

**Using the Schooling Strategy as a Framework for  
Significantly Improving Opportunities and Outcomes  
for Students across the Middle Years of Schooling  
(Years 7 to 10) Regardless of School Structure.**

**Middle Schooling - Making a Bigger Difference for  
Students in the Middle**

Primary Principals' Sabbatical Leave Scheme

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## **Background**

The Schooling Strategy (2005) ‘Making a Bigger Difference for all Students’ is the umbrella document for all decision making and policy development in New Zealand education. It provides a framework for action focusing on three priorities: all students experience effective teaching; evidence-based practice; and children’s learning is nurtured by families and whanau.

New Zealand is one of a few OECD countries that do not have a policy or strategy for ‘middle schooling’ (School levels Years 7-10). NZAIMS (New Zealand Association for Intermediate and Middle Schooling) has been lobbying the Minister of Education and the Ministry of Education for the past 10 years for formal recognition of ‘middle schooling’, research, policy development, as well as a strategy for middle schooling.

## **Purpose**

To investigate how the Schooling Strategy might be used as a framework for significantly improving opportunities and outcomes for students across the middle years of schooling (Years 7 to 10) regardless of school structure<sup>1</sup>.

Focusing on the first two priorities of the Schooling Strategy (All students experience effective teaching and Evidence-based practice) investigate:

- What are the essential principles and practises of effective “middle schooling”?
- How can these practises be effectively applied across Years 7-10 regardless of school structure?

## **Methodology**

The following methodology was used to complete this investigation:

1. Framing the research questions using the definition of middle schooling as the start point;
2. Gathering evidence through:
  - Research of middle schooling in USA and Australia;
  - Attending the Teachers at Work 4<sup>th</sup> Annual Thinking and Learning Conference, Melbourne, Australia;
  - Discussions with:
    - Penny Bishop, Ed.D., Middle Level Teacher Education, College of Education and Social Services, University of Vermont, USA;
    - Pat Nolan, Associate Professor, Massey University;
    - Tony Cook, General Manager, Student Learning Division, Department of Education, Victoria, Australia.
  - School visits in Melbourne – Macleod College and Ashwood College
3. Analysing, synthesising and evaluating the evidence;
4. Reporting findings.

## **Framing the questions**

Middle schooling is defined as “education or schooling that is responsive to the developmental characteristics and needs of ‘emerging adolescents’”<sup>2</sup>.

The Schooling Strategy places student learning and therefore the learner at the central focus. In terms of the middle years of schooling we must therefore consider the “emerging adolescent” learner at the centre. We must therefore consider the following questions:

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<sup>1</sup> Under the New Zealand education system Year 7-10 students are provided for through a range of schooling structures: Full Primary, Area Schools, Intermediate Schools, Composite Middle Schools, High Schools, and Year 7-13 High Schools

<sup>2</sup> The term “emerging adolescent” was coined by David Stuart and Pat Nolan (1993) to describe the developmental period which begins prior to the onset of puberty and extends through the early stages of adolescence – approximately 10-14 years of age.

*What do we know about emerging adolescents?*

*What characterises them?*

*What makes them unique?*

*What do we know about the emerging adolescent learner?*

*How do emerging adolescents learn best?*

The Schooling Strategy also focuses on reviewing and refining teaching and learning practice to achieve best outcomes for each student'. We must therefore ask:

*How can our knowledge about the emerging adolescent learner inform what teaching and learning principles and practices achieve best outcomes for emerging adolescents?*

*What are the essential principles and practises of effective "middle schooling"?*

The Schooling Strategy provides a framework for action.

*How can the essential principles and practises of effective middle schooling be applied in action?*

## **Findings**

### ***What do we know about the emerging adolescent? What characterises them? What makes them unique?***

The period of emerging adolescence (10 - 14 years) is marked as a period of developmental change second only in importance to the first 2 years of life (Stuart and Nolan, 1993). More change occurs during this stage of development than in any other four year period. The changes include physical, psycho-emotional, cognitive and social. These inter-related and often interdependent changes which occur during emerging adolescence have potential for long lasting effects on self concept, academic, social adjustment and the kind of person that the emerging adolescent finally becomes (Jones, 1981; Hargreaves, 1986). Put simply development at this stage may well determine the adult.

Physical development during emerging adolescence is characterised by: accelerated growth (onset in girls 10-11 years and boys 11-12 years); variable growth rates; variable degrees of co-ordination; onset of puberty; development of primary and secondary sex characteristics; hormonal imbalances (which may cause acne, allergies, eye problems, emotional variation); varying energy levels due to basal metabolic rate variation; tire easily; variable but ravenous appetite / peculiar tastes with a preference for junk foods.

Psycho-emotional development during emerging adolescence is characterised by: searching for personal identity; transition from Erikson's 'industry vs inferiority' to 'identity vs role confusion'; increasingly seek independence from adult authority; fluctuating self worth; preoccupation with 'self'; focus on personal appearance; concern regarding physical growth and maturity; believe personal situations/experiences are unique to themselves; sensitive to personal criticism; increasingly concerned about peer acceptance and make comparisons; sex role identification strengthens; examine beliefs and allegiances; develop personal values and opinions regarding major societal issues.

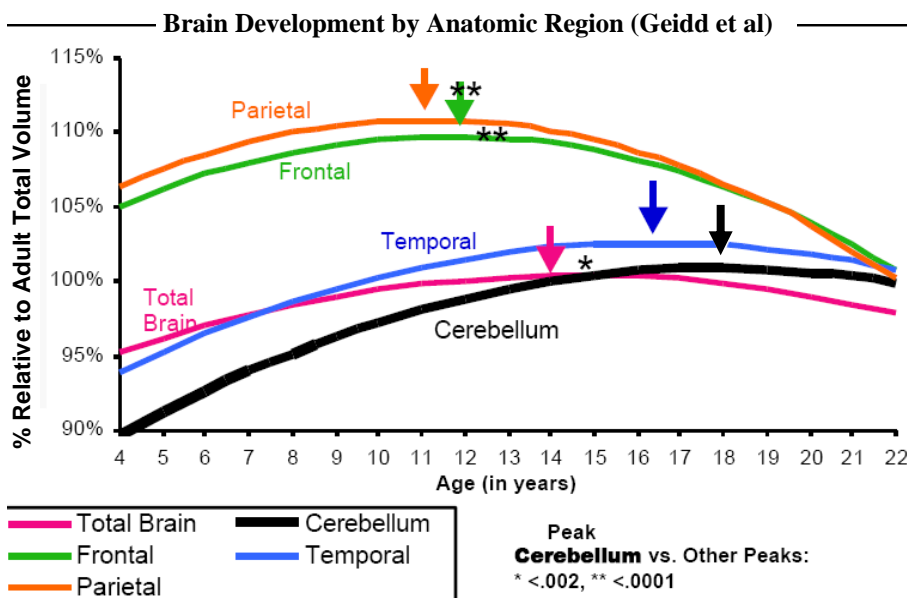
Social development during emerging adolescence is characterised by: decreasing parental affiliation and social influence; increasing peer affiliation and social influence; strong group conformity (eg fads); developing interpersonal skills; constantly changing social interactions; growing acceptance of and interest in members of the opposite sex; socially vulnerable and influenced by media; may appear immature when social skill development lags behind physical and/or cognitive maturity;

may exhibit unusual or drastic behaviour; attempt to identify with adults other than parents; desire, but also question, direction and regulation; idealistic and strong concern for social justice and the less fortunate.

Cognitive development during emerging adolescence is characterised by: a gradual and diverse transition between ‘concrete’ and ‘formal’ operations; growing capacity for conceptualisation; varying development of ‘multiple intelligences’; inquisitive; prefer active learning experiences; prefer peer interaction during learning experiences; growing ability to make reasoned moral and ethical choices,

### What do we know about the emerging adolescent learner?

Recent brain research identifies this developmental stage as a period of vast brain development. Dr Jay Giedd and colleagues at McGill University, Montreal looked at the brains of 145 normal children by scanning them at 2-year intervals from ages 4 - 22 years shedding light on how the brain grows and when it grows. They discovered that commencing at pre-puberty (about 11 years in girls and 12 years in boys) there is a second wave of development of the two brain development



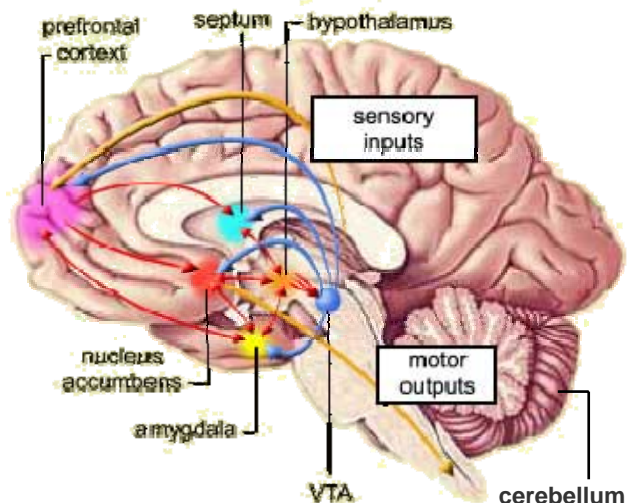
processes of overproduction of brain cells (neurons) and connections between brain cells (synapses) and the pruning them back, which they previously knew occurred around the age of three.

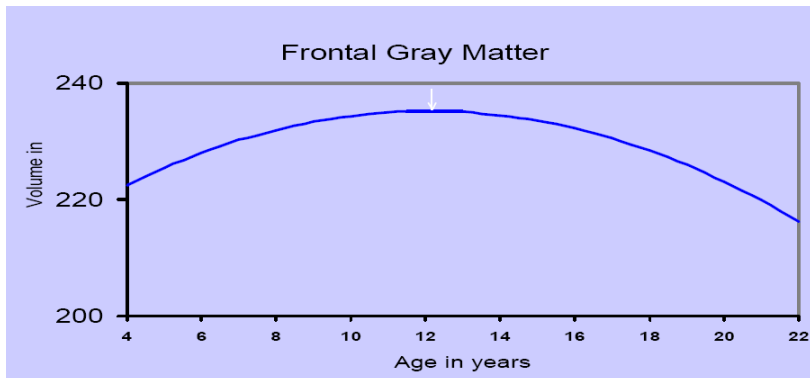
The pruning process involves fierce, competitive elimination. Only a small percentage of cells and connections make it or become “hard-wired.”

The leading hypothesis regarding the “pruning” is the “Use it or lose it” principle. Those cells and connections that are used will survive and flourish. Those cells and connections that are not used will wither and die.

Pruning occurs in stages from the back of the brain to the front commencing with the cerebellum responsible for physical co-ordination and sensory processing; followed by the amygdala responsible for emotions; then the nucleus accumbens responsible for motivation; and finally the prefrontal cortex responsible for judgment.

Giedd and colleagues noted that during this second wave of overproduction there is a thickening of “gray matter” – the “thinking” part of the brain. They also noted that the maturation process is not complete until about 24 years.





Brain Development in Healthy Children and Adolescents: Longitudinal and Cross-sectional Data (243 scans from 145 subjects) [Giedd et al]

The research of Giedd and colleagues explains and highlights the following characteristics of the emerging adolescent learner: sensory and physical activities are favoured over complex, cognitive-demanding activities; a propensity toward risky, impulsive behaviours and the group setting may promote risk taking; poor planning and judgment; activities with high

excitement and low effort are preferred; poor modulation of emotions (hot emotions more common than cold emotions); heightened interest in novel stimuli; greater risk taking (particularly in groups); greater propensity toward low effort - high excitement activities; less capacity for good judgment and weighing consequences.

David Sousa (2006) author of “How the Brain Learns” lists the following facts about the brain which impact on learning:

- Oxygen and glucose are needed for brain cells to do their work (The brain uses 20% of the body’s oxygen intake and 18% of the nutrients)
  - Protein foods rather than carbohydrates are brain friendly foods;
  - Teachers should provide for activity during learning;
- Survival and emotional data have higher priority for processing than learning concept-based curriculum.
  - Students must feel physically safe and emotionally secure before they can focus on cognitive lesson objectives;
- Working memory is a temporary memory with capacity and time limits. Teachers need to remember these limits when planning and presenting lessons;
- Information is more likely to get tagged for permanent storage if it makes sense and has meaning. Teachers spend most of their time planning for sense and need to work harder at helping students find meaning in the lesson material. It needs to be personalised;
- The self-concept has great influence over whether a person will get involved in a particular learning experience. Not surprisingly, individuals tend to participate in learning activities that result in success and avoid those that end in failures;
- The brain of today’s student has developed in an environment filled with interactive as well as passive technology. It has become acclimated to novelty. Educators need to consider ways in which they can include novelty as part of the learning approaches that are used in school.

“The human brain is engaged by novelty, meaning and relevance. The brain takes note of things that are novel or surprising in some way. It notices things that make sense and fit with prior understanding, and it notices things that spark personal connections.” (Robin Fogarty, 2001)

With regards to how the brain learns Caine and Caine (1990) identified twelve brain principles which have implications for the teaching and learning of all students. These principles have special significance with regard to the emerging adolescent learner in light of the vast brain development during emerging adolescence.

1. The brain performs many functions simultaneously. Learning is enhanced by a rich environment with a variety of stimuli;
2. Learning engages the entire physiology. Physical development, personal comfort, and emotional state affect the ability to learn;
3. The search for meaning is innate. The mind's natural curiosity can be engaged by complex and meaningful challenges;
4. The brain is designed to perceive and generate patterns;
5. Emotions and cognition cannot be separated. Emotions can be crucial to the storage and recall of information;
6. Every brain simultaneously perceives and creates parts and wholes;
7. Learning involves both focused attention and peripheral perception;
8. Learning always involves conscious and unconscious processes;
9. We have at least two types of memory: spatial, which registers our daily experience, and rote learning, which deals with facts and skills in isolation;
10. The brain understands best when facts and skills are embedded in natural spatial memory;
11. Learning is enhanced by challenge and inhibited by threat;
12. Each brain is unique. The brain's structure is actually changed by learning.

In Queensland and Victoria, Australia, recent longitudinal studies have shown that students are making the least progress in learning and the gap between low and high achievers increases markedly in the middle phase (10-14 years). Some students become gradually disengaged through classroom activities that are not suited to their learning styles and they lose enthusiasm for learning. Truancy rates are highest during the middle phase, especially Year 9.

The Queensland and Victorian education departments both formally recognise that the impact of simultaneous physical, emotional, intellectual and social factors as students move through the middle phase (emerging adolescence) creates needs and challenges for this age group that are significantly different from the needs of younger children or older adolescents.



## What are the needs of the emerging adolescent?

### Physical development of emerging adolescents

<u>Characteristics</u>	<u>Needs</u>
<ul style="list-style-type: none"> <li>Accelerated growth (onset in girls 10- 11, boys 11 - 12)</li> <li>Variable growth rates</li> <li>Variable degrees of co-ordination</li> </ul>	<ul style="list-style-type: none"> <li>Challenging regular physical exercise</li> </ul>
<ul style="list-style-type: none"> <li>Onset of puberty</li> <li>Development of primary and secondary sex characteristics</li> </ul>	<ul style="list-style-type: none"> <li>To be able to understand physical changes:               <ul style="list-style-type: none"> <li>self acceptance</li> <li>self understanding</li> </ul> </li> <li>Access to health / guidance professionals</li> </ul>
<ul style="list-style-type: none"> <li>Hormonal imbalances (may cause acne, allergies, eye problems, emotional variation)</li> </ul>	<ul style="list-style-type: none"> <li>An understanding of health and hygiene</li> <li>Access to health professionals</li> </ul>
<ul style="list-style-type: none"> <li>Varying energy levels due to basal metabolic rate variation</li> </ul>	<ul style="list-style-type: none"> <li>Periods of activity</li> <li>Movement during learning</li> <li>Brain friendly snacks and water</li> </ul>
<ul style="list-style-type: none"> <li>Tire easily</li> </ul>	<ul style="list-style-type: none"> <li>Proper rest</li> <li>Adequate sleep</li> </ul>
<ul style="list-style-type: none"> <li>Variable but ravenous appetite / peculiar tastes</li> <li>Preference for 'junk' foods</li> </ul>	<ul style="list-style-type: none"> <li>An understanding of balanced nutrition</li> <li>A nutritious diet</li> <li>Access to nutritious (brain friendly) snack food</li> </ul>

### Psycho-emotional development of emerging adolescents

<u>Characteristics</u>	<u>Needs</u>
<ul style="list-style-type: none"> <li>Searching for personal identity</li> <li>In transition from Erikson's 'industry vs inferiority' to 'identity vs role confusion'</li> <li>Egocentric</li> </ul>	<ul style="list-style-type: none"> <li>Help to answer questions like: Who am I? What should I be? What should I do?</li> <li>To be 'culturally located'</li> <li>Supportive, positive climate</li> <li>Sense of accomplishment</li> <li>'Student voice'</li> <li>Worthwhile/authentic tasks</li> <li>Personalised learning               <ul style="list-style-type: none"> <li>What does this mean to/for 'me'?</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>Increasingly seek independence from adult authority</li> </ul>	<ul style="list-style-type: none"> <li>Advisors / role models other than parents</li> <li>Mentors</li> <li>Student voice</li> </ul>
<ul style="list-style-type: none"> <li>Fluctuating self worth</li> <li>Preoccupation with 'self'</li> <li>Focus on personal appearance</li> </ul>	<ul style="list-style-type: none"> <li>Resilience</li> <li>Positive messages / comments</li> <li>Personalised learning               <ul style="list-style-type: none"> <li>What does this mean to/for 'me'?</li> </ul> </li> </ul>

<ul style="list-style-type: none"> <li>• Concern regarding physical growth and maturity</li> <li>• Believe personal situations/experiences are unique to themselves</li> <li>• Sensitive to personal criticism</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of normality of variability</li> <li>• Formative assessment</li> <li>• Affirmation</li> <li>• Positive, formative behaviour management</li> </ul>
<ul style="list-style-type: none"> <li>• Increasingly concerned about peer acceptance /make constant comparisons</li> <li>• Sex role identification strengthens</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities to realise social, physical and cognitive roles / self exploration</li> <li>• Positive in their own identity</li> </ul>
<ul style="list-style-type: none"> <li>• Examine beliefs and allegiances</li> <li>• Develop personal values and opinions regarding major societal issues</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for authentic inquiry</li> <li>• Opportunities for exploration of concepts</li> </ul>

### Cognitive development of emergent adolescents

<u>Characteristics</u>	<u>Needs</u>
<ul style="list-style-type: none"> <li>• In transition between 'concrete' and 'formal operations'</li> <li>• Growing capacity for conceptualisation</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for 'concrete' learning</li> <li>• Increasing opportunities to experiment with the abstract and reflective reasoning of 'formal operations'</li> </ul>
<ul style="list-style-type: none"> <li>• Transition gradual and very diverse</li> </ul>	<ul style="list-style-type: none"> <li>• Recognition of individuality</li> </ul>
<ul style="list-style-type: none"> <li>• Varying development of 'multiple intelligences'</li> <li>• Inquisitive</li> </ul>	<ul style="list-style-type: none"> <li>• Individual assessment</li> <li>• Opportunities for authentic inquiry</li> <li>• Opportunities to test and develop multiple intelligences</li> </ul>
<ul style="list-style-type: none"> <li>• Prefer active learning experiences</li> <li>• Prefer peer interaction during learning experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Active learning</li> <li>• Co-operative learning</li> <li>• Movement during learning</li> </ul>
<ul style="list-style-type: none"> <li>• Growing ability to make reasoned moral and ethical choices</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for authentic inquiry</li> <li>• Opportunities for exploration of concepts</li> </ul>

### Social development of emerging adolescents

<u>Characteristics</u>	<u>Needs</u>
<ul style="list-style-type: none"> <li>• Decreasing parental affiliation / social influence</li> </ul>	<ul style="list-style-type: none"> <li>• Security and trust</li> <li>• Awareness of social development</li> </ul>
<ul style="list-style-type: none"> <li>• Increasing peer affiliation / social influence</li> </ul>	<ul style="list-style-type: none"> <li>• Group learning opportunities and 'buddy' systems</li> </ul>
<ul style="list-style-type: none"> <li>• Strong group conformity (e.g.: fads)</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities to belong</li> </ul>
<ul style="list-style-type: none"> <li>• Developing interpersonal skills</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities to develop and exercise interpersonal skills (relating to others)</li> </ul>

<ul style="list-style-type: none"> <li>• Constantly changing social interactions Growing acceptance of and interest in members of the opposite sex</li> <li>• Socially vulnerable / influenced by media</li> </ul>	<ul style="list-style-type: none"> <li>• Social skills learning (relating to others)</li> <li>• Safe opportunities for friendship and social interaction</li> <li>• Understanding of the influences of media</li> </ul>
<ul style="list-style-type: none"> <li>• May appear immature when social skill development lags behind physical and/or cognitive maturity</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptance and understanding</li> </ul>
<ul style="list-style-type: none"> <li>• May exhibit unusual or drastic behaviour</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities to 'show off'</li> </ul>
<ul style="list-style-type: none"> <li>• Attempt to identify with adults other than parents</li> </ul>	<ul style="list-style-type: none"> <li>• Positive adult role models with whom they can identify</li> <li>• Significant other adult (eg home room teacher)</li> </ul>
<ul style="list-style-type: none"> <li>• Desire, but also question, direction and regulation</li> </ul>	<ul style="list-style-type: none"> <li>• Security and structure alongside: <ul style="list-style-type: none"> <li>○ autonomy</li> <li>○ responsibility</li> <li>○ goals</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Idealistic / strong concern for social justice and the less fortunate</li> </ul>	<ul style="list-style-type: none"> <li>• Authentic inquiry</li> <li>• Service opportunities / community projects</li> </ul>

### Brain development of emerging adolescents

<i>Characteristics</i>	<i>Needs</i>
<ul style="list-style-type: none"> <li>• Oxygen and glucose are needed for brain cells to do their work (The brain uses 20% of the body's oxygen intake and 18% of the nutrients)</li> </ul>	<ul style="list-style-type: none"> <li>• Brain friendly foods - Protein foods rather than carbohydrates</li> <li>• Regular activity</li> </ul>
<ul style="list-style-type: none"> <li>• Survival and emotional data have higher priority for processing than learning concept-based curriculum.</li> </ul>	<ul style="list-style-type: none"> <li>• Students must feel physically safe and emotionally secure before they can focus on cognitive lesson objectives</li> </ul>
<ul style="list-style-type: none"> <li>• Working memory is a temporary memory with capacity and time limits.</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunity to clear working memory</li> </ul>
<ul style="list-style-type: none"> <li>• Information is more likely to get tagged for permanent storage if it makes sense and has meaning.</li> </ul>	<ul style="list-style-type: none"> <li>• Information presented in authentic contexts</li> <li>• Information presented so that it makes sense and has meaning</li> <li>• Personalised learning</li> </ul>
<ul style="list-style-type: none"> <li>• The self-concept has great influence over whether a person will get involved in a particular learning experience. in</li> </ul>	<ul style="list-style-type: none"> <li>• Learning activities that result in success and avoid those that end in failures</li> </ul>
<ul style="list-style-type: none"> <li>• The brain of today's student has developed in an environment filled with interactive as well as passive technology. It has become acclimated to novelty.</li> </ul>	<ul style="list-style-type: none"> <li>• Learning activities which are novel and/or incorporate novelty.</li> </ul>
<ul style="list-style-type: none"> <li>• The brain performs many functions simultaneously.</li> </ul>	<ul style="list-style-type: none"> <li>• A rich learning environment with a variety of stimuli</li> </ul>

<ul style="list-style-type: none"> <li>• Learning engages the entire physiology. Physical development, personal comfort, and emotional state affect the ability to learn</li> </ul>	<ul style="list-style-type: none"> <li>• Curriculum organization and learning activities that recognize that children mature at different rates chronological age may not reflect the student's readiness to learn</li> <li>• Good nutrition and healthy exercise</li> </ul>
<ul style="list-style-type: none"> <li>• The search for meaning is innate.</li> </ul>	<ul style="list-style-type: none"> <li>• Complex and meaningful challenges to engage the mind's natural curiosity</li> </ul>
<ul style="list-style-type: none"> <li>• The brain is designed to perceive and generate patterns</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise patterns and make connections</li> <li>• Real life learning experiences</li> </ul>
<ul style="list-style-type: none"> <li>• Emotions and cognition cannot be separated. Emotions can be crucial to the storage and recall of information</li> </ul>	<ul style="list-style-type: none"> <li>• Positive learning environment</li> <li>• Affirmation</li> <li>• High interest learning activities</li> <li>• Enthusiastic teachers</li> </ul>
<ul style="list-style-type: none"> <li>• Every brain simultaneously perceives and creates parts and wholes</li> </ul>	<ul style="list-style-type: none"> <li>• Information presented in context</li> <li>• Construction and de-construction of knowledge</li> <li>• Graphic organisers</li> </ul>
<ul style="list-style-type: none"> <li>• Learning involves both focused attention and peripheral perception</li> </ul>	<ul style="list-style-type: none"> <li>• Physical environment rich in relevant posters, graphic organisers, art etc</li> <li>• Enthusiastic teachers</li> </ul>
<ul style="list-style-type: none"> <li>• Learning always involves conscious and unconscious processes</li> </ul>	<ul style="list-style-type: none"> <li>• To make personal connections with learning</li> <li>• Tools for reflection and metacognition</li> <li>• Time for reflection and metacognition</li> </ul>
<ul style="list-style-type: none"> <li>• We have at least two types of memory: spatial, which registers our daily experience, and rote learning, which deals with facts and skills in isolation</li> </ul>	<ul style="list-style-type: none"> <li>• Link prior knowledge to new learning</li> <li>• Personalise learning</li> </ul>
<ul style="list-style-type: none"> <li>• The brain understands best when facts and skills are embedded in natural spatial memory</li> </ul>	<ul style="list-style-type: none"> <li>• Authentic, relevant, real life learning activities</li> </ul>
<ul style="list-style-type: none"> <li>• Learning is enhanced by challenge and inhibited by threat</li> </ul>	<ul style="list-style-type: none"> <li>• Positive student learning culture</li> <li>• Supportive classroom/school environment</li> <li>• Challenging, high-interest learning activities</li> </ul>
<ul style="list-style-type: none"> <li>• Each brain is unique. The brain's structure is actually changed by learning</li> </ul>	<ul style="list-style-type: none"> <li>• Recognition and development of learning styles and multiple intelligences</li> <li>• Variety of learning activities</li> </ul>
<ul style="list-style-type: none"> <li>• Sensory and physical activities are favoured over complex, cognitive-demanding activities</li> </ul>	<ul style="list-style-type: none"> <li>• Interactive learning activities</li> <li>• Activity during learning</li> <li>• Multi-media/multi-sensory experiences during learning</li> <li>• Graphic organisers to help guide and/or summarise thinking</li> </ul>
<ul style="list-style-type: none"> <li>• Activities with high excitement and low effort are preferred</li> </ul>	<ul style="list-style-type: none"> <li>• Activities which have high excitement but engage students in real effort</li> </ul>

<ul style="list-style-type: none"> <li>• Heightened interest in novel stimuli; greater risk taking (particularly in groups)</li> </ul>	<ul style="list-style-type: none"> <li>• Make informed choices about high risk behaviours</li> <li>• <a href="#">‘Harm minimisation’</a></li> </ul>
<ul style="list-style-type: none"> <li>• A propensity toward risky, impulsive behaviours and the group setting may promote risk taking</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of risks involved in behaviours such as drug use, alcohol use, driving fast cars...</li> <li>• Co-operative learning opportunities</li> </ul>
<ul style="list-style-type: none"> <li>• Poor modulation of emotions (hot emotions more common than cold emotions)</li> </ul>	<ul style="list-style-type: none"> <li>• A physically safe and emotionally secure classroom/school environment</li> <li>• Learning activities that result in success and avoid those that end in failures</li> </ul>
<ul style="list-style-type: none"> <li>• Poor planning and judgment</li> </ul>	<ul style="list-style-type: none"> <li>• Organisational and time management skills</li> <li>• Goal setting</li> </ul>
<ul style="list-style-type: none"> <li>• Less capacity for good judgment and weighing consequences</li> </ul>	<ul style="list-style-type: none"> <li>• Learning activities which require making judgements and weighing consequences</li> </ul>

(Alexander et al 1968; Comack 1991; Hunt et al 1998; Manning 1993; National Middle Schools Association 1995; Wiles & Bondi 1993)  
Caine, R.N., Caine, G. (October 1990). Understanding a Brain Based Approach to Learning and Teaching. Educational Leadership 48, 2, 66-70.

## ***What implications does our knowledge about the characteristics and needs of the emerging adolescent learner have for learning and teaching?***

Let us examine therefore the implications of the characteristics and needs of emerging adolescents, listed above, for learning and teaching.

### **Physical development of emerging adolescents**

<i>Characteristics</i>	<i>Needs</i>	<i>Implications for Learning and Teaching</i>
<ul style="list-style-type: none"> <li>Accelerated growth (onset in girls 10- 11, boys 11 – 12)</li> <li>Variable growth rates</li> <li>Variable degrees of co-ordination</li> </ul>	<ul style="list-style-type: none"> <li>Challenging regular physical exercise</li> </ul>	<ul style="list-style-type: none"> <li>Provide challenging regular / daily exercise through physical activities that:               <ul style="list-style-type: none"> <li>allow for variability of size and strength</li> <li>build co-ordination</li> <li>avoid intense age-group competitiveness</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>Onset of puberty</li> <li>Development of primary and secondary sex characteristics</li> </ul>	<ul style="list-style-type: none"> <li>To be able to understand physical changes:               <ul style="list-style-type: none"> <li>self acceptance</li> <li>self understanding</li> </ul> </li> <li>Access to health / guidance professionals</li> </ul>	<ul style="list-style-type: none"> <li>A Health and Well Being programme that focus on and ‘explores’ the changes during puberty, body image, sexuality etc taught using <a href="#">co-operative learning techniques</a> which provide social interaction</li> <li>The programme must be taught in an emotionally safe and supportive environment and emphasise the normality of the changes and the varied rates of change</li> <li>Provide easy access to health / guidance professionals</li> </ul>
<ul style="list-style-type: none"> <li>Hormonal imbalances (may cause acne, allergies, eye problems, emotional variation)</li> </ul>	<ul style="list-style-type: none"> <li>An understanding of health and hygiene</li> <li>Access to health professionals</li> </ul>	<ul style="list-style-type: none"> <li>A Health and Well Being programme that <a href="#">‘personalises’</a> the importance of health and hygiene</li> <li>Provide easy access to health professionals for those students experiencing health related problems</li> </ul>

<ul style="list-style-type: none"> <li>• Varying energy levels due to basal metabolic rate variation</li> </ul>	<ul style="list-style-type: none"> <li>• Periods of activity</li> <li>• Movement during learning</li> <li>• Brain friendly snacks and water</li> </ul>	<ul style="list-style-type: none"> <li>• Include activity/ movement in learning activities</li> <li>• Flexible organisation and structures which provide for movement during learning</li> <li>• Provide ‘energisers’ - physical activity after about 20 minutes of sedentary activity</li> <li>• Provide access to water and brain friendly snacks eg protein bars</li> <li>• Timetabling that maximises the high energy times</li> </ul>
<ul style="list-style-type: none"> <li>• Tire easily</li> </ul>	<ul style="list-style-type: none"> <li>• Proper rest</li> <li>• Adequate sleep</li> </ul>	<ul style="list-style-type: none"> <li>• A Health and Well Being programme that <a href="#">‘personalises’</a> the importance of adequate sleep</li> <li>• Awareness by teachers of when energy levels wane and a preparedness to structure programmes to accommodate this</li> <li>• Provide ‘energisers’ - physical activity after about 20 minutes of sedentary activity</li> <li>• Provide access to water and brain friendly snacks eg protein bars</li> <li>• Provide time for ‘reflection’.</li> </ul>
<ul style="list-style-type: none"> <li>• Variable but ravenous appetite / peculiar tastes</li> <li>• Preference for ‘junk’ foods</li> </ul>	<ul style="list-style-type: none"> <li>• An understanding of balanced nutrition</li> <li>• A nutritious diet</li> <li>• Access to nutritious (brain friendly) snack food</li> </ul>	<ul style="list-style-type: none"> <li>• A Health and Well Being programme that <a href="#">‘personalises’</a> the importance of nutrition</li> <li>• Provide access to water and brain friendly snacks eg protein bars</li> </ul>

## Psycho-emotional development of emerging adolescents

<u>Characteristics</u>	<u>Needs</u>	<u>Implications for Learning and Teaching</u>
<ul style="list-style-type: none"> <li>• Searching for personal identity</li> <li>• In transition from Erikson's 'industry vs inferiority' to 'identity vs role confusion'</li> <li>• Egocentric</li> </ul>	<ul style="list-style-type: none"> <li>• Help to answer questions like: Who am I? What should I be? What should I do?</li> <li>• To be <u>'culturally located'</u></li> <li>• Supportive, positive climate</li> <li>• Sense of accomplishment</li> <li>• <u>'Student voice'</u></li> <li>• Worthwhile/<u>authentic</u> tasks</li> <li>• <u>Personalised learning</u> <ul style="list-style-type: none"> <li>○ What does this mean to/for 'me'?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Provide a physically safe and emotionally secure classroom/school environment</li> <li>• Develop a positive, supporting and affirming student culture that does not tolerate 'put-downs'</li> <li>• Classrooms are places where learners can bring "who they are" to the learning interactions in complete safety, and their knowledge's are 'acceptable' and 'legitimate'</li> <li>• Provide opportunities for <u>'student voice'</u> - meaningful opportunities for: <ul style="list-style-type: none"> <li>○ decision making,</li> <li>○ responsibility</li> <li>○ concept exploration</li> </ul> </li> <li>• Provide <u>'differentiated'</u> learning activities that result in success and avoid those that end in failures</li> <li>• Celebrate success and achievement</li> <li>• Personalise learning - Structure the curriculum to focus on worthwhile and <u>'authentic learning'</u> tasks that are relevant to the emerging adolescent, have clear purpose, and allow him/her to make personal meaning from the learning.</li> </ul>
<ul style="list-style-type: none"> <li>• Increasingly seek independence from adult authority</li> </ul>	<ul style="list-style-type: none"> <li>• Advisors / role models other than parents</li> <li>• Mentors</li> <li>• <u>Student voice</u></li> </ul>	<ul style="list-style-type: none"> <li>• An <u>'Advisory'</u> programme</li> <li>• Teachers must 'connect' with each student and develop a positive, supporting and affirming student culture that does not tolerate 'put-downs'</li> <li>• Provide easy access to health and other</li> </ul>



		professionals – eg guidance counsellor, social worker, public health nurse <ul style="list-style-type: none"> <li>• Provide meaningful opportunities for decision making and exploration</li> </ul>
<ul style="list-style-type: none"> <li>• Fluctuating self worth</li> <li>• Preoccupation with 'self'</li> <li>• Focus on personal appearance</li> </ul>	<ul style="list-style-type: none"> <li>• Resilience</li> <li>• Positive messages / comments</li> <li>• <a href="#">Personalised learning</a> <ul style="list-style-type: none"> <li>○ What does this mean to/for 'me'?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Plan always with the characteristics and needs of emerging adolescents as the central focus</li> <li>• Provide learning activities that result in success and avoid those that end in failures</li> <li>• Celebrate success and achievement</li> <li>• Structure the curriculum to focus on worthwhile and '<a href="#">authentic learning</a>' tasks that are relevant to the emerging adolescent, have clear purpose, and allow him/her to make personal meaning from the learning</li> <li>• Include 'body image' as an aspect of the Health and Well Being programme</li> </ul>
<ul style="list-style-type: none"> <li>• Concern regarding physical growth and maturity</li> <li>• Believe personal situations/experiences are unique to themselves</li> <li>• Sensitive to personal criticism</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of normality of variability</li> <li>• Formative assessment</li> <li>• Affirmation</li> <li>• Positive, formative behaviour management</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a physically safe and emotionally secure classroom/school environment</li> <li>• Develop a positive, supporting and affirming student culture that does not tolerate 'put-downs'</li> <li>• A Health and Well Being programme that focus on and 'explores' the changes during puberty, body image, sexuality etc taught using <a href="#">co-operative learning</a> techniques which provide social interaction. The programme emphasise the normality of the changes and the varied rates of change</li> <li>• Provide <a href="#">differentiated learning</a> activities that result in success and avoid those that end in failures</li> <li>• Celebrate success and achievement</li> </ul>

		<ul style="list-style-type: none"> <li>• A behaviour management plan (critically linked to the development of a positive affirming student culture) that sets clear negotiated limits and boundaries that are flexible enough to allow for students to ‘make mistakes’ and learn from these mistakes.</li> </ul>
<ul style="list-style-type: none"> <li>• Increasingly concerned about peer acceptance /make constant comparisons</li> <li>• Sex role identification strengthens</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities to realise social, physical and cognitive roles / self exploration</li> <li>• Positive in their own identity</li> </ul>	<ul style="list-style-type: none"> <li>• Programmes and activities that allow the students to discover and/or explore what they are interested in and/or good at. Examples might include: <ul style="list-style-type: none"> <li>○ Academic: - science club, debating</li> <li>○ Cultural: - orchestra, choir, drama, dance</li> <li>○ Physical:- sports teams, orienteering, canoe polo team</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Examine beliefs and allegiances</li> <li>• Develop personal values and opinions regarding major societal issues</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for <a href="#">authentic inquiry</a></li> <li>• Opportunities for exploration of concepts</li> </ul>	<ul style="list-style-type: none"> <li>• An ‘<a href="#">Advisory</a>’ programme</li> <li>• A curriculum that is ‘concerned with the here and now’ of emerging adolescents lives</li> <li>• An <a href="#">inquiry-based</a> curriculum that involves ‘<a href="#">authentic</a>’ inquiry about needs and issues relevant to the emerging adolescent –their personal world and their ‘world view’.</li> </ul>

## Cognitive development of emergent adolescents

<u>Characteristics</u>	<u>Needs</u>	<u>Implications for Learning and Teaching</u>
<ul style="list-style-type: none"> <li>• In transition between 'concrete' and 'formal operations'</li> <li>• Growing capacity for conceptualisation</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for 'concrete' learning</li> <li>• Increasing opportunities to experiment with the abstract and reflective reasoning of 'formal operations'</li> </ul>	<ul style="list-style-type: none"> <li>• Interdisciplinary teaching and learning activities which provide opportunity for 'hands-on' work as well as challenge students to 'higher-order' thinking and processing.</li> <li>• Challenging, authentic inquiries that require students to synthesise, analyse, evaluate and conceptualise.</li> </ul>
<ul style="list-style-type: none"> <li>• Transition gradual and very diverse</li> </ul>	<ul style="list-style-type: none"> <li>• Recognition of individuality</li> </ul>	<ul style="list-style-type: none"> <li>• Challenging, <a href="#">differentiated</a> curriculum/learning activities and assessment which recognise the different and developing learning styles/multiple intelligences of the emerging adolescent students</li> <li>• Formative assessment which recognises the different and developing abilities, learning styles and multiple intelligences of the emerging adolescent students</li> </ul>
<ul style="list-style-type: none"> <li>• Varying development of 'multiple intelligences'</li> <li>• Inquisitive</li> </ul>	<ul style="list-style-type: none"> <li>• Individual assessment</li> <li>• Opportunities for authentic inquiry</li> <li>• Opportunities to test and develop multiple intelligences</li> </ul>	<ul style="list-style-type: none"> <li>• Challenging, <a href="#">differentiated</a>, <a href="#">authentic inquiry-based</a> curriculum/learning activities which recognise the different and developing learning styles/multiple intelligences of the emerging adolescent students</li> <li>• Formative assessment which recognises the different and developing abilities, learning styles and multiple intelligences of the emerging adolescent students</li> </ul>
<ul style="list-style-type: none"> <li>• Prefer active learning experiences</li> <li>• Prefer peer interaction during learning experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Active learning</li> <li>• Co-operative learning</li> <li>• Movement during learning</li> </ul>	<ul style="list-style-type: none"> <li>• Teaching approaches and learning activities which involve flexible groupings of students working '<a href="#">co-operatively</a>' and</li> </ul>

		<p><a href="#">‘collaboratively’</a> to solve problems or explore issues inside and outside the classroom/school.</p> <ul style="list-style-type: none"> <li>• Teaching approaches and learning activities which result in ‘learning products’ which cover a range of learning styles/multiple intelligences. These products could include: art, drama, dance, debates, multimedia or web-based artefacts...</li> <li>• Flexible organisation and structures which provide for movement during learning</li> <li>• Physical activity after about 20 minutes of sedentary activity</li> </ul>
<ul style="list-style-type: none"> <li>• Growing ability to make reasoned moral and ethical choices</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for <a href="#">authentic inquiry</a></li> <li>• Opportunities for exploration of concepts</li> </ul>	<ul style="list-style-type: none"> <li>• An <a href="#">inquiry-based curriculum</a> that is ‘concerned with the here and now’ of emerging adolescents lives</li> <li>• A curriculum that involves <a href="#">authentic inquiry</a> about needs and issues relevant to the emerging adolescent –their personal world and their ‘world view’.</li> </ul>

## Social development of emerging adolescents

<u>Characteristics</u>	<u>Needs</u>	<u>Implications for Learning and Teaching</u>
<ul style="list-style-type: none"> <li>Decreasing parental affiliation / social influence</li> </ul>	<ul style="list-style-type: none"> <li>Security and trust</li> <li>Awareness of social development</li> </ul>	<ul style="list-style-type: none"> <li>Provide a physically safe and emotionally secure classroom/school environment</li> <li>Teachers must ‘connect’ with each student and develop a positive, supporting and affirming student culture that does not tolerate ‘put-downs’</li> <li>A behaviour management plan (critically linked to the development of a positive affirming student culture) that sets clear negotiated limits and boundaries that are flexible enough to allow for students to ‘make mistakes’ and learn from these mistakes</li> <li>An ‘<a href="#">Advisory</a>’ programme and/or Health and Well Being programme which explores the dangers of risk taking behaviours including alcohol, drug use, sex</li> <li>Provide easy access to health and other professionals – eg guidance counsellor, social worker, public health nurse</li> <li>Provide meaningful opportunities for decision making and exploration</li> <li>Involve families in the education of the students by not only keeping them informed of student progress but by giving them meaningful roles in the schooling process</li> </ul>
<ul style="list-style-type: none"> <li>Increasing peer affiliation / social influence</li> </ul>	<ul style="list-style-type: none"> <li>Group learning opportunities and 'buddy' systems</li> </ul>	<ul style="list-style-type: none"> <li>Teaching approaches and learning activities which involve flexible groupings of students working ‘<a href="#">co-operatively</a>’ and</li> </ul>

		<p><a href="#">‘collaboratively’</a> to solve problems or explore issues inside and outside the classroom/school.</p> <ul style="list-style-type: none"> <li>• Programmes and activities that allow the students to discover and/or explore ‘together’ what they are interested in and/or good at. Examples might include: <ul style="list-style-type: none"> <li>○ Academic: - science club, debating</li> <li>○ Cultural: - orchestra, choir, drama, dance</li> <li>○ Physical:- sports teams, orienteering, canoe polo team</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Strong group conformity (e.g.: fads)</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities to belong</li> </ul>	<ul style="list-style-type: none"> <li>• Develop strong class/group spirit (difficult to achieve if students are regrouped for each subject)</li> <li>• Develop small teaching teams/syndicates and/or houses with whom students can identify</li> <li>• Programmes and activities that allow the students to discover and/or explore ‘together’ what they are interested in and/or good at. Examples might include: <ul style="list-style-type: none"> <li>○ Academic: - science club, debating</li> <li>○ Cultural: - orchestra, choir, drama, dance</li> <li>○ Physical:- sports teams, orienteering, canoe polo team...</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Developing interpersonal skills</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities to develop and exercise interpersonal skills (relating to others)</li> </ul>	<ul style="list-style-type: none"> <li>• Learning activities which provide opportunities for students to develop and exercise interpersonal skills. For example debating, drama</li> </ul>
<ul style="list-style-type: none"> <li>• Constantly changing social interactions</li> <li>• Growing acceptance of and interest in members of the opposite sex</li> </ul>	<ul style="list-style-type: none"> <li>• Social skills learning (relating to others)</li> <li>• Safe opportunities for friendship and social interaction</li> </ul>	<ul style="list-style-type: none"> <li>• An <a href="#">‘Advisory’</a> programme and/or Health and Well Being programme which explores the influences of the media on risk taking</li> </ul>

<ul style="list-style-type: none"> <li>• Socially vulnerable / influenced by media</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of the influences of media</li> </ul>	<ul style="list-style-type: none"> <li>behaviours including alcohol, drug use, sex</li> <li>• Programmes and activities that allow the students to discover and/or explore ‘together’ what they are interested in and/or good at. Examples might include: <ul style="list-style-type: none"> <li>○ Academic: - science club, debating</li> <li>○ Cultural: - orchestra, choir, drama, dance</li> <li>○ Physical:- sports teams, orienteering, canoe polo team...</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• May appear immature when social skill development lags behind physical and/or cognitive maturity</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptance and understanding</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers’ set realistic expectations of students which demonstrate an understanding and acceptance that, for at least some emerging adolescents, social skill development may lag behind physical and/or cognitive maturity</li> <li>• A behaviour management plan (critically linked to the development of a positive affirming student culture) that sets clear negotiated limits and boundaries but is flexible enough to allow for students to ‘make mistakes’ and learn from these mistakes.</li> </ul>
<ul style="list-style-type: none"> <li>• May exhibit unusual or drastic behaviour</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities to 'show off'</li> </ul>	<ul style="list-style-type: none"> <li>• Learning activities which provide opportunities to 'show off' productively (e.g.:debates, role plays)</li> </ul>
<ul style="list-style-type: none"> <li>• Attempt to identify with adults other than parents</li> </ul>	<ul style="list-style-type: none"> <li>• Positive adult role models with whom they can identify</li> <li>• Significant other adult (eg home room teacher)</li> </ul>	<ul style="list-style-type: none"> <li>• An <a href="#">‘Advisory’</a> programme</li> <li>• Teachers must ‘connect’ with each student and develop a positive, supporting and affirming student culture that does not tolerate ‘put-downs’</li> <li>• Provide easy access to health and other professionals – eg guidance counsellor, social worker, public health nurse</li> </ul>

		<ul style="list-style-type: none"> <li>• Provide meaningful opportunities for decision making and exploration</li> </ul>
<ul style="list-style-type: none"> <li>• Desire, but also question, direction and regulation</li> </ul>	<ul style="list-style-type: none"> <li>• Security and structure alongside: <ul style="list-style-type: none"> <li>○ autonomy</li> <li>○ responsibility</li> <li>○ goals</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• A behaviour management plan (critically linked to the development of a positive affirming student culture) that sets clear negotiated limits and boundaries but is flexible enough to allow for students to ‘make mistakes’ and learn from these mistakes.</li> <li>• Provide opportunities for ‘<a href="#">student voice</a>’ - meaningful opportunities for: <ul style="list-style-type: none"> <li>○ decision making,</li> <li>○ responsibility</li> <li>○ concept exploration</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Idealistic / strong concern for social justice and the less fortunate</li> </ul>	<ul style="list-style-type: none"> <li>• Authentic inquiry</li> <li>• Service opportunities / community projects</li> </ul>	<ul style="list-style-type: none"> <li>• An <a href="#">inquiry-based</a> curriculum that is ‘concerned with the here and now’ of emerging adolescents lives</li> <li>• A curriculum that involves <a href="#">authentic</a> inquiry about needs and issues relevant to the emerging adolescent –their personal world and their ‘world view’. This may include community projects or service opportunities</li> </ul>



## Brain development of emerging adolescents

<i>Characteristics</i>	<i>Needs</i>	<i>Implications for Learning and Teaching</i>
<ul style="list-style-type: none"> <li>Oxygen and glucose are needed for brain cells to do their work (The brain uses 20% of the body's oxygen intake and 18% of the nutrients)</li> </ul>	<ul style="list-style-type: none"> <li>Brain friendly foods - Protein foods rather than carbohydrates</li> <li>Regular activity</li> </ul>	<ul style="list-style-type: none"> <li>Availability of brain friendly foods</li> <li>Teachers should provide for activity during learning;</li> </ul>
<ul style="list-style-type: none"> <li>Survival and emotional data have higher priority for processing than learning concept-based curriculum.</li> </ul>	<ul style="list-style-type: none"> <li>Students must feel physically safe and emotionally secure before they can focus on cognitive lesson objectives</li> </ul>	<ul style="list-style-type: none"> <li>Provide a physically safe and emotionally secure classroom/school environment</li> </ul>
<ul style="list-style-type: none"> <li>Working memory is a temporary memory with capacity and time limits.</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity to clear working memory</li> </ul>	<ul style="list-style-type: none"> <li>Teachers need to remember these limits when planning and presenting lessons</li> </ul>
<ul style="list-style-type: none"> <li>Information is more likely to get tagged for permanent storage if it makes sense and has meaning.</li> </ul>	<ul style="list-style-type: none"> <li>Information presented in authentic contexts</li> <li>Information presented so that it makes sense and has meaning</li> <li>Personalised learning</li> </ul>	<ul style="list-style-type: none"> <li>Interdisciplinary curriculum design</li> <li>Teachers must not only help students make sense of the lesson material but need to help students find meaning in. (Traditionally we have been better at the former than the later). Learning needs to be personalized.</li> </ul>
<ul style="list-style-type: none"> <li>The self-concept has great influence over whether a person will get involved in a particular learning experience. in</li> </ul>	<ul style="list-style-type: none"> <li>Learning activities that result in success and avoid those that end in failures</li> </ul>	<ul style="list-style-type: none"> <li>Provide learning activities that result in success and avoid those that end in failures</li> </ul>
<ul style="list-style-type: none"> <li>The brain of today's student has developed in an environment filled with interactive as well as passive technology. It has become acclimated to novelty.</li> </ul>	<ul style="list-style-type: none"> <li>Learning activities which are novel and/or incorporate novelty.</li> </ul>	<ul style="list-style-type: none"> <li>Educators need to consider ways in which they can include novelty as part of the learning approaches that are used in school.</li> </ul>
<ul style="list-style-type: none"> <li>The brain performs many functions simultaneously.</li> </ul>	<ul style="list-style-type: none"> <li>A rich learning environment with a variety of stimuli</li> </ul>	<ul style="list-style-type: none"> <li>Present content through a variety of teaching strategies, such as physical activities, individual learning times, group interactions, artistic variations, and musical interpretations to help orchestrate student experiences</li> </ul>
<ul style="list-style-type: none"> <li>Learning engages the entire physiology. Physical development, personal comfort, and emotional state affect the ability to learn</li> </ul>	<ul style="list-style-type: none"> <li>Curriculum organization and learning activities that recognize that children mature at different rates chronological age may not reflect the student's readiness to learn</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Differentiated curriculum</a> and/or learning activities.</li> <li>Incorporate facets of health (stress management, nutrition, exercise) into the</li> </ul>

	<ul style="list-style-type: none"> <li>• Good nutrition and healthy exercise</li> </ul>	learning process
<ul style="list-style-type: none"> <li>• The search for meaning is innate.</li> </ul>	<ul style="list-style-type: none"> <li>• Complex and meaningful challenges to engage the mind's natural curiosity</li> </ul>	<ul style="list-style-type: none"> <li>• Strive to present lessons and activities that arouse the mind's search for meaning</li> </ul>
<ul style="list-style-type: none"> <li>• The brain is designed to perceive and generate patterns</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise patterns and make connections</li> <li>• Real life learning experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Present information in context (real life science, thematic instruction) so the learner can identify patterns and connect with previous experiences</li> </ul>
<ul style="list-style-type: none"> <li>• Emotions and cognition cannot be separated. Emotions can be crucial to the storage and recall of information</li> </ul>	<ul style="list-style-type: none"> <li>• Positive learning environment</li> <li>• Affirmation</li> <li>• High interest learning activities</li> <li>• Enthusiastic teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Help build a classroom environment that promotes positive attitudes among students and teachers and about their work.</li> <li>• Encourage students to be aware of their feelings and how the emotional climate affects their learning.</li> </ul>
<ul style="list-style-type: none"> <li>• Every brain simultaneously perceives and creates parts and wholes</li> </ul>	<ul style="list-style-type: none"> <li>• Information presented in context</li> <li>• Construction and de-construction of knowledge</li> <li>• Graphic organisers</li> </ul>	<ul style="list-style-type: none"> <li>• Try to avoid isolating information from its context. This isolation makes learning more difficult.</li> <li>• Design activities that require full brain interaction and communication</li> <li>• Explicit connections are made between key ideas.</li> </ul>
<ul style="list-style-type: none"> <li>• Learning involves both focused attention and peripheral perception</li> </ul>	<ul style="list-style-type: none"> <li>• Physical environment rich in relevant posters, graphic organisers, art etc</li> <li>• Enthusiastic teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Place materials (posters, art, bulletin boards, music) outside the learner's immediate focus to influence learning.</li> <li>• Be aware that the teacher's enthusiasm, modelling, and coaching present important signals about the value of what is being learned.</li> </ul>
<ul style="list-style-type: none"> <li>• Learning always involves conscious and unconscious processes</li> </ul>	<ul style="list-style-type: none"> <li>• To make personal connections with learning</li> <li>• Tools for reflection and <a href="#">metacognition</a></li> <li>• Time for reflection and <a href="#">metacognition</a></li> </ul>	<ul style="list-style-type: none"> <li>• Use "hooks" or other motivational techniques to encourage personal connections.</li> <li>• Encourage "active processing" through reflection and <a href="#">metacognition</a> to help students consciously review their learning.</li> </ul>

<ul style="list-style-type: none"> <li>We have at least two types of memory: spatial, which registers our daily experience, and rote learning, which deals with facts and skills in isolation</li> </ul>	<ul style="list-style-type: none"> <li>Link prior knowledge to new learning</li> <li>Personalise learning</li> </ul>	<ul style="list-style-type: none"> <li>Separating information and skills from prior experience forces the learner to depend on rote memory.</li> <li>Try to avoid an emphasis on rote learning; it ignores the learner's personal side and probably interferes with subsequent development of understanding.</li> </ul>
<ul style="list-style-type: none"> <li>The brain understands best when facts and skills are embedded in natural spatial memory</li> </ul>	<ul style="list-style-type: none"> <li>Authentic, relevant, real life learning activities</li> </ul>	<ul style="list-style-type: none"> <li>Use techniques that create or mimic real world experiences and use varied senses. Examples include demonstrations, projects, metaphor, and integration of content areas that embed ideas in genuine experience.</li> </ul>
<ul style="list-style-type: none"> <li>Learning is enhanced by challenge and inhibited by threat</li> </ul>	<ul style="list-style-type: none"> <li>Positive student learning culture</li> <li>Supportive classroom/school environment</li> <li>Challenging, high-interest learning activities</li> </ul>	<ul style="list-style-type: none"> <li>Try to create an atmosphere of "relaxed alertness" that is low in threat and high in challenge</li> </ul>
<ul style="list-style-type: none"> <li>Each brain is unique. The brain's structure is actually changed by learning</li> </ul>	<ul style="list-style-type: none"> <li>Recognition and development of learning styles and multiple intelligences</li> <li>Variety of learning activities</li> </ul>	<ul style="list-style-type: none"> <li>Use multifaceted teaching strategies to attract individual interests and let students express their auditory, visual, tactile, or emotional preferences</li> </ul>
<ul style="list-style-type: none"> <li>Sensory and physical activities are favoured over complex, cognitive-demanding activities</li> </ul>	<ul style="list-style-type: none"> <li>Interactive learning activities</li> <li>Activity during learning</li> <li>Multi-media/multi-sensory experiences during learning</li> <li>Graphic organisers to help guide and/or summarise thinking</li> </ul>	<ul style="list-style-type: none"> <li>Present content through a variety of teaching strategies, such as physical activities, individual learning times, group interactions, artistic variations, and musical interpretations to help orchestrate student experiences</li> </ul>
<ul style="list-style-type: none"> <li>Activities with high excitement and low effort are preferred</li> </ul>	<ul style="list-style-type: none"> <li>Activities which have high excitement but engage students in real effort</li> </ul>	<ul style="list-style-type: none"> <li>Plan and provide learning activities which are exciting but demand academic rigour</li> </ul>
<ul style="list-style-type: none"> <li>Heightened interest in novel stimuli; greater risk taking (particularly in groups)</li> </ul>	<ul style="list-style-type: none"> <li>Make informed choices about high risk behaviours</li> <li><a href="#">‘Harm minimisation’</a></li> </ul>	<ul style="list-style-type: none"> <li>An <a href="#">‘Advisory’</a> programme and/or Health and Well Being programme which explores the dangers of risk taking behaviours including alcohol, drug use, sex</li> </ul>
<ul style="list-style-type: none"> <li>A propensity toward risky, impulsive behaviours and the group setting may</li> </ul>	<ul style="list-style-type: none"> <li>Understanding of risks involved in behaviours such as drug use, alcohol use,</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Co-operative learning</a> activities which explore the consequences of drug and alcohol</li> </ul>

promote risk taking	driving fast cars... • Co-operative learning opportunities	use, driving fast cars and other risky behaviours
• Poor modulation of emotions (hot emotions more common than cold emotions)	• a physically safe and emotionally secure classroom/school environment • learning activities that result in success and avoid those that end in failures	• Provide a physically safe and emotionally secure classroom/school environment • Provide learning activities that result in success and avoid those that end in failures
• Poor planning and judgment	• Organisational and time management skills • Goal setting	• Develop practises and aides to help students set goals, plan and organise their time, meet deadlines etc. • Provide frequent 'gentle' reminders
• Less capacity for good judgment and weighing consequences	• Learning activities which require making judgements and weighing consequences	• A challenging <a href="#">inquiry-based</a> curriculum that requires students to think critically, synthesise, analyse, evaluate and conceptualise.

Adapted from:

(Alexander et al 1968; Comack 1991; Hunt et al 1998; Manning 1993; National Middle Schools Association 1995; Wiles & Bondi 1993)  
Caine, R.N., Caine, G. (October 1990). Understanding a Brain Based Approach to Learning and Teaching. *Educational Leadership* 48, 2, 66-70.

### ***What then are the principles of Middle Schooling?***

Just like the characteristics and needs of emerging adolescents the implications for learning and teaching are inter-related and in many instances interdependent. This intersection or overlap highlights the essential elements for meeting the characteristics and needs of emerging adolescents. From them we can define the following principles of 'middle schooling':

- **Beliefs and understanding** that put the emerging adolescent at the centre.
- **Environment and relationships** that create an inclusive and caring atmosphere of trust and belonging, active engagement where learning is valued, communication skills fostered, and co-operative and collaborative efforts encouraged.
- **Curriculum design / approach** that focuses on 'learning to learn' and 'learning to think'.
- **Curriculum content** that is 'concerned with the here and now' of emerging adolescents' lives.
- **Pedagogy** that is responsive to the characteristics and needs of emerging adolescents.
- **Student voice** that is listened to and acted on.
- **Organisation and structures** that are responsive to the characteristics and needs of emerging adolescents; that encourage not impede the principles above.

## What then are the principles and practices of Middle Schooling?

Principles	Practices
<p><b>Beliefs and understandings...</b></p> <p>that put the emerging adolescent at the centre.</p>	<ul style="list-style-type: none"> <li>• A philosophy based on the unique characteristics and needs of emerging adolescents;</li> <li>• Boards of Trustees, Principals and Senior Management who are knowledgeable about and committed to middle-school philosophy, programs and practices;</li> <li>• Educators knowledgeable about and committed to teaching emerging adolescents.</li> </ul>
<p><b>Environment and Relationships...</b></p> <p>that create an inclusive and caring atmosphere of trust and belonging, active engagement where learning is valued, communication skills fostered, and co-operative and collaborative efforts encouraged.</p>	<ul style="list-style-type: none"> <li>• There is physically safe and emotionally secure classroom/school environment;</li> <li>• Classrooms are places where learners can bring “who they are” to the learning interactions in complete safety, and their knowledge’s are ‘acceptable’ and ‘legitimate’;</li> <li>• The classroom environment promotes positive attitudes among students and teachers and about their work;</li> <li>• There is a positive, supporting and affirming student culture that does not tolerate ‘put-downs’;</li> <li>• There is strong class/group spirit (difficult to achieve if students are regrouped for each subject);</li> <li>• Students are aware of their feelings and how the emotional climate affects their learning;</li> <li>• There is an atmosphere of "relaxed alertness" that is low in threat and high in challenge;</li> <li>• Success and achievement are celebrated;</li> <li>• Teachers are committed to working with emerging adolescents and ‘connect’ with each student - they have a thorough knowledge of the students they teach including: <ul style="list-style-type: none"> <li>○ knowledge of students’ social and cultural contexts,</li> <li>○ their preferred ways of learning,</li> <li>○ the skills they know and use, and</li> <li>○ how confident they feel about learning.</li> </ul> </li> <li>• Teachers exhibit care and respect for their students.</li> <li>• There are small teaching teams/syndicates and/or houses with whom students can identify;</li> <li>• There are opportunities for ‘<a href="#">student voice</a>’ - meaningful opportunities for: <ul style="list-style-type: none"> <li>○ decision making;</li> <li>○ responsibility;</li> <li>○ concept exploration;</li> </ul> </li> <li>• The behaviour management plan (critically linked to the development of a positive affirming student culture) sets clear negotiated limits and boundaries but is flexible enough to allow for students to ‘make mistakes’ and learn from these mistakes;</li> <li>• There is comprehensive pastoral care - for each student there is: <ul style="list-style-type: none"> <li>○ at least one teacher who ‘knows’ the students and can ‘connect’ with and ‘advocate’ for him/her ;</li> <li>○ An Advisory Programme;</li> <li>○ Access to health and guidance/counselling professionals.</li> </ul> </li> </ul>

<p><b>Curriculum design / approach...</b></p> <p>that focuses on 'learning to learn' and 'learning to think'.</p>	<ul style="list-style-type: none"> <li>• <b>'Integrative'</b> - involving <b>'authentic'</b> topics/themes/questions about needs and issues relevant to the emerging adolescent – their 'personal world' and their 'world view'. (This may include community projects or service opportunities);</li> <li>• <b>'Inquiry-based'</b> – using fertile questions;</li> <li>• <b>'Differentiated'</b> - recognising the different and developing learning styles/multiple intelligences of the emerging adolescent students;</li> <li>• Challenges students to 'higher-order' thinking and processing - require students to synthesise, analyse, evaluate, conceptualise and create;</li> <li>• <b>'Personalises'</b> learning - involving <b>'authentic learning'</b> tasks that are relevant to the emerging adolescent, have clear purpose, and allow him/her to make personal meaning from the learning;</li> <li>• 'Interactive' and provides opportunity for 'hands-on' work</li> <li>• <b>'Co-operative'</b>;</li> <li>• 'Negotiated' – providing for 'student voice' at all stages: <ul style="list-style-type: none"> <li>○ Inquiry theme/topic selection,</li> <li>○ Posing the fertile questions,</li> <li>○ Planning the inquiry,</li> <li>○ Assessment,</li> <li>○ Evaluation;</li> </ul> </li> <li>• Planned and taught by a home room teacher or 'interdisciplinary team';</li> <li>• Uses 'formative assessment' which recognises the different and developing abilities, learning styles and multiple intelligences of the emerging adolescent students: <ul style="list-style-type: none"> <li>○ Clearly identifies and prioritised learning outcomes;</li> <li>○ Students understand the outcomes and know why they are important;</li> <li>○ Students are actively involved in the process – eg rubric creation, self-assessment...</li> <li>○ Involves authentic assessment tasks suited to the nature of the learning being assessed and the characteristics and experiences of the students;</li> <li>○ Provides meaningful feedback throughout the learning process;</li> <li>○ Provides 'next steps';</li> <li>○ Students know in advance how and why they are to be assessed</li> </ul> </li> </ul>
<p><b>Curriculum content..</b></p> <p>that is 'concerned with the here and now' of emerging adolescents lives.</p>	<ul style="list-style-type: none"> <li>• A Health and Well Being programme that <ul style="list-style-type: none"> <li>○ <b>'personalises'</b> the importance of health and hygiene, adequate sleep, nutrition and exercise;</li> <li>○ which explores the dangers of risk taking behaviours including alcohol, drug use, sex and explores the influences of the media on such risk taking behaviours;</li> <li>○ focuses on and 'explores' the changes during puberty, body image, sexuality etc taught using co-operative learning techniques which provide social interaction. The programme emphasise the normality of the changes and the varied rates of change;</li> </ul> </li> <li>• An <b>'Advisory'</b> programme;</li> <li>• Programmes and activities that allow the students to discover and/or explore what they are interested in and/or good at. Examples might include:</li> </ul>

	<ul style="list-style-type: none"> <li>○ Academic: - science club, debating;</li> <li>○ Cultural: - orchestra, choir, drama, dance;</li> <li>○ Physical:- sports teams, orienteering, canoe polo team;</li> <li>● Physical activities that provide challenging regular / daily exercise and: <ul style="list-style-type: none"> <li>○ allow for variability of size and strength;</li> <li>○ build co-ordination;</li> <li>○ avoid intense age-group competitiveness.</li> </ul> </li> </ul>
<p><b>Pedagogy...</b></p> <p>that is responsive to the characteristics and needs of emerging adolescents.</p>	<ul style="list-style-type: none"> <li>● Teachers have a thorough knowledge of the students they teach including: <ul style="list-style-type: none"> <li>○ knowledge of students’ social and cultural contexts,</li> <li>○ their preferred ways of learning,</li> <li>○ the skills they know and use, and</li> <li>○ how confident they feel about learning.</li> </ul> </li> <li>● Exhibit care and respect for their students;</li> <li>● Plan always with the characteristics and needs of emerging adolescents as the central focus;</li> <li>● Actively involve students in the whole learning process – provide ‘<a href="#">student voice</a>’;</li> <li>● Provide a challenging, <a href="#">integrative</a>, <a href="#">inquiry-based</a> curriculum that requires students to think critically, synthesise, analyse, evaluate, conceptualise and create;</li> <li>● Plan and provide learning activities which are exciting but demand academic rigour ;</li> <li>● Encourage "active processing" through reflection and <a href="#">metacognition</a> to help students consciously review their learning</li> <li>● Provide learning activities that: <ul style="list-style-type: none"> <li>○ Help students make ‘sense’ of the lesson material and find ‘meaning’ in it. (Traditionally we have been better at the former than the later);</li> <li>○ <a href="#">Personalises learning</a>;</li> <li>○ Present information in context;</li> <li>○ Connect information and skills to prior knowledge;</li> <li>○ Make explicit connections between key ideas.</li> </ul> </li> <li>● Provide ‘<a href="#">differentiated</a>’ learning activities that: <ul style="list-style-type: none"> <li>○ include novelty;</li> <li>○ arouse the mind's search for meaning;</li> <li>○ require full brain interaction and communication;</li> <li>○ utilise information and communication technologies;</li> <li>○ avoid an emphasis on rote learning;</li> <li>○ result in success and avoid those that end in failures.</li> </ul> </li> <li>● Set realistic expectations of students which demonstrate an understanding and acceptance that, for at least some emerging adolescents, social skill development may lag behind physical and/or cognitive maturity;</li> <li>● Celebrate success and achievement;</li> <li>● Use teaching approaches and learning activities which: <ul style="list-style-type: none"> <li>○ involve flexible groupings of students working ‘<a href="#">co-operatively</a>’ and ‘<a href="#">collaboratively</a>’ to solve problems or explore issues inside and outside the classroom/school.</li> <li>○ result in ‘learning products’ which cover a range of learning</li> </ul> </li> </ul>

	<p>styles/multiple intelligences. These products could include: art, drama, dance, debates, multimedia or web-based artefacts...</p> <ul style="list-style-type: none"> <li>○ provide opportunities to 'show off' productively (e.g.:debates, role plays).</li> <li>● Use a range of assessment strategies that are fair, inclusive and appropriate to both the students and the learning context;</li> <li>● They maintain ongoing, informative records of student learning outcomes that are used to map student progress and to plan appropriate future learning experiences;</li> <li>● Provide constructive, purposeful and timely feedback to students and their parents, and to school authorities, as required</li> <li>● Are aware that the teacher's enthusiasm, modelling, and coaching present important signals about the value of what is being learned.</li> <li>● Promote enjoyment of learning and positive attitudes;</li> <li>● Use "hooks" or other motivational techniques to encourage personal connections.</li> <li>● Empower students to become independent learners;</li> <li>● Initiate purposeful dialogue with and among students;</li> <li>● Are facilitators and coaches of learning;</li> <li>● Encourage and enable parental involvement;</li> <li>● Use flexible organisation and structures which provide for movement during learning;</li> <li>● Provide physical activity after about 20 minutes of sedentary activity</li> <li>● Develop practises and aides to help students set goals, plan and organise their time, meet deadlines etc.</li> <li>● Provide frequent 'gentle' reminders.</li> </ul>
<p><b>Student Voice...</b>  that is listened to and acted on.</p>	<ul style="list-style-type: none"> <li>● Meaningful opportunities for 'student voice' in: <ul style="list-style-type: none"> <li>○ decision making;</li> <li>○ responsibility;</li> <li>○ concept exploration.</li> </ul> </li> </ul>
<p><b>Organisation and Structures...</b>  that are responsive to the characteristics and needs of emerging adolescents; that encourage not impede the principles above.</p>	<ul style="list-style-type: none"> <li>● Appoint a 'team leader' who is knowledgeable about and committed to middle-school philosophy, programs and practices;</li> <li>● Interdisciplinary teams involving 3-4 teachers working with a particular group of students (75-100 students) for extended periods;</li> <li>● 'Home' rooms where students do the bulk of their learning;</li> <li>● Flexible timetabling to allow longer duration of lessons;</li> <li>● Timetabling that maximises the high energy times;</li> <li>● Co-ordinated teacher release time to enable interdisciplinary teams to plan together;</li> <li>● A physical plan that accommodates teams and provides spaces for both small and large group meetings;</li> <li>● Opportunities for students to participate in interest based academic, sporting, cultural and social groups/clubs/events;</li> <li>● Flexible organisation and structures which provide for movement during learning;</li> <li>● Provide 'energisers' - physical activity after about 20 minutes of sedentary activity;</li> <li>● Provide access to water and brain friendly snacks eg protein bars.</li> </ul>



While the principles and practices outlined above may appear on the surface to apply equally to students of all ages and stages, the hallmark of middle schooling is its emphasis on aligning the principles and practises with the unique characteristics and needs of the emerging adolescent.

These principles and practices of effective middle schooling sit comfortably with the vision of the new New Zealand Curriculum where our young people (in this case emerging adolescents) will be: confident - positive in their own identity, motivated and reliable, resilient; connected – with themselves and others around them, their culture, their learning and the world; actively involved – in their learning as participants in a range of life contexts; and life long learners – critical and creative thinkers, active seekers, users and creators of knowledge and informed decision makers.

The principles and practices of effective middle schooling also provide a real balance between the cognitive and affective domains providing an excellent context in which to develop the key competencies: managing self, relating to others, participating and contributing (all mainly in the affective domain) and thinking and using language symbols and text (largely in the cognitive domain).

Education in New Zealand has traditionally focussed on the early years as the groundwork for learning success and the higher stake exit years. By contrast middle schooling focuses on emerging adolescents at a time when students “are more sensitive about themselves and their development. A relevant curriculum negotiated with students, teaching strategies that take into account the characteristics and needs discussed above, and a safe school environment can contribute significantly to positive outcomes for emerging adolescents seeking to establish a sense of self and a place in the world.

### ***How can the essential principles and practises of effective middle schooling be applied in action?***

A good start point is a Gap analysis:

1. **Determine the ‘desired state’** – effective middle schooling - the principles and practises in action
2. **Determine the ‘current state’** – consider each of the principles as a continuum and measure where you are on each continuum. The “Continuum Towards Middle Schooling’ later in this document may be used as a quick guide.
3. **Measure the ‘gap’** – at all levels: management, teacher, student, parents
4. **Plan to close the gap** – an action plan– outlining strategies, challenges and measures of success.
5. **Act on the plan**

Acting on the plan requires the management of complex change. The Houston-based American Productivity and Quality Center Consulting Group have identified five essential elements for bringing about such complex change:

1. Vision;
2. Skills;
3. Incentives;
4. Resources; and
5. Action Plan

If any element of the plan is missing real change will not occur. They determined:

- Without vision there is ‘confusion’;
- Without skills there is ‘anxiety’;

- Without incentives there is ‘gradual change’;
- Without resources there is ‘frustration’;
- Without an action plan there are ‘false starts’.

### **Vision**

The first step in any plan must therefore be the vision, the desire and passion to provide effective middle schooling. This vision must be a shared vision – all must have shared beliefs and understandings of effective middle schooling. The analysis of the characteristics and needs of emerging adolescents earlier in this document will make a useful start point in accomplishing this.

### **Skills**

An analysis of the implications for learning and teaching will make a useful start point for determining what skills will be required. Reference to the glossary of this document will ensure all have a shared understanding of the terminology used in this document. Timely, appropriate professional development undertaken as professional learning circles will be essential. The Massey University post-graduate Paper 21773: Special Project “The Curriculum, Learning and Teaching in the Middle Years” would be an excellent start point.

### **Incentives**

Incentives will need to be carefully considered. Remember that calling on teachers to change their practice invites them to experience “the humiliation of becoming a raw novice at a new trade after having been a Master Craftsman at an old one” (Evans, 1996). Incentives may range from mandated change included in performance agreements through to subsidised professional development and/or release time to undertake professional development. In practice the latter has proved more successful than the former.

### **Resources**

Three key resources that enhance the change process are:

1. Time
  - a. Change of this magnitude can take 2-3 years;
  - b. All participants in the change process need quality time to devote to it.
2. Human resources
  - a. There needs to be a team to lead the process. The team should comprise members who are new to the desired state as well as those who are considered experts;
  - b. The principal must play a key and active role. “It is one of the most predictable indicators of schools in which teachers make sustained, positive change in the practice that the principal was key in bringing about the change.” (Tomlinson, 2007).
  - c. Participants need:
    - i. exposure to the desired state/practice;
    - ii. support (especially just-in-time support); and
    - iii. success along the way.
3. Finance
  - a. Funding needs to be adequate and should reflect the value of the change to the organisation.

### **Action Plan**

The action plan should include all of the above as well as:

- Strategies and actions to be taken;
- A realistic timeframe for the actions;
- Who is responsible to carry out the actions;

- Resources required to complete the actions;
- Documented indicators of success;
- Identified milestone and/or review points;
- ongoing monitoring against the indicators;
- Milestone and/or review reports;
- Events to celebrate successes.

## **Continuum 'Towards Middle Schooling'**

<b>Aspect</b>	<b>Traditional Schooling</b>	<b>Middle Schooling</b>
<b>Focus</b>	Subject / Teaching centred / academic	Emerging Adolescent centred / affective and academic
<b>Beliefs and Understandings</b>	Commitment if any not documented	Documented (charter, policies, learning statements) commitment to middle school philosophy, programs and practices
<b>Teacher knowledge of students</b>	Academic / behavioural / superficial	Holistic / in depth
<b>Staffed by</b>	Subject specialist	Interdisciplinary team / Generalist teacher
<b>Teacher role</b>	Expert	Fellow learner / facilitator/ coach / sometimes expert
<b>Approach</b>	Content driven	Process and content driven
<b>Emphasis</b>	Knowing that	Knowing how and why and how to find out
<b>Student role</b>	Passive/receptive	Active / generative, metacognitive, reflective
<b>Student voice</b>	Silent / not welcomed	Encouraged, listened to and acted upon
<b>Locus of control</b>	With the teacher	Shared with the student and teacher
<b>Student activity</b>	Working alone	Working collaboratively and alone – independence and interdependence
<b>Curriculum design</b>	Imposed / subject centred	Negotiated / authentic / interest and need centred

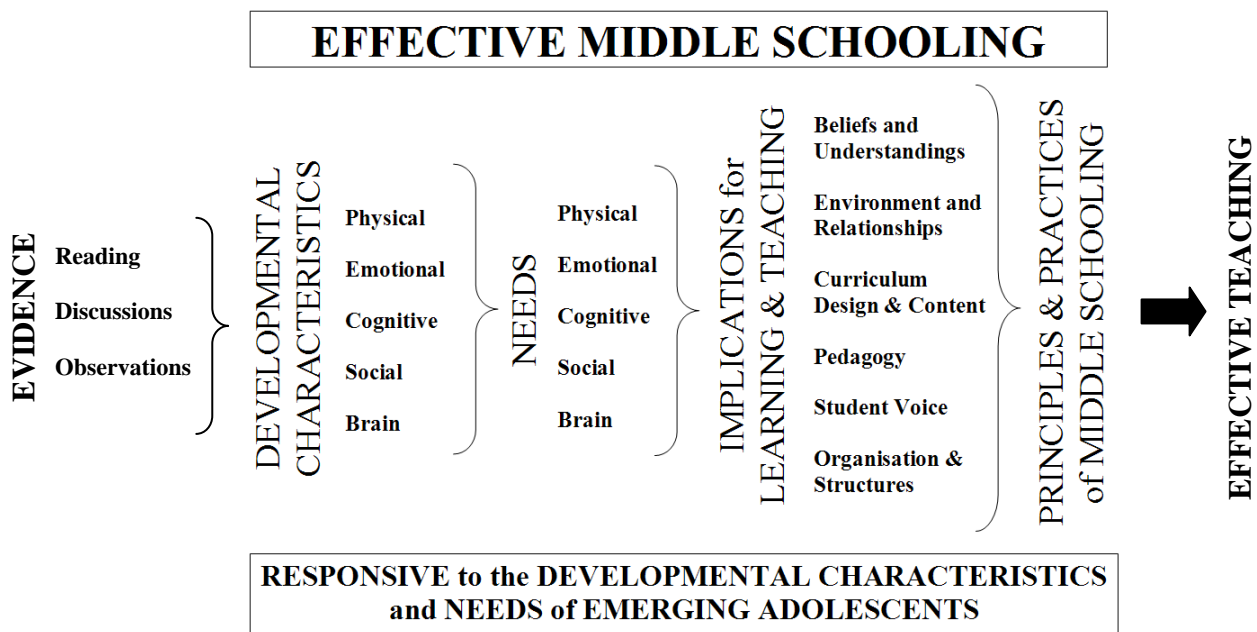
<b>Aspect</b>	<b>Traditional Schooling</b>	<b>Middle Schooling</b>
<b>Learning mode</b>	Rote / one size fits all / mainly verbal linguistic	Differentiated – recognising ‘learning styles/ multiple intelligences’, interactive, personalised with some rote
<b>Learning experiences</b>	Programmed / little recognition of prior experience	Flexible / opportunity guided by framework of outcomes and learners’ needs and interests / routine recognition of prior experience
<b>Concept development</b>	Fragmented / little to no connection between subjects	In context / multi-disciplinary / transformation of facts
<b>Assessment</b>	Mainly summative / exams	Mainly formative / authentic
<b>Timetabling</b>	Subject centred / rigid / fixed / Providing short periods 40–60 mins	Flexible / providing longer periods
<b>Movement during learning</b>	Learning involves long sedentary periods	Learning involves periods of movement and activity
<b>Environment</b>	Classroom identified as the teacher’s domain / rows of desks / single space	Classroom is identified as a ‘home’ room by the students / groups of desks, spaces for small and large groups
<b>Homeroom</b>	Students move from teacher to teacher for each subject	A teacher (generalist) or small team of teachers (interdisciplinary) move to students ‘home’ classroom
<b>Atmosphere</b>	High threat low challenge / mistakes not to be made	Low threat high challenge / mistakes learned from
<b>Student independence</b>	Dependent on the teacher	More independent

Adapted from Julia Atkin (1996), *From Values and Beliefs about Learning to Principles and Practice*

## Conclusion

The Schooling Strategy with its focus on evidence-based practice and all students experience effective teaching provided a useful framework for identifying and examining the principles and practises that could significantly improve opportunities and outcomes for students across the middle years of schooling (Years 7 to 10) regardless of school structure.

The diagram below summarises how the Schooling Strategy was used as a framework for identifying and examining the principles and practises of effective ‘middle schooling’.



I believe the research gathered and presented in this document provides compelling evidence for a similar exercise to be carried out at the very highest level in education within New Zealand so that the validity of ‘middle schooling’ can at long last be formally acknowledged in this country.

I also believe that in many of our schools which cater for emerging adolescents (Years 7-10) there is a large gap between current practise and the principles and practices of effective middle schooling outlined in this document. This was certainly the case in Victoria and Queensland, Australia where the results of the MYPRAD<sup>3</sup> project clearly demonstrated that many schools educating the “middle years” reflected practises towards the “traditional education” end of the scale in most aspects of “Continuum towards Middle Schooling” above. It is significant that both states have implemented Middle Schooling strategies. Quantifying my belief for the New Zealand situation, however, must be and should be the subject of another study – research carried out nationally by or for the Ministry of Education.

I remain forever hopeful that one day soon the Ministry of Education will formally acknowledge the middle years and develop policy and a strategic plan that will significantly improve opportunities and outcomes for students across the middle years of schooling (Years 7 to 10) regardless of school structure. We have seen it in the Early Years, the critical Middle Years must surely be next.

<sup>3</sup>Middle Years Pedagogy Research and Development project, (2003) Victoria, Australia.

## **Glossary**

### **Advisory programmes**

The Rationale for Advisory Programmes is to:

- Promote small, caring communities of learners
- Promote mutually respectful and meaningful relationships
- Promote individual attention to students
- Provide each student with an opportunity to “belong”
- Allow teachers to be actively involved in the affective development of students
- Emphasize the social and emotional development of every young adolescent
- Assist students with interpersonal communication skills development

Student-teacher relationships should be nurtured through a carefully designed program of activities developed around the characteristics and needs of adolescents. “There must be common experiences, understandings, and causes that build community and allow students to identify with things bigger than themselves. At the same time, students need to identify their unique selves and develop their individual talents to the fullest” (Erb, 1998, p. 2). Ayres (1994) believes that these activities should challenge students to think, stretch and grow, but still provide adequate time to relax and reflect. Advisories should offer students ample time and opportunities for vital social interaction. According to Mac Iver (1990), “As young adolescents strive for autonomy, as they grapple with learning how to regulate their own behavior and make responsible choices, their need for close, caring adult supervision and guidance is paramount” (p. 458).

The purposes of Advisory Programmes include:

1. Promoting opportunities for social development,
2. Assisting students with academic problems,
3. Facilitating positive involvement between teachers and administrators and students,
4. Providing an adult advocate for each student in the school,
5. Promoting positive school climate. (Clark & Clark, 1994, pp. 135-136)

Emphasis for Advisory Programmes

- Based on teacher and student input
- Based on the affective domain
- Address needs of specific school and community
- Social/Communication/Positive Interpersonal Relationships
- Respect for Self and Others/Good Citizen
- Accepting Responsibility for Education and Actions
- Develop Group, team, and School Spirit
- Self-Esteem Activities/Self-Awareness Growth
- Appreciating Talents, Health, and Potential
- Understanding and Making Commitments
- Decision Making/Coping Skills/Problem Solving
- Setting and Obtaining Goals/Organizing Time
- School Issues and Concerns/Adjustments
- Substance Abuse/Current Adolescent Issues
- Intramural Activities/Community Service Projects
- Academic Monitoring/Assistance/Motivation

Mac Iver (1990) found that when teacher advisories focused on social and academic support activities that a strong relationship developed that contributed to the reduction of dropouts. Connors

(1986) found evidence that advisory programmes helped students grow emotionally and socially, contributed to a positive school climate, helped students learn about school and get along with their classmates, and enhanced teacher-student relationships. George and Oldaker (1985) suggest that when advisory programs are combined with other components of the middle school concept that student self-concept improves, dropout rates decrease, and school climate becomes more positive.

Ayres, L. (1994). Middle school advisory programs: Findings from the field. *Middle School Journal*, 25(3), 8-14.

Connors, N. (1986). *A case study to determine the essential components and effects of an advisor/advisee program in an exemplary middle school*. Unpublished doctoral dissertation. Florida State University, Tallahassee, FL.

Erb, T. (1998). Strengthening community with individual development. *Middle School Journal*, 29(3), 2.

Mac Iver, D. (1990). Meeting the needs of young adolescents: Advisory groups, interdisciplinary teaching teams, and school transition programs. *Phi Delta Kappan*, 71(6), 458-464.

George, P., & Oldaker, L. (1985). *Evidence for the middle school*. Columbus, OH: National Middle School Association.

Kathleen M. Brown & Vincent A. Anfara, Jr. Competing Perspectives on Advisory Programs: Mingling or Meddling in Middle Schools?, *Research in Middle Level Education Annual*, Volume 24, 2001

## **Authentic Learning**

Authentic learning allows students to explore, discover, discuss, and meaningfully construct concepts and relationships in contexts that involve real-world problems and projects that are relevant and interesting to the learner.

Authentic learning implies several things:

- that learning be centered around authentic tasks;
- that learning be guided with teacher scaffolding;
- that students be engaged in exploration and inquiry;
- that students have opportunities for social discourse; and
- that ample resources be available to students as they pursue meaningful problems.

Advocates of authentic learning believe these elements support natural learning, and many of these ideals are based in theory and research on learning and cognition.

M. Suzanne Donovan, John D. Bransford, and James W. Pellegrino (eds.), *How People Learn: Bridging Research and Practice*.

## **Co-operative Learning / Group Work**

Co-operative learning or true group work is more than students working in groups. It involves pupils working together as a team. It can be used in any part of the curriculum and for many different types of task. Its defining characteristic is that the balance of ownership and control of the work shifts toward the pupils. Group work involves children as co-learners, not just one student helping another. Small groups/teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement. Students work through the assignment until all group members successfully understand and complete it.

### **Elements of Cooperative Learning**

The conditions necessary for cooperative efforts to be more productive than competitive and individualistic efforts are:

#### **1. Positive Interdependence (sink or swim together)**

- Each group member's efforts are required and indispensable for group success



- Each group member has a unique contribution to make to the joint effort because of his or her resources and/or role and task responsibilities

## 2. Face-to-Face Interaction (promote each other's success)

- Orally explaining how to solve problems
- Teaching one's knowledge to other
- Checking for understanding
- Discussing concepts being learned
- Connecting present with past learning

## 3. Individual & Group Accountability (no hitchhiking! no social loafing)

- Keeping the size of the group small. The smaller the size of the group, the greater the individual accountability may be.
- Giving an individual test to each student.
- Randomly examining students orally by calling on one student to present his or her group's work to the teacher (in the presence of the group) or to the entire class.
- Observing each group and recording the frequency with which each member-contributes to the group's work.
- Assigning one student in each group the role of checker. The checker asks other group members to explain the reasoning and rationale underlying group answers.
- Having students teach what they learned to someone else.

## 4. Interpersonal & Small-Group Skills

- Social skills must be taught:
- Leadership
- Decision-making
- Trust-building
- Communication
- Conflict-management skills

## 5. Group Processing

- Group members discuss how well they are achieving their goals and maintaining effective working relationships
- Describe what member actions are helpful and not helpful
- Make decisions about what behaviours to continue or change

Cooperative efforts result in participants striving for mutual benefit so that all group members:

- gain from each other's efforts. (Your success benefits me and my success benefits you.)
- recognize that all group members share a common fate. (We all sink or swim together here.)
- know that one's performance is mutually caused by oneself and one's team members. (We can not do it without you.)
- feel proud and jointly celebrate when a group member is recognized for achievement. (We all congratulate you on your accomplishment!).

Co-operative learning / group work can enhance conceptual development and reasoning. It is probably best suited to learning which involves transcending a learner's current level of understanding to reach a new perspective, rather than the acquisition of new skills or strategies, which is better suited to learning from more skilful partners. It can also improve children's school attainments and therefore school performance. Co-operative learning / group work can enhance motivation and attitudes to work. It helps pupils believe that success in school can come through their own efforts, rather than from something fixed such as ability, or from teaching.

Co-operative learning / group work can also aid social and communication skills, personal and social awareness and citizenship, and it can enhance relations between pupils. Opportunities to debate and recognise alternative points of view, and to be held responsible for one's own behaviour, can develop thoughtful attitudes to others. Co-operative learning / group work can result in the kinds of skills employers say are important but which are not always acquired in schools – for example, speaking with confidence in front of others, engaging in a constructive way with others' points of view and team work.

David and Roger Johnson. "Cooperative Learning." [Online] 15 October 2001. <<http://www.clcrc.com/pages/cl.html>>.

David and Roger Johnson. "An Overview of Cooperative Learning." [Online] 15 October 2001. <<http://www.clcrc.com/pages/overviewpaper.html>>.

Andrew Pollard and Mary James (editors). (Autumn 2004) Personalised Learning: A Commentary by The Teaching and Learning Research Programme Economic and Social Research Council, United Kingdom

### **Culturally located – ‘where culture counts’.**

Where culture counts - classrooms are places where learners can bring “who they are” to the learning interactions in complete safety, and their knowledge's are ‘acceptable’ and ‘legitimate’.

Bishop et al (2007) state that “Māori language, knowledge and ways of knowing, culture and values are normal, valid and legitimate, and indeed are valid guide to classroom interactions. The implications of this principle for educational contexts is that educators need to create contexts where to be Māori is to be normal; where Māori cultural identities are valued, valid and legitimate. In other words, where Māori children can be themselves. In short, a pedagogy is needed that is holistic, flexible and complex, that will allow children to present their multiplicities and complexities and their individual and collective diversities, rather than a pedagogy that perpetuates teacher images.” (Pg11)

“This can be achieved through a Culturally Responsive Pedagogy of Relations where:

- power is shared: where learners can initiate interactions; learners' right to self-determination over learning styles and sense making processes are regarded as fundamental to power-sharing relationships, and collaborative critical reflection is part of an ongoing critique of power relationships;
- culture counts: where classrooms are places where learners can bring “who they are” to the learning interactions in complete safety, and their knowledge's are ‘acceptable’ and ‘legitimate’;
- learning is interactive and dialogic: learners are able to be co-inquirers, that is raisers of questions and evaluators of questions and answers; learning is active, problem-based, integrated and holistic; learning positionings are reciprocal (ako) and knowledge is co-created; classrooms are places where young people's sense-making processes and knowledge's are validated and developed in collaboration with others;
- connectedness is fundamental to relations: teachers are committed to and inextricably connected to their students and the community; school and home/parental aspirations are complementary.
- there is a common vision; an agenda for excellence for Māori in education In short, an education: where power is shared between self-determining individuals within non-dominating relations of interdependence; where culture counts; learning is interactive, dialogic and spirals; participants are connected and committed to one another through the establishment of a common vision for what constitutes excellence in educational outcomes.” (Pg 15)

“One way of implementing such an approach in classroom contexts is as Beane (1997) suggests where children should participate in the process of decision making about curriculum planning to the extent of participating in a pedagogy of sharing power over decisions about curriculum content and the directions that learning will take. In Applebee's (1996) terms, this is the process of developing and participating in knowledge-in-action, and is far closer to what happens in real life.” (Pg 10)

R. Bishop, M. Berryman, T. Cavanagh & L. Teddy (2007) Te Kōtahitanga Phase 3 Whānaungatanga: Establishing a Culturally Responsive Pedagogy of Relations in Mainstream Secondary School Classrooms

## **Differentiated curriculum**

Tomlinson (2001) states differentiation is responsive teaching rather than one-size-fits-all teaching. It is classroom practice that looks eyeball to eyeball with the reality that kids differ, and the most effective teachers do whatever it takes to hook the whole range of kids on learning. Differentiating learning means creating multiple paths so that students of different abilities, interest or learning needs experience equally appropriate ways to absorb, use, develop and present concepts as a part of the daily learning process. It allows students to take greater responsibility and ownership for their own learning, and provides opportunities for peer teaching and cooperative learning.

Teachers can differentiate through content, process, product or environment according to the readiness, interest and learning profile of the students through a variety of instructional strategies – graphic organizers, scaffolding, learning contracts etc

Tomlinson, Dr Carol Ann (2007) Teachers at Work 4th Annual Thinking and Learning Conference - The Differentiated Classroom

## **Harm minimisation**

“The goal of harm minimisation is to prevent or reduce the harms related to the participation in high risk behaviours. A minimisation approach does not condone harmful or dangerous behaviours. The most effective way to minimise harm from the behaviours is not to participate in them. The harm minimisation approach does recognise that where eliminating high-risk behaviour is not possible, it is important to minimise the personal, social, and economic costs associated with those behaviours. The aim of harm minimisation is to improve health, social and economic outcomes for the individual, the community and population at large. It encompasses a wide range of approaches, including abstinence-oriented strategies and initiatives for people who participate in these high risk behaviours.”

Adapted from the policy of the World Health Organisation and the New Zealand Ministry of Health National Drug Policy 2006-2011.

## **Inquiry and Problem Based Learning**

The essence of inquiry-based learning is that children participate in the planning, development and evaluation of projects and activities. Teachers can take many approaches to crafting an inquiry-based project, but Dr. Cornelia Brunner of the Centre for Children and Technology breaks it into four main parts: Posing Real Questions, Finding Relevant Resources, Interpreting Information and Reporting Findings.

Effective inquiry is more than just asking questions. A complex process is involved when individuals attempt to convert information and data into useful knowledge. Useful application of inquiry learning involves several factors:

- a context for questions,
- a framework for questions,
- a focus for questions, and
- different levels of questions.

Well-designed inquiry learning produces knowledge formation that can be widely applied.

## The Inquiry Process

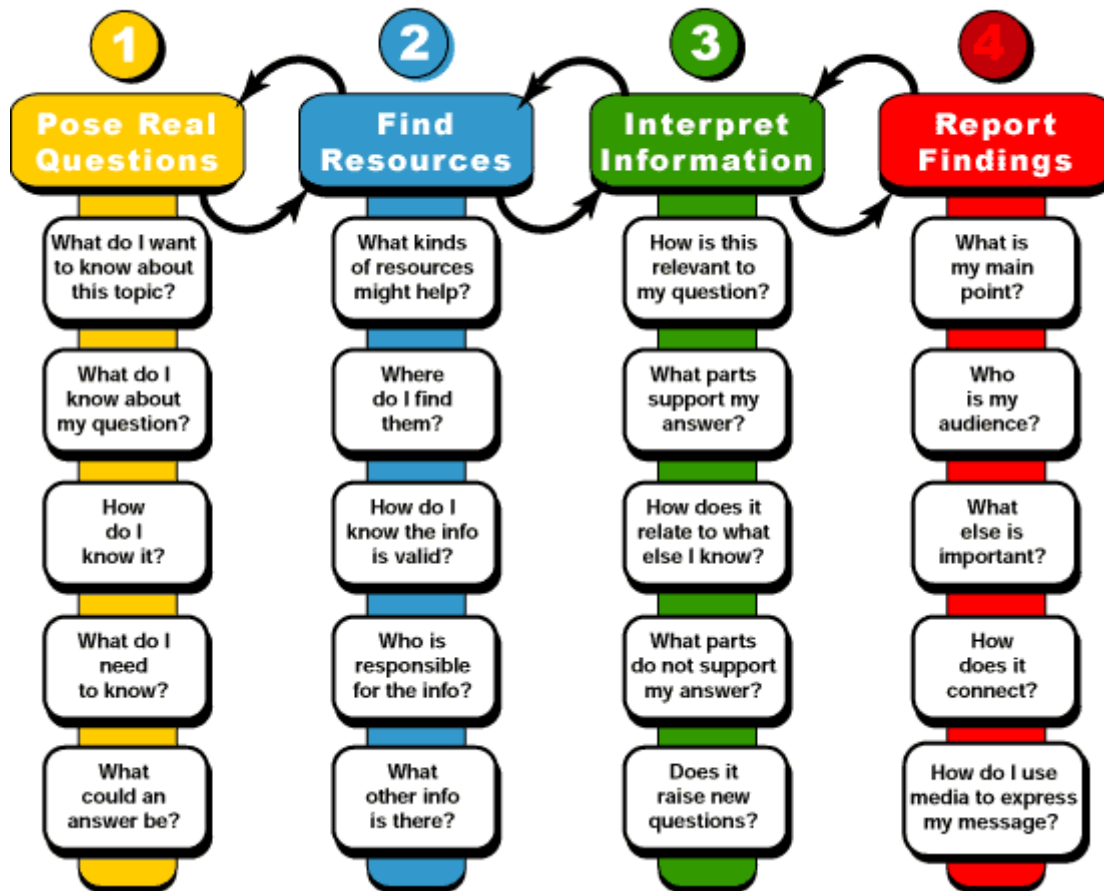


Diagram from: The YouthLearn Initiative at the Morino Institute Education Development Center, <http://www.youthlearn.org/learning/activities/howto.asp>

In general, the traditional approach to learning is focused on mastery of content, with less emphasis on the development of skills and the nurturing of inquiring attitudes. The current system of education is teacher centred, with the teacher focused on giving out information about "what is known." Students are the receivers of information, and the teacher is the dispenser. Much of the assessment of the learner is focused on the importance of "one right answer." Traditional education is more concerned with preparation for the next grade level and in-school success than with helping a student learn to learn throughout life.

The inquiry approach is more focused on using and learning content as a means to develop information-processing and problem-solving skills. The system is more student centred, with the teacher as a facilitator of learning. There is more emphasis on "how we come to know" and less on "what we know." Students are more involved in the construction of knowledge through active involvement. The more interested and engaged students are by a subject or project, the easier it will be for them to construct in-depth knowledge of it. Learning becomes almost effortless when something fascinates students and reflects their interests and goals.

Assessment is focused on determining the progress of skills development in addition to content understanding. Inquiry learning is concerned with in-school success, but it is equally concerned with preparation for life-long learning.

Inquiry classrooms are open systems where students are encouraged to search and make use of resources beyond the classroom and the school. Teachers who use inquiry can use technology to connect students appropriately with local and world communities which are rich sources of learning and learning materials. They replace lesson plans with facilitated learning plans that account for slight deviations while still keeping an important learning outcome in focus. They meet on-target questions with, "How do you suggest we investigate that question?"

What does inquiry-based learning look like? The following list describes some of what inquiry learning looks like in practice.

Students view themselves as learners in the process of learning.

- They look forward to learning.
- They demonstrate a desire to learn more.
- They seek to collaborate and work cooperatively with teacher and peers.
- They are more confident in learning, demonstrate a willingness to modify ideas and take calculated risks, and display appropriate skepticism.

Students accept an "invitation to learn" and willingly engage in an exploration process.

- They exhibit curiosity and ponder observations.
- They move around, selecting and using the materials they need.
- They confer with classmates and teacher about observations and questions.
- They try out some of their own ideas.

Students raise questions, propose explanations, and use observations.

- They ask questions (verbally and through actions).
- They use questions that lead them to activities generating further questions or ideas.
- They observe critically, as opposed to casually looking or listening.
- They value and apply questions as an important part of learning.
- They make connections to previous ideas.

Students plan and carry out learning activities.

- They design ways to try out their ideas, not always expecting to be told what to do.
- They plan ways to verify, extend, confirm, or discard ideas.
- They carry out activities by: using materials, observing, evaluating, and recording information.
- They sort out information and decide what is important.
- They see detail, detect sequences and events, notice change, and detect differences and similarities.

Students communicate using a variety of methods.

- They express ideas in a variety of ways, including journals, drawing, reports, graphing, and so forth.
- They listen, speak, and write about learning activities with parents, teacher, and peers.
- They use the language of learning, apply the skills of processing information, and develop their own "ground rules" appropriate for the discipline.

Students critique their learning practices.

- They use indicators to assess their own work.
- They recognize and report their strengths and weaknesses.
- They reflect on their learning with their teacher and their peers.

This is a modified list based on "Inquiry-Based Science, What Does It Look Like?" published in CONNECT MAGAZINE, March-April 1995.

The teacher's role in an inquiry classroom is a facilitator of learning.

The teacher reflects on the purpose and makes plans for inquiry learning.

- He/she plans ways for each learner to be actively engaged in the learning process.
- He/she understands the necessary skills, knowledge, and habits of mind needed for inquiry learning.
- He/she understands and plans ways to encourage and enable the learner to take increasing responsibility for his learning.
- He/she insures that classroom learning is focused on relevant and applicable outcomes.
- He/she is prepared for unexpected questions or suggestions from the learner.
- He/she prepares the classroom environment with the necessary learning tools, materials, and resources for active involvement of the learner.

The teacher facilitates classroom learning.

- The teacher's daily, weekly, monthly, and yearly facilitation plans focus on setting content learning in a conceptual framework. He/she also stresses skill development and models and nurtures the development of habits of mind.
- He/she accepts that teaching is also a learning process.
- He/she asks questions, encouraging divergent thinking that leads to more questions.
- He/she values and encourages responses and, when these responses convey misconceptions, effectively explores the causes and appropriately guides the learner.
- He/she is constantly alert to learning obstacles and guides learners when necessary.
- He/she asks many Why? How do you know? and What is the evidence? type of questions.
- He/she makes student assessment an ongoing part of the facilitation of the learning process.

This list was developed by Joe Exline. [http://www.thirteen.org/edonline/concept2class/inquiry/index\\_sub2.html](http://www.thirteen.org/edonline/concept2class/inquiry/index_sub2.html)

Ultimately, the importance of inquiry learning is that students learn how to continue learning – ‘life long learning’.

## **Integrative Education**

Integrative education cuts across subject-matter lines, bringing together various aspects of the curriculum into meaningful association to focus upon broad areas of study. It reflects the interdependent real world, and involves the learner's body, thoughts, feelings, senses, and intuition in learning experiences that unify knowledge and provide a greater understanding than that which could be obtained by examining the parts separately (Shoemaker, 1989).

Instead of artificially dividing the world into "subjects" and using textbooks and seat work, integrative education immerses students in an enriched environment that reflects the complexities of life. This provides a holistic context for learning that leads to a greater ability to make and remember connections and to solve problems (Susan Kovalik and Karen Olsen 1994).

James Beane (1993) makes a distinction between ‘integrated education’ and ‘integrative education’ based largely on locus of control over the selection of the topic/theme for study and the learning process. He argues that ‘integrative education’ is when the topic/theme of study focuses on the issues and concerns of the student; and the theme selection and the learning plan or pathway is negotiated between the student and the teacher. On the other hand it is the teacher who selects the topic/theme for study and who determines the learning plan or pathway under the ‘integrated’ education model.

Inviting students to help in the process gives them excellent opportunities to develop critical thinking, demonstrates that their ideas are valued, and helps them to see that education is a matter of serious concern for our entire society. Integrative learning leads students to synthesize learning

from a wide array of sources, learn from experience, and make significant and productive connections between theory and practice.

Just as curriculum integration changes the way instruction looks, it may also lead to a change in assessment strategies. As students are involved in "real" tasks, teachers find that they need to design performance assessments that give a true picture of student understanding of concepts.

Lipson (1993) summarizes the positive effects of curriculum integration as:

- Integrated curriculum helps students apply skills.
- An integrated knowledge base leads to faster retrieval of information.
- Multiple perspectives lead to a more integrated knowledge base.
- Integrated curriculum encourages depth and breadth in learning.
- Integrated curriculum promotes positive attitudes in students.
- Integrated curriculum provides for more quality time for curriculum exploration.

Beane, J.A. (1993). What is an Integrative Curriculum?" Journal of the New England League of Middle Schools, Fall, pp. 2-4.

Kovalik, Susan, and Karen Olsen. ITI: The Model. Integrated Thematic Instruction. Third Edition. Kent, Washington: Books for Educators, Covington Square, 1994. 374 pages.

Lipson, M.; Valencia, S.; Wixson, K.; and Peters, C. "Integration and Thematic Teaching: Integration to Improve Teaching and Learning." *Language Arts* 70/4 (1993): 252-264.

Shoemaker, Betty Jean Eklund. Integrative Education. A Curriculum for the Twenty-First Century. OSSC Bulletin Series. Eugene, Oregon: Oregon School Study Council, 1989. 46 pages.

## Metacognition

Metacognition, or awareness of the process of learning, is a critical ingredient to successful learning. It consists of two basic processes occurring simultaneously: *monitoring your progress* as you learn, and *making changes and adapting your strategies* if you perceive you are not doing so well. (Winn, W. & Snyder, D., 1998) It's about self-reflection, self-responsibility and initiative, as well as goal setting and time management.

"Metacognitive skills include taking conscious control of learning, planning and selecting strategies, monitoring the progress of learning, correcting errors, analyzing the effectiveness of learning strategies, and changing learning behaviors and strategies when necessary." (Ridley, D.S., Schutz, P.A., Glanz, R.S. & Weinstein, C.E., 1992)

For the learner metacognition consists of three basic elements:

- Developing a plan of action
- Maintaining/monitoring the plan
- Evaluating the plan

Before - When the student is developing the plan of action, he/she asks:

- What in my prior knowledge will help me with this particular task?
- In what direction do I want my thinking to take me?
- What should I do first?
- Why am I reading this selection?
- How much time do I have to complete the task?

During - When the student is maintaining/monitoring the plan of action, he/she asks:

- How am I doing?
- Am I on the right track?
- How should I proceed?

- What information is important to remember?
- Should I move in a different direction?
- Should I adjust the pace depending on the difficulty?
- What do I need to do if I do not understand?

After - When the student is evaluating the plan of action he/she asks:

- How well did I do?
- Did my particular course of thinking produce more or less than I had expected?
- What could I have done differently?
- How might I apply this line of thinking to other problems?
- Do I need to go back through the task to fill in any "blanks" in my understanding?

As students become more skilled at using metacognitive strategies, they gain confidence and become more independent as learners. Independence leads to ownership as students realise they can pursue their own intellectual needs and discover a world of information at their fingertips.

The task of educators is to acknowledge, cultivate, exploit and enhance the metacognitive capabilities of all learners.

Ridley, D.S., Schutz, P.A., Glanz, R.S. & Weinstein, C.E. (1992). Self-regulated learning: the interactive influence of metacognitive awareness and goal-setting. *Journal of Experimental Education* 60 (4), 293-306.

Winn, W. & Snyder D. (1996). Cognitive perspectives in psychology. In D.H. Jonassen, ed. *Handbook of research for educational communications and technology*, 112-142. New York: Simon & Schuster Macmillan

## Personalised Learning

"Put simply, personalised learning and teaching means taking a highly structured and responsive approach to each child's and young person's learning, in order that all are able to progress, achieve and participate. It means strengthening the link between learning and teaching by engaging pupils - and their parents - as partners in learning." (Andrew Pollard and Mary James, Autumn 2004).

There are five components to Personalised Learning:

1. **Assessment for learning and the use of evidence** and dialogue to identify every pupil's learning needs
2. **Teaching and learning strategies** that develop the competence and confidence of every learner by actively engaging and stretching them
3. **Curriculum entitlement and choice** that delivers breadth of study, personal relevance and flexible learning pathways through the system
4. **A student centred approach to school organisation**, with school leaders and teachers thinking creatively about how to support high quality teaching and learning
5. **Strong partnership beyond the school** to drive forward progress in the classroom, to remove barriers to learning and to support pupil well-being

Personalised Learning is not a matter of tailoring curriculum, teaching and assessment to 'fit' the individual, but is a question of developing social practices that enable people to become all that they are capable of becoming.

The following are likely, although not exclusively, to be the essential features:

For pupils:

- They will be treated as partners in their learning, with joint responsibility for participating in the design of their learning;



- They will have their individual needs addressed, both in school and extending beyond the classroom and into the family and community;
- If they start to fall behind in their learning, they will be given additional support to help them get back on track quickly;
- They will receive coordinated support to enable them to succeed to the full, whatever their talent or background;
- They will develop respect for others, self-esteem and skills for collaboration through learning in a mutually supportive environment;
- They will be able to make personal meaning of their learning.

For teachers and schools:

- They will seek to configure their design, resources, curriculum and organisation around the needs of their learners, to reflect a professional ethos that accepts and assumes every child comes to the classroom with a different knowledge base and skill set, as well as varying aptitudes and aspirations;
- They will demonstrate a determination for every young person's needs to be assessed and their talents developed through a variety of teaching strategies;
- They will have the confidence to innovate and develop approaches to personalising learning that meet the diverse needs of their pupils;
- They will put personalising learning at the heart of their vision for transforming teaching and learning.

Andrew Pollard and Mary James (editors). (Autumn 2004) *Personalised Learning: A Commentary by The Teaching and Learning Research Programme Economic and Social Research Council, United Kingdom*

## Student Voice

“Student voice work is premised on the following convictions:

- Young people have unique perspectives on learning, teaching, and schooling;
- Their insights warrant not only the attention but also the responses of adults; and
- They should be afforded opportunities to actively shape their education.” (Wikipedia, 2007)

Student voice has the potential to change the way teachers think about their lessons and to encourage them to work with pupils in new and more effective ways that will lead to improved learning. “The depth of knowledge students hold about themselves and their learning preferences as well as the real issues they are willing to share that concern them in their lives reinforces the potential for and the desirability of including students and their views as a starting point for co-constructing learning programmes and experiences” (Nelson, 2006).

Discussing with students issues about teaching and learning helps to improve understanding of what achieves effective learning. Encouraging students to consider how they learn best and to identify any problems related to their learning can help in promoting more effective learning.

From the teacher’s perspective, listening to the views of students provides an invaluable source of evidence of effective learning strategies. They can access pupils’ views on effective teaching styles, resources, assessment and curriculum content. If they then act on this evidence, this shows to the students that they are important players in their own learning.

They need to be seen as equal and vital partners in a dialogue about learning. At the heart of all student voice work there needs to be a genuine desire to encourage greater freedom of thought and action and a belief that this will engender more creative ways to transform schools into learning spaces where power and responsibility is shared.

For student voice work to be more than just tokenism, curriculum managers need to ensure that the right culture, structure and systems are in place to secure effective whole-school practice in engaging students as partners in learning. It is vital that schools act on what is heard so that the students can see the purpose of engaging in this way in the learning design process. The student voice should not be listened to half-heartedly and interpreted in a way that confirms what you already think, or allows you to give legitimacy to the way you already do things.

“Listen up: hearing what students have to say about learning” <http://www.teachingexpertise.com/articles/listen-up-hearing-what-students-have-to-say-about-learning-1036>

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