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Foreword

If asked to identify what is at the heart of quality teaching, many would suggest that teachers everywhere strive to maximise student learning outcomes by creating a challenging learning environment – an environment where the tasks are genuinely interesting, engaging and pitched at their appropriate level of ability.

Having been involved with countless number of schools in many different countries, across a range of contexts and with very diverse client bases, it is clearly evident to me that most students, even those involved in special programming, spend the vast majority of their time in regular classrooms with their age peers.

Some would argue that this arrangement might not provide the most optimum learning environment for some students. We are all aware that students, even though they may be of a similar age, can vary widely in readiness, interests and learning styles. As a consequence, they will require different approaches if learning needs are to be met.

One element that will be a common requirement for all students, however, is a strong classroom culture of thinking – an environment in which all students have opportunities to be immersed continuously in content at the higher levels of thinking.

This publication provides practical information for teachers and school leaders on how to address the issues of inclusivity; differentiation; providing challenging learning environments; and the development of a classroom culture of thinking that encourages high levels of student engagement in high-order thinking in every lesson, every day.

Introduction

Differentiation may imply many different things to different people in varying contexts.

This publication seeks to clarify how teachers may create a positive learning environment for all by providing appropriate levels of challenge for all students and allowing various ways for students to demonstrate understanding.

In an inclusive classroom, what students learn may vary; what students do may vary; how they may show understanding may vary; and, finally, how students are assessed may vary.

Chapter One sets the context for what is to follow. Terminology such as differentiation, inclusive practices, complex thinking tasks and classroom culture of thinking are discussed and clarified.

Chapter Two describes the learning environment that provides for challenge; allows for differences; and is inclusive of the needs of students that vary in terms of their abilities, strengths, limitations, interests and preferred ways of learning.

Chapter Three provides some examples of approaches to the teaching of the four components of complex thinking. When infused with the teaching of relevant and appropriate content, the application of such strategies can be seen as both an inclusive and empowering process that equips students with a range of tools that can be readily transferred to other learning situations with the potential to become tools for life-long learning.

Students are required to think in many different ways at different times and in different contexts. Chapter Four describes how structures like Bloom's Taxonomy may be useful tools – not only to provide a range of different ways to think about content, but also in the differentiation process.

At times, however, teachers will need to look beyond Bloom's Taxonomy to find other frameworks that will provide the thinking focus that is appropriate in any given context.

There are many different models and strategies that can assist in infusing thinking into content delivery. By their nature, some have a broad thinking focus and others will narrow the focus of thinking for students. Chapter Five explores some of these. Some of the structures discussed will allow for a high degree of student choice, while some have a strong high-order thinking focus and others assist in diversifying student products.

Gifted students have specific learning needs. Students with a large knowledge base and/or who are working in areas of personal strength will require activities with a strong high-order thinking focus if they are to be challenged appropriately in terms of their advanced abilities. The requirements of gifted students working in mixed-ability classrooms are addressed in Chapter Six.

Collectively, these chapters provide a comprehensive overview of how teachers go about creating inclusive classrooms, plan differentiated learning activities, program with a thinking focus and infuse high-order thinking into lesson materials.

Accepting and rejecting ideas and deciding between alternatives (i.e. critical thinking) is a necessary step toward creative production, so hence there is an overlap of these circles.

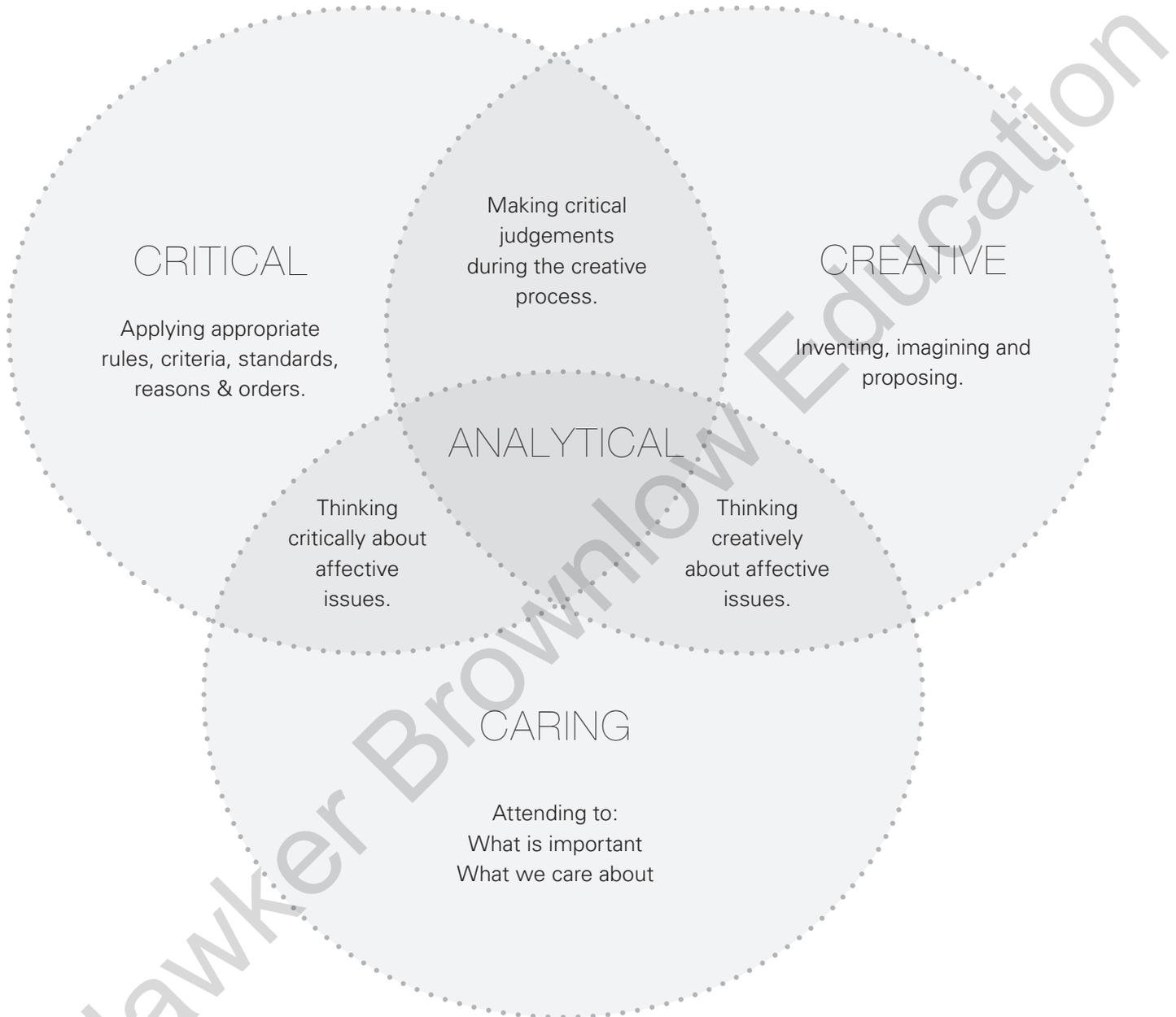


FIGURE 3 – Analytical, Critical, Creative and Caring Thinking

The diagram also suggests that analytical thinking has a central role in producing the other, more productive forms of thinking. The ability to deconstruct an idea, a concept or an object according to its attributes, elements or constituent parts can be seen as an essential component inherent within all three forms of complex thinking. This process of looking at discrete pieces in greater detail, and seeing how they work together to make a whole, will give one a deeper understanding of that whole. With deeper understanding, one should be better placed to work more effectively in the more productive areas of critical, creative and caring thinking. Analytical thinking is a crucial and integral part of all other forms of complex thinking – it is at the very heart of all good thinking.

The teacher may then ask, "How might we improve the design of this object by changing some of its attributes?"

What if ...

this object was a different size?
Would this **improve the design** of the object?

we changed the size so that the object was ...

- ▶ twice as big, twice as small
- ▶ ten times bigger, ten times smaller
- ▶ a hundred times bigger, a hundred times smaller?

Might this change **the way we use** the object?
Can we think of a **new use** for the changed object?

this object was a **different colour** or different colours?
Would this **improve the design** of the object?
Might this change the way **the way we use** the object?
Can we think of a **new use** for the changed object?

we didn't use the object in the way it was intended?
Can we brainstorm some **new uses** for the object?

this object was made from **different materials**?
Would this **improve the design** of the object?
Can we make it **cheaper**?
Can we make it **more durable**?
Can we make it **more long lasting**?
Can we make it **more versatile**?

we **increased or reduced** the **number of parts** within?
Would this **improve the design** of the object?

we **changed the shape or shapes** within?
Would this **improve the design** of the object?

Using Graphic Organisers

A Concept Map

A Concept Map shows the relationships between ideas. You can use a concept map to demonstrate connections between objects and events; to describe individual elements of a complex idea or to show the relationship between objects, events or ideas.

When we create concept maps, we are producing images that our brains will find easier to remember and recall because they mirror the way we think.

They have the ability to show how integral parts fit together to make the global concept – they depict relationships between thought units.



Creating a Concept Map will see students simultaneously:



focussing thinking on key concepts and the inter-relationships which bind them together.



creating a visual record of their learning.



The Concept Map is a useful means of diagrammatically representing a wide range of:



natural and man-made systems (such as river systems or patterns of distribution)



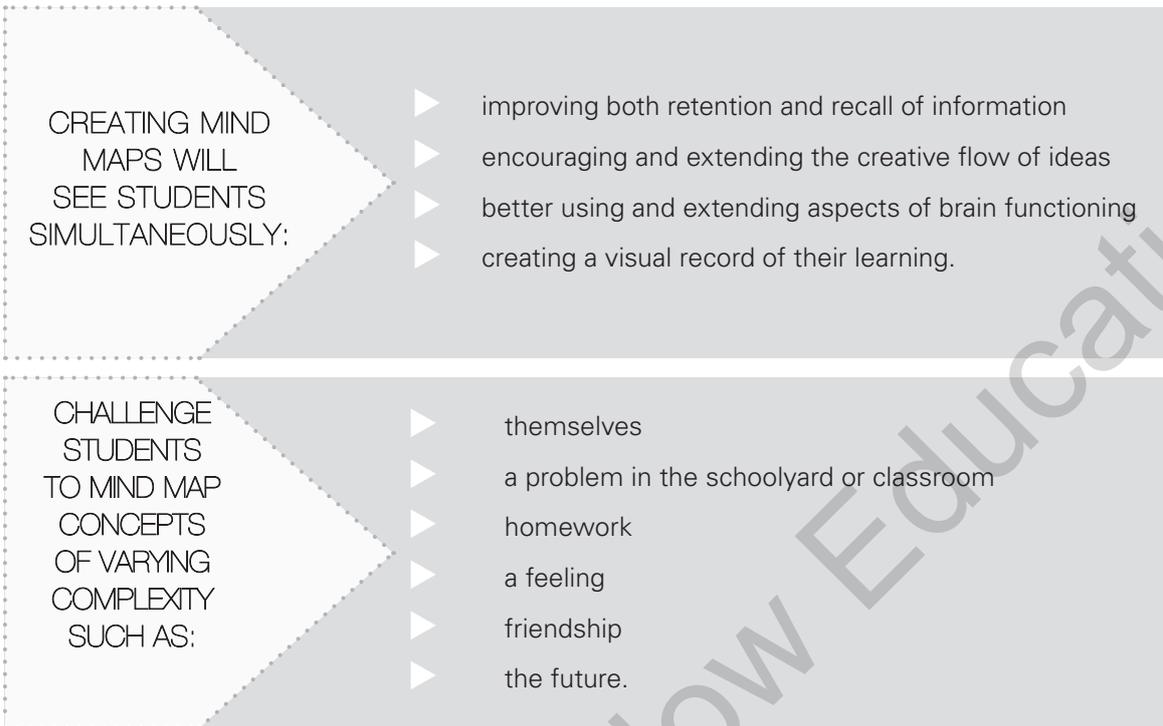
cycles (such as the water cycle, economic and political cycles)



inter-dependent functions (such as systems within the human body)



classifications of natural and man-made phenomena (such as landforms or pollution)



Mind & Concept Maps are very similar.
They both create a visual means of displaying information so that relationships are clearly evident.

Both Mind Maps & Concept Maps:

- ▶ are particularly useful in analysing complex ideas
- ▶ display the connections between components
- ▶ link ideas to establish a relationship and do not see recording details as an important element.



begin with a **single keyword or drawing** (a specific object, action or idea)

focus upon relationships between **two or more main ideas**

location and sequence of elements are not seen as important, proximity to the keyword will indicate relative importance.

location and sequence of elements **are seen as important.**



Example 3 – Topic: “Shakespeare’s *Macbeth*” Target Group: Secondary Years

<p>REMEMBERING (Factual answers, recall and recognition)</p>	<p>What were the three titles used by the witches in greeting Macbeth?</p>	<p>What prophecy did the witches have for Macbeth?</p>	<p>Why does Macbeth fear Banquo? (See Act III, Scene 1)</p>
<p>UNDERSTANDING (Translating, interpreting, showing understanding)</p>	<p>What is a soliloquy? Give two examples from the play.</p>	<p>What evidence is there that perhaps the witches could foresee the future?</p>	<p>Why do you think Lady Macbeth wishes her husband would return home quickly? (See Act I, Scene 5)</p>
<p>APPLYING (Using information gained in different, familiar situations)</p>	<p>Prepare invitations for the banquet, including all relevant information.</p>	<p>Continue the speech by Macbeth and Banquo (after reading lines 38–88, Act I, Scene 3).</p>	<p>Draw an illustration of a scene that has captured your imagination.</p>
<p>ANALYSING (Break into parts to examine more closely)</p>	<p>Compare and contrast Macbeth and Banquo’s reactions to the witches.</p>	<p>Draw a graph to illustrate the structure of the play.</p>	<p>How did the witches contribute to Macbeth’s downfall?</p>
<p>EVALUATING (Judge, use criteria, rank, substantiate)</p>	<p>Give reasons for your impressions of Lady Macbeth up to Act II.</p>	<p>Give evidence from Act I that indicates the relationship between Macbeth and his wife.</p>	<p>What can you infer about Lady Macbeth from her soliloquy? (See Act I, Scene 5)</p>
<p>CREATING (Combining information to new situations to create new products, ideas, etc)</p>	<p>Recreate an Act from the story in a modern-day setting and everyday language.</p>	<p>Compose a reply by Lady Macbeth to the letter she received in Act I.</p>	<p>Create some other descriptive phrases that could be used instead of “full of scorpions” (see Act V).</p>

Finally, the following is another example of providing for student choice, this time in an area where it has been traditionally seen as more difficult to apply the taxonomy – the area of mathematics.

Gifted students have specific learning needs. This group will include those who:

- ▶ can learn quickly and easily and/or
- ▶ possess a large knowledge base and/or
- ▶ are working in areas of personal strength.

These individuals will require activities with a strong high-order thinking focus if they are to be challenged appropriately in terms of their advanced abilities. The previous chapter discussed some of the planning structures for teachers that may assist in providing differentiated activities suitable for a range of abilities in their classroom – many of which will be equally appropriate for the gifted. This chapter explores further options for teachers in meeting the learning needs of this student group.

General Learning Needs

Clearly, the more highly gifted the student, the greater the degree of differentiation required to meet their specific learning needs. While most of the learning needs of mildly and moderately gifted students are often addressed within inclusive classrooms, it would be unreasonable to expect classroom teachers to meet all the learning needs of students who may fall into the highly gifted range and beyond. Providing challenges for this group will require the application of some broader options, such as curriculum compacting and accelerative measures discussed later in this chapter.

In *Gifted Students in the School Context – An Introductory Guide for Educators* (Pohl, 2012) it was suggested that some view giftedness as best expressed by a student's ability to retain and recall vast amounts of information. For some gifted individuals this large knowledge base may be in a very limited field, while for others it may be in an extensive range.

Others may talk about the rapid speed of processing information, as these students work in areas of personal strength or interest, as something that may best characterise gifted students.

While such suggestions may be true, they reflect just two of the many different ways to view giftedness in the school context.

In that book it was suggested that perhaps it is the depth and complexity of thinking that most distinguishes gifted students from their age peers. It was also suggested there that providing the appropriate level of challenge for all was at the forefront of good teaching practice in inclusive classrooms. Consequently, setting high-order thinking tasks for gifted students will assist in providing the appropriate level of challenge to inspire them to reach their true potential.