to all forms of information at will, which must impact the role of the practitioner. Education has been unable to keep pace with the possibilities and implications for youth navigating the learning process within this new landscape. (22)

Unlimited access to information can now be digested at the learner's own rate of learning; this significantly changes the dynamics of a classroom environment. Whilst the practitioner generally teaches in a structured grade related order, presenting predetermined information in instalments, learners are often functioning in an ungraded, unlimited and interactive environment at home where they have the power to decide for themselves what is difficult/not difficult, what they chose to learn and how long they will take to learn something. The unquestionable authority the practitioner once had over learners is in the process of disappearing. (23) Education today, however, still holds the practitioner as 'expert' in front of a classroom, conveying information in a manner that may not be as up to date as what the learner is able to access on his/her own. Youth are in a way 'conscripted' to learn within a rigid system that does not match the private world in which they function. This is a recipe for **disengagement** for many.



Education systems today are still built around technologies of the 'industrial time'; chalk, pencil, paper, photo-copying, blackboard, overhead projectors and textbooks; these are still the predominant tools used in classrooms and work stations, some featuring computers for self-study purposes. Appearances may suggest that education is in touch with technology, but on close inspection there are disturbing realities.

The most common application of digital media is word processing, yet little active use of the internet for learning is incorporated in teaching practices. There is a significant difference between having computers or internet available to learners, and creatively utilizing information and communication technology potential for real learning opportunities. Lost are the possibilities to form multi-sensory, collaborative learning environments that bypass the restrictions of time, place and formal structures. These technologies could provide unique opportunities for interaction and stimulation that are needed to engage youth in a digital age, especially in remote and rural communities.



"Could I have some computer time to troubleshoot this problem?"

Worldwide integration necessitates the cultivation of a Learner

Mental Constitution - Exposure to and the development of distinct modes of thinking is necessary, because the future can be expected to become increasingly complex with a reliance on the application of knowledge, skills and resourcefulness of learners. Today, a key issue for schools and practitioners is how **to effectively practice knowledge acquisition**, thus to prepare youth to connect with and live in harmony with their environment.



Learners should be provided opportunities - affordances - to think in ways that characterizes the major disciplines through at least one way of thinking. A distinctive mode of thinking in a disciplined manner.



"Kinesthetic is a learning style. Auditory and visual are learning styles. Cheating is not a learning style."

It is these types of experiences that are thought to contribute toward enhanced preparation for a learner's active, responsible role in society and the workplace. (26) Although education today has changed from bygone eras, it still reflects a 'conservatism'. Schools find themselves pressed to rapidly respond to social environments largely because of insufficient resources, but also because of uncertain charts in relation to emerging social needs. In such times, certitudes of what is conveyed to the rising generations may be threatened, as may be those who are engaged in the practice of knowledge - faculty and the school itself. In these circumstances, social discord can erupt over disputed property of various forms of knowledge, beliefs and values.



"You're actually passing notes in class? That is so retro!"

Education appears still to reflect a curriculum composition and practice that places literacy and numeracy at centre stage during the early school years, after which phase, acquisition of subject matter by rote becomes the norm.(27) Learners appear not to be instructed to 'understand', how to use knowledge acquired. Learners merely seem to repeat, which constitutes a reliance on mnemonic capacity and is likely to deliver inert knowledge. Knowledge of facts is nonetheless a useful ornament, but facts only gain meaning by being placed in context rather than merely stored in the mind as data.

The present system of methodology teaching will therefore more than likely have learners perform below expectations when asked to explicate examples that are not in textbooks or are not featured in set assignments.

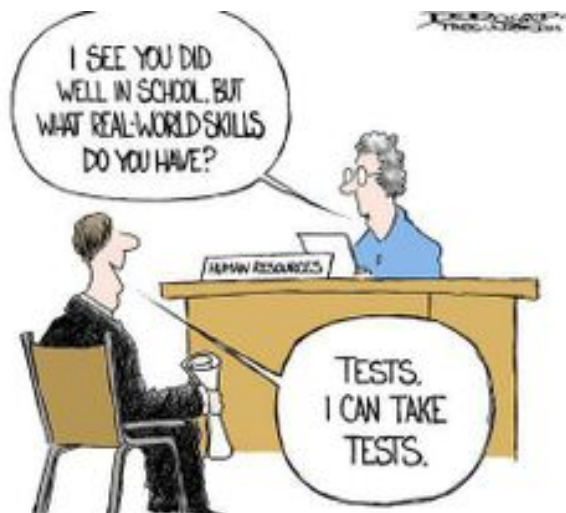
Yet education policy makers continue to assume that educational goals are self-evident; clearly a stance not in keeping with change and meeting new essential requirements. (28)

Conditions have triggered calls for new aspirations, ones that couple a **focus** in learners :-

- A) Their heredity, experiences, perspectives, backgrounds, inclinations interests and needs with a *focus* on learning in a **learner-centered** environment,
- B) The best available knowledge about learning, how it occurs and about a *focus* on practices that are effective in promoting **motivation, learning and achievement**. (29)

This dual focus is likely to inform and derive educational decision making in the 21st century, a shift in relation to teaching and learning from a predominantly teacher-centred to a learner-centred milieu. This shift will call for the role of the practitioner to change to facilitator, not unlike the role of the conductor to an orchestra. Facilitating active and experimental learning, which in turn will entail a leadership initiative on the part of schools and principals to establish a community of discourse on learner-centred education strategies. Team-learning will serve as the mode for acquiring and sharing ideas, experiences about strategies for the implementation and assessment of course design, with the aspect of learner-centred environment responsibility and governance resting with the school at the centre of this Team-learning order, where the school may be defined as a '**Learning Organisation**'. (30)

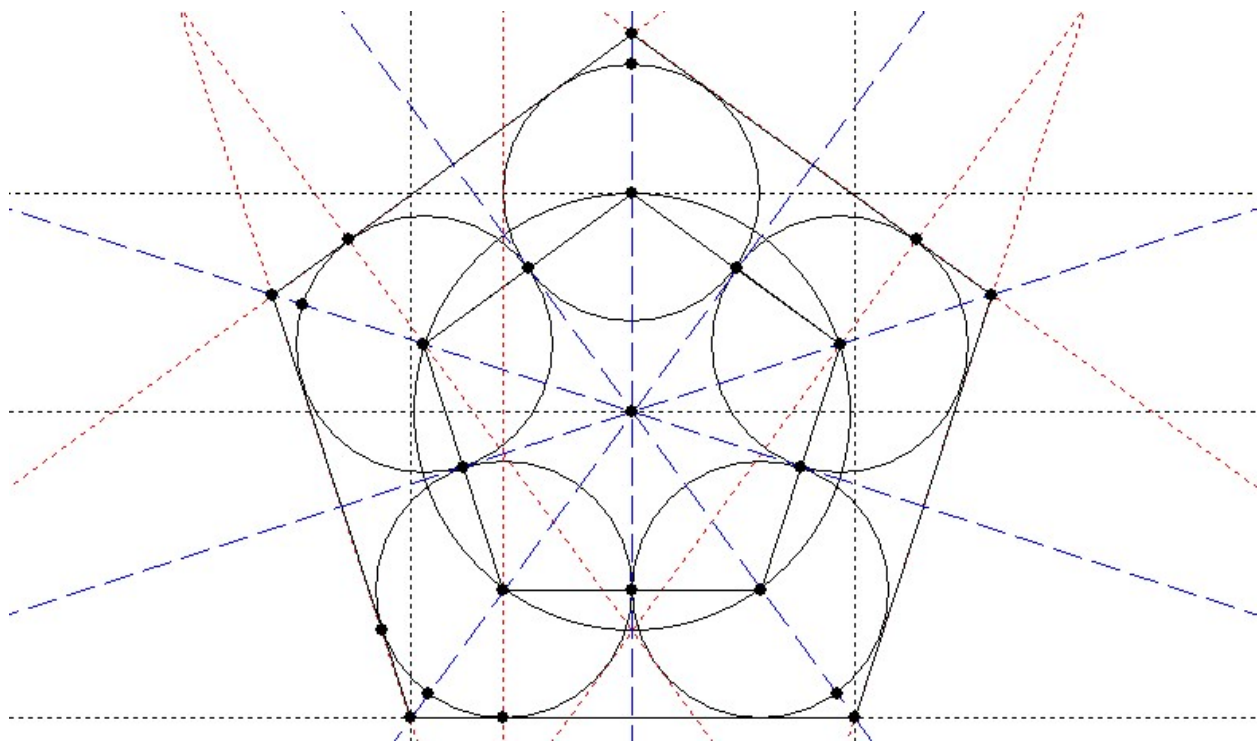
Whatever one's viewpoint regarding required changes in minutiae, a learner-centred perspective should be a reflection of the twelve psychological principles pertaining to the learner and the learning process, (31) (32) unless one plans to continue to prepare learners for the past rather than the world of today and tomorrow. (33)



A Learner Mental Constitution

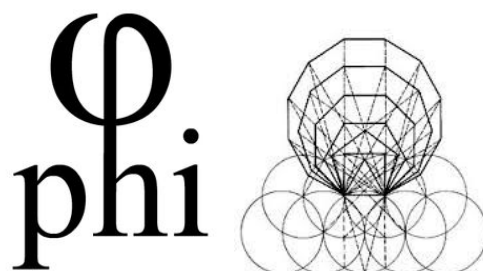
Five Mental Dispositions

The Learner Mental Constitution image is inspired by Viktor Schauberger's "Golden Section, Phi, from the pentagon in the proportion of 1 : 1618033988, a proportion reflected in so many of Nature's creations and which number Callum Coates refers to as the Transmutation Number. (34)



The top three from left to right:- Synthesising Mind, Disciplined Mind, Creative Mind (Cognitive)

The bottom two from left to right:- Respectful Mind, Ethical Mind (Human)



At a more sublime level, it represents what Buddhists refer to as the '**Golden Middle Way**', the path of tranquility, compassion and contemplation unassailed by the vicissitudes of life. (35)

Philosopher Alfred Whitehead once said - "A merely well-informed person is often a most useless bore. While facts and skills do matter, they need be in context and for a purpose". This statement would explain why the more current educational philosophy orientations of Progressivism and Social-Reconstructivism tend to be organised around problems, projects and questions rather than around lists of facts and disciplines. Not so in education it would seem...

Teaching is typically interdisciplinary, assessment rarely focuses on rote memorization, and excellence is not confused with 'rigor'. The point is not merely to challenge learners - 'harder' is not necessarily better - but to expose youth to thinking in different ways about things that matter, *that's* the point. Help them to understand ideas from the inside out.

The Disciplined Mind

This mental stance is central to the five mental dispositions, as disciplinary expertise informs the learner about the contexts in which he/she lives.

The Disciplinary Mind will have mastered at least one way of thinking, which normally takes around ten years per subject. It allows one to work steadily over time to improve skills with understanding.

Individuals without one or more disciplines are unlikely to succeed in today's world and are likely to be assigned only menial tasks, if they can find employment at all. (36)

A typical example of this situation is the case of a secondary school level learner; when asked to elucidate a phenomenon with he/she is not familiar, but which phenomenon does lend itself to an explanation in terms of a concept, the learner is unable to do so as most learners cannot explain the phenomenon about which they are being questioned.

Disquieting and **disheartening** is the revelation that virtually *identical* answers are given by learners who have *never* taken relevant courses, and who have in all probability never come upon the concepts relevant to a proper explanation. This is because learners tend to accumulate subject matter information, but have not learnt to think in a disciplined manner, a higher order level. The subject matter has, therefore, not been made part of the learner in terms of understanding the difference between subject matter and discipline. Learners tend to study subject matter only, because of instruction mode and because tasks set are merely committed to memory - facts, formulae and figures.

If learners' responses are indistinguishable from those with no study of designated topics in question, then one must face the possibility that 'knowledge' may have been gained without a correlative gain in disciplinary sophistication and is, in essence, **no different** from the response of an individual with **no** education. (37)

Little wonder then, that learners feel conscripted to school and may explain, in part, behavioural trends in youth today and the steady, alarming rise of those touched by **depression**.

To cultivate a mind that is disciplined, schools and practitioners need to embrace the following concepts :-

- Identify learner Essential Learning Styles / Learning Style Dimensions through determining **How the Individual is Intelligent** and **How the Individual is Intellectually Functional**.
- Identify and realise mutual practitioner/learner interests, attributes and engage in exchanges.
- Engage in different modelling in thinking, not dissimilar to teaching for Multiple Intelligences and Dialectic Thinking.
- Gain in thinking in a disciplinary manner by completing more signature assignments rather than standardised short-answer tests.
- Develop this mode of thinking through timely and constructive feedback.
- Foster mastery in this way of thinking by learners through the passing of successive challenges towards learners becoming proficient.

Schools and practitioners **do** have a choice however:-

- A) **Not teach learners to include exposure to different mental dispositions,**
- B) **Introduce the learner to the facts of the subject matter only,**
- C) **Strive and familiarise learners with the experience of thinking in a disciplined manner in relation to subject matter.**

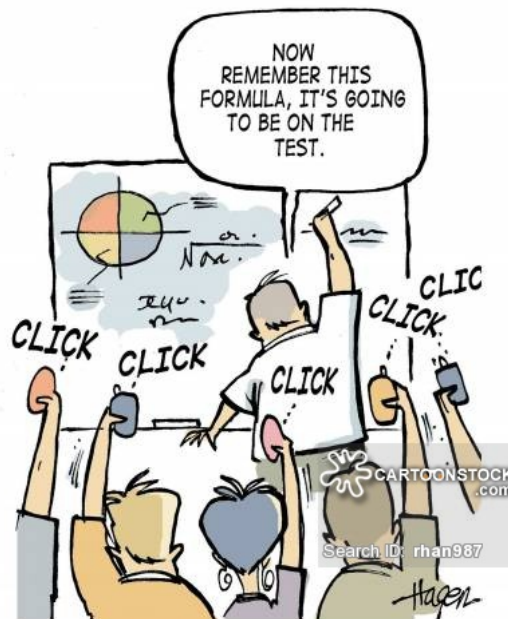
The third option (C) is the referred pathway for this essential skill and there are four stages that need addressing:-

- The identification of the quintessential discipline components in relation to content.
- Subject matter archeology in terms of time spent teaching the discipline, which needs to be significant.
- Subject matter requires approach in different ways - exposing subject matter from the inside out.
- 'Performances of Understanding' - the provision of affordances to exhibit understanding, to experience same. Training should consist of formative exercises with feedback and fine-tune performances where appropriate.

Exhibits and performances are necessary; however, learners are normally examined only on problems to which they have been exposed in their textbooks.

Real comprehension cannot be gleaned as the ultimate uses of the purveyed knowledge is not generally evident - this is because learners are not 'stretched' to flex their knowledge given new scenarios. Standardised methods of testing, therefore, are of little use, as they do not reveal whether the learner is actually able to make use of subject matter once he/she steps outside the classroom environment. (38)

The development of this mental disposition should be commenced at the commencement of adolescence and should continue as a life-long learning goal. The year commencing secondary school would be appropriate for the cultivation of this mental disposition.



The Synthesising Mind

This mental stance allows the individual to 'knit and riddle' information from disparate sources into a coherent and cohesive whole, and represents a vital ability for the world of tomorrow.

There are various types of elucidation - acceptable syntheses:-

- **Narratives** - when synthesising, one places all the disparate elements together, and one then endeavours to construct a coherent whole in the form of a narrative.
- **Taxonomies** - when synthesising, one arranges, orders all the materials in terms of salient characteristics.
- **Complex concepts** - when synthesising, one takes a newly designed concept and blends a range of phenomena to form a more enlightened coherent and cohesive whole.
- **Rules and Aphorisms** - when synthesising, one may capture conveyed folk wisdom in short phrases for application on a wider scale, by incorporating metaphors which may be presented graphically as well in written format.
- **Embodiments without words** - when synthesising, one may include works of art or graphics to illustrate.
- **Theories** - when synthesising, one amalgamates concepts into a theory.
- **Meta Theory** - when synthesising, one may create an overall framework for knowledge - a theory of theories. (39)

Synthesising in the classroom entails four main components that schools and practitioners should embrace:-

- **A goal** - conception of what the synthesiser is trying to achieve.
- **A starting point** - an idea, image or previous work on which to build.
- **A selection strategy, methodology or approach** - this component needs approaching in a disciplinary fashion; one needs to choose a format - one of the elucidation types detailed above - which draws on the tools of the learner's discipline with steady sessions toward the goal set and agreed upon. Tools may range from logical notebooks, sketchpads or written notepads.
- **Drafts and feedback** - drafts are often rough, primitive at the start of a project, yet may contain the nucleus of the final writing, be it an essay, thesis or dissertation. (40)

Synthesising does not necessarily end when a synthesis has been fashioned; it may be but a first step in a process, based on a vetted and often revisited process like the Disciplined Mind and both fall in the cognitive range of mental dispositions.

There are higher levels of synthesis such as Interdisciplinary Syntheses; this most ambitious form of synthesising will not be featured in this paper, other than to say that this form is difficult and should not be entertained lightly because this type must be genuinely integrated, not merely juxtaposed.

Since practitioners and policy makers are *all* learners, it should be realised that the learner who wants enough to understand this vital mental disposition should be encouraged and afforded the opportunity to master synthesising skills - it is often associated with the Creative Mind...

Synthesis is no easy concept. The young mind is characterized as follows; it can readily discern connections, has a proclivity to connect, to integrate, to synthesise a story on metaphors. Older life-skilled filled minds, however, tend to become somewhat conservative with a tendency to shift toward explicitness except perhaps for those practitioners who also have a creative mental disposition.

Those who do not have this asset, and contemplate interdisciplinary thoughts, may find difficulty with this notion and should consider ecological niches instead.

Young minds tend to overgeneralize though, whereas the older person tends to resist generalisations, notwithstanding they may be apt.

Training will tend to reinforce these tendencies, as individuals differ in their predisposition to metaphorise - that is, the learner's capacity to transfer lessons learnt from one class disciple to the next. (41)

The development of this mental disposition should be commenced early and should become more deliberate over time. The year commencing secondary school is a likely time for earnest schooling of this most valuable and important mental disposition.



The Creative Mind

This mental stance falls in the cognitive range; it breaks new ground, puts forth new ideas, poses unfamiliar questions and makes up new ways of thinking which may arrive at unexpected answers.

In recent years social scientists have embraced a different view of creativity and today a variety of relatively independent endeavours are recognised.

A Creative Mind can lead the way to solving hitherto vexing conundrums. The problem, however, is that the solution-couplet represents but one type of creative thought - skill in one variety need not entail skill in others. Creativity is the occasional emergent from the interaction of three autonomous elements:-

- The individual who has mastered some discipline or domain and steadily makes variations in that domain,
- The cultural domain in which the individual works with its models, prescriptions and proscriptions,
- The social field - those individuals and schools that provide access to relevant educational experiences as well as opportunities to perform.

Mihaly Csikszentmihalyi believes that creativity occurs when an individual or a group derived product generated in a particular domain is recognised by the relevant field as innovative and, in turn, sooner or later exerts a genuine detectable influence on subsequent work in that domain.

To cultivate a creative individual across the age span from a young child to an adolescent deviates from the disciplinarian approach. It bears similarities to the emergence of the synthesiser, hence the consecutiveness between these two disciplines. The learner on a strict disciplinary path masters key literacies first and thereafter, as soon as practicable commences systematic mastery of other disciplines. However, too strict an adherence to disciplinary work operates against a more open stance of the synthesiser and the creator.

Children need little pressure to assume the creative stance; they tend to persist in exploring, even in the absence of encouragement.

The challenge for schools and practitioners is to keep alive the mind and sensibility of the individual from child- to adulthood. To retain neoteny, depends on messages that exist outside school as the arts tend to have been downplayed in importance in more recent times; today, a negative influence of globalisation, is the adoption of the Business Model to solve all ills and problems of the world. (42)

It is important to keep open alternative possibilities other than generic formulae for the nurturing of creative minds.

Some emphasis should be placed to foreground the option of unfettered exploration; a flow of creativity can be maintained by exhibiting different, equally viable solutions to single posed problems or puzzles.

The exposure of learners to attractive, creative persons who model both the approach and the experiences of creative life, for instance, or the introduction of new pursuits tend to look benignly upon errors.

Parents particularly, should encourage their children to pursue interests or activities that do not necessarily feature a right or wrong answer.

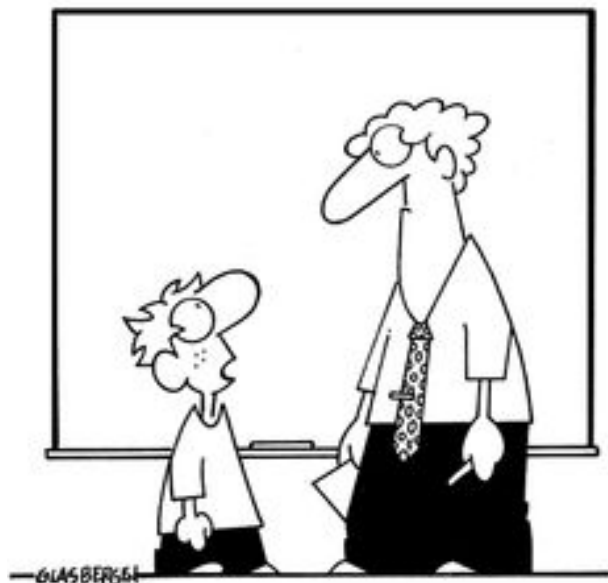
Multiple representations are grist for new ways of thinking in regard to entities, problems or questions - they tend to catalyse creative questions and can spawn creative solutions. Adolescent learners become capable of envisioning possibilities that are different from current realities.

The capacity to appreciate how certain givens in one's own culture could be fundamentally transformed, particularly in a learner-centred group arranged as opposites in dialectic unity.

Settings, where envisioning has not been encouraged is where parents, schools and practitioners have a responsibility to introduce systems that operate according to different rules, such as utopias, dystopias, alternative numerical systems - the adolescent mind will tend to take the concept further.

However, care need be taken in relation to the adolescent being overcritical of self and others; such hyper-criticism can thwart creativity.

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"If my mind wanders during class, think of me as part of a distance learning program."

Creations not infrequently emerge from synthesis; the impulses behind these two stances are distinctive.

The synthesiser's goal is to place what has already been established in as illuminating a form as is possible, whereas the creator's goal is to shuffle the contours of a genre, to guide a set practices along a new and hitherto unanticipated directions.

Whereas the synthesiser seeks order, equilibrium, the creator is not motivated by uncertainty, surprise, continual challenge and a 'balanced-imbalance' as one finds in Nature.

Today, creativity is needed in the human sphere and particularly the ways in which people relate to one another. This aspect concerns two of the five mental dispositions, namely the Respectful and Ethical Minds - these two mental dispositions concern human endeavour and human enterprise.

The development of the creative mental disposition should commence early and in earnest, commencing year ten (10) at high school.

The Respectful Mind

This mental stance takes note, and is open to differences between individuals and groups; it makes the effort to understand others.

This learner seeks to work with others in the knowledge that people are equal but different, often providing the individual with different insights and solutions to questions, assignments and relationships.

In a world that is interlinked, interdependent, becoming ever more complex and competitive, traits such as intolerance, impatience and disrespect are no longer viable, constructive options.

Others must be understood on their own terms, and a Respectful Mind should endeavor imaginative steps when necessary, so to seek and convey trust in others in an attempt to make common cause and, of course, to be worthy of that trust.

Humans exhibit a deep seated tendency to create groups to parade marks, signs, totems, apparel and tattoos for these collectivises; they either adopt supportive or antagonistic attitudes towards neighbouring and/or more distant clans.

Kinship patterns are not infrequently exogenous - identifying features should not be restricted to celebratory or socially agreeable situations.

In more recent times the ritualistic aspect of conflicts seem to have manifested themselves - regional and global conflicts for example, reveal evidence of destructive wants.

Aggressive, reactive behaviours and those groups that support such traits are possibly best addressed through education as how and why such traits are conceived.

Respect for others is not an unreasonable goal; rather than ignoring differences, learners will need to learn or re-learn to live those differences - providing such differences do not impose or take away - and with those who belong to cohorts, groups, tribes, societies.

The development of this mental disposition should commence at an early age in a *supportive* environment and continued in earnest at secondary school level.

The home and the media role are impacting influences on young learners particularly, a point that must be realised by guardians, as well as schools and practitioners.



The Ethical Mind

This mental stance ponders the nature of one's work, the needs and desires of the society in which one lives. This mind conceptualises unselfishly to improve the lot of all in a group or in society.

Ethics involves a stance that is inherently more distanced than face-to-face relationships and represents a stance embodied in tolerance, respect and one of personal morality.

The capacity to reflect explicitly on the ways in which one does, or does not fulfil a certain role. This stance, like the Respectful Mind, is an important aspect in Richard Roest's paper **A School Tutorial/Mentoring Programme**.

Horizontal support, peer support, behaviours and beliefs have a telling impact on learners, especially those who are perceived as more knowledgeable, prestigious and/or are achieving.

The quality of peers and mentors is important during the adolescent years and should be centred on 'good work'; it **matters** whether adolescents fall in with individuals who are willing to commit to community service, academic studies or encouraging interests at a time when adolescents are experimenting with life options. (43)

Schools and the educational team - school, practitioners, parents, community - should play a key role in determining whether learners proceed on the path of good and active citizenship.

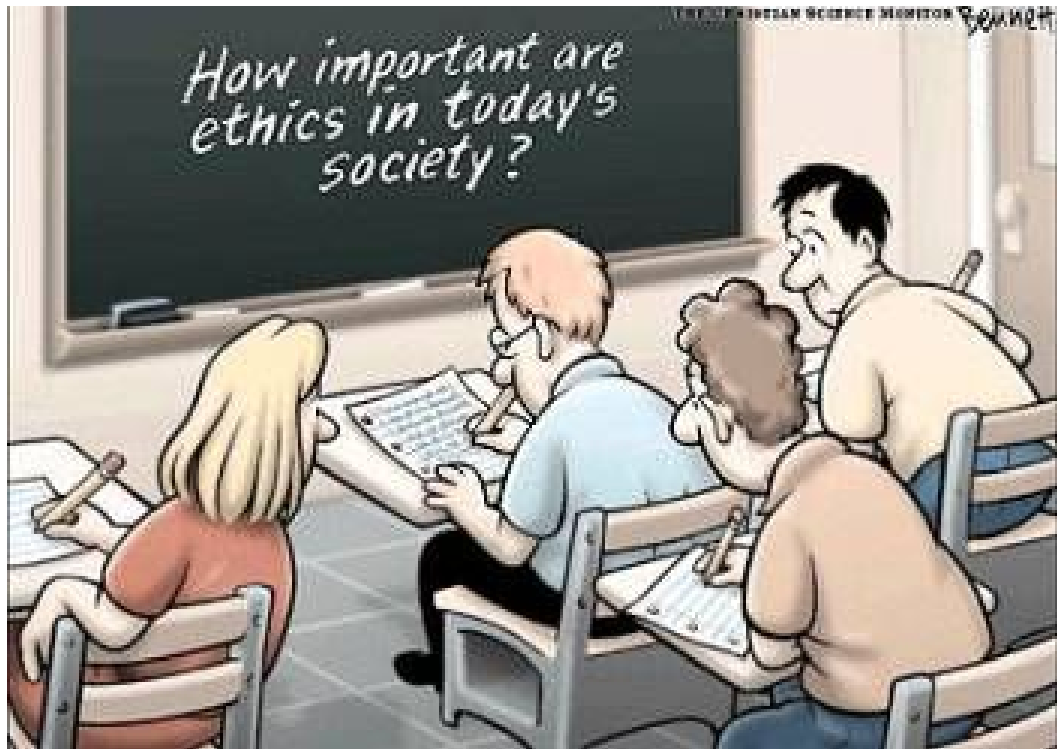
It represents an important aspect in arresting encroachment of worldwide integration forces on valued local traditions, standards, values, and of course, schools themselves. (44) For example, practitioners, tutors, mentors can smoothen the road to an ethical learner's need to understand why they are learning, what they are learning and how this knowledge can be put to constructive use.

As disciplined learners, practitioners, tutors, and mentors should have a better understanding of the world, but if they are to qualify as ethical themselves, it is their responsibility too, to use this understanding to ensure learner compliance in **positive** ways, and to bear witness and **correct** unproductive, negative use. That is why community service programme in the form of work experience is an important part of curriculum. When learners discover that knowledge can be put to good purpose they are more likely to gain pleasure from such endeavour and are more likely to find such experience meaningful in itself.

In so doing, they may become an integral part of the programme, the group participating in the programme, because of kinship - a sense of belonging tends to develop.

The cultivation of this mental disposition should await the time when individuals can think more conceptually and abstractly about the role they chose as a citizen of the society they live in - acting in an ethical way presupposes strength of character and maturity and may require support as well as periodic inoculation.

Year ten (10) at secondary school might be the appropriate time to develop this mental disposition in earnest.



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