

14th Annual  
**Hawker Brownlow**  
**Thinking &  
Learning**  
Conference

**ANDREA MULLER &  
TANIA LATTANZIO**

**THURSDAY 18 MAY**

**Taking the Complexity Out of Concepts  
Session 1**

**MELBOURNE**



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# ANDREA MULLER & TANIA LATTANZIO

Andrea Muller is an experienced international teacher and consultant who has worked in and with many schools throughout New Zealand, Australia, Asia, the Middle East and Europe. In these settings, she has had roles that include curriculum coordinator and adviser, and programme manager with the International Baccalaureate. Her current role is consultant and regional director for Innovative Global Education. In this role, she has worked extensively in Asia Pacific and Middle East. Critical to this role is leading and evolving a sustainable model of coaching for enduring professional learning. This model involves developing and designing curriculum frameworks; working in partnership with teams to review and refine planning, teaching and assessment and supporting significant shifts in pedagogy in both local and international settings.



Tania Lattanzio is an experienced international educator. Previously a teacher, coordinator and manager with the International Baccalaureate, she is now regional director of Innovative Global Education. In this role she works as a consultant extensively in Asia Pacific and other parts of the world. This role involves developing and conducting professional development for teachers and leadership, modelling pedagogy in classrooms, developing and designing curriculum for schools and working intensively with teaching teams, through mentoring and coaching, to improve planning, teaching and assessment. A passionate educator, Tania works closely with educational institutions to specifically meet their needs in supporting school reform, making significant shifts in pedagogy and curriculum in both local and international settings.



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### Taking the Complexity Out of Concepts

Tania Lattanzio and Andrea Muller



Innovative Global Education

Innovative Global Education  
Inspiring - Constructing - Diversifying - Connecting

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### Reshaping curriculum

Reflect:

*The greatest enemy to understanding is coverage.*

—Howard Gardner

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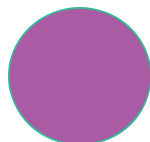
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### Fact and Concept

What is the difference?



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### Concept or Not

Which of the words are concepts and which of the words are not?

How would you describe the words that are concepts?

How would you describe the words that are not concepts?

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### Which are Concepts? Which are Facts?

Belonging	Pattern
Essay	Dinosaur
Paint	Plant
Time	Computer
Development	System
Structure	Growth
Book	Relationships
Animal	Networks

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### Concepts

Global  
Timeless  
Abstract  
Applicable in different situations or contexts  
Can be represented by more than one example  
Broad

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Facts  
Real  
Observable  
Tangible  
Verifiable  
Actual  
Certain

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Two Types of Instruction

**Topic Centered**  
Based on memorization of factual information.

Assumes this will lead to deeper understanding.

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Two Types of Instruction

**Concept Centered**  
Focus on linking information through the use of Conceptual Understandings

Facts are used to support and explain Conceptual Understandings

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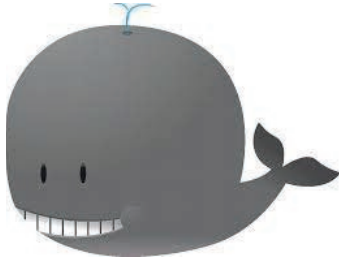
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### Whale Moment

What has been your whale moment?



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Studyladder



Dear Joey,

Have you checked out our NEW Whale Teaching Pack? Use these free resources to learn about whales with your students.

[Whale Teaching Pack >](#)

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**Included in this teaching pack:**

- Whale Themed Activities and Printables
- Facts About Whales
- Research Questions
- Games for students to play
- Interactive Science Activities
- English Activities
- Mathematical Activities
- Whale Classification
- Whale Features
- Whale Adaptations
- Whale Species
- Whales and People
- Environmental Issues: Whales
- Word Puzzles
- Measuring Whales
- Whale Art Ideas
- Whiteboard Material
- more...

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### Connect Extend Challenge

How are you **CONNECTED** to the ideas presented?

How are you **EXTENDED** by the ideas presented?

How are you **CHALLENGED** by the ideas presented?

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### What Would You Prefer:

Students name the different world wars, who was in them, the dates they occurred and the major events that took place.

**Or**

Students discuss the ideas of causality, power and conflict.

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### Moving From Topics to Concepts

CONTENT	CONCEPTS
dinosaurs	extinction, adaptation, cause and effect
geometry	relationships, design, measurement
world wars	conflict, causality, power
friends	relationships, friendship, belonging
plants	growth, needs, habitat
weather	cycles, patterns, systems
Ancient Rome	civilisation, development, technology

Table 1.7 Shifting from content to concepts

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Moving From Topics to Concepts

Topic	Concept
Games	
Painting	
Percussion	
Instruments	
Festivals	
Clothes	
Numeracy	
Text Types	

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Concepts

Why teach conceptually?  
Word Splash




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Concepts

Conceptual learning creates a cognitive framework that allows students to organise, retrieve and connect new and existing knowledge.




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### Concepts

Conceptual learning recognises that students are rich with possibilities and theories and recognises constructivism as a way to build on prior knowledge.



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### Concepts

Conceptual learning helps students see the link and relationships between facts, content and skills that lead to depth of understanding.



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### Concepts

Enables students to really understand in depth the concepts driving the unit and focuses the planning.



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Planning a Unit of Work: Is it Worth it?

**Why is this compelling?**

Compelling refers to the interest level and relevance to the age of the students. It requires thinking about the "WHY" for the students, looking at it through the eyes of the student. Why would a student be interested in learning about this?

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Planning a Unit of Work: Is it Worth it?

**Why is this significant?**

Significant refers to connections to student's real world. By learning about the topic what connections can they make to their world, in order to make sense of their learning.

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Planning a Unit of Work: Is it Worth it?

**How is this intriguing?**

Intriguing refers to the inquiry. It focuses on being able to capture their attention and curiosity in order to provide a context for student inquiry.

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Wiggins and McThighe

*"The standards are like the building code. Architects and builders must attend to them but they are not the purpose of the design. The house to be built or renovated is designed to meet the needs of the client in a functional and pleasing manner – while also meeting the building code along the way."*

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Structure of Knowledge

Conceptual Understandings



Concepts



Topic



Facts Facts Facts

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**Conceptual Understanding**  
 Include where appropriate some of the concepts you have chosen

**Selecting concepts**

**Develop 3-4 Understandings Goals**  
 What two to three big ideas do you really want students to understand about the unit.  
 Understanding Goals  
 Students will understand that....

**Ask**  
 What is the purpose?  
 Why is this compelling?

**Topic**  
 This may be derived from the curriculum

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**Developing Conceptual Understandings**

**Example One:** Developed with and curriculum coordinator and year level teachers at the Anglo American School of Moscow, Russia (with amendments)

**Topic/Facts**  
**Topic: Forces and Motion**  
 The facts for this unit came directly from the outcomes of a curriculum. When organizing and grouping the outcomes it was clear that there was the need for a unit on forces and motion.

**Why is the compelling?**  
 There is a direct connection between all movement and force

**Why is this significant?**  
 Forces are evident everywhere in our lives

**Why is this intriguing?**  
 Changes in forces impact movement that has application to our daily life

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**Understanding Goals**

**Students will understand:**  
 The relationship between forces and motion  
 Variables that impact motion  
 The application of forces in our lives

**Concepts**  
 Force, Variables, Motion, Application

The concepts are connected to the understanding goals.

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## Conceptual Understanding

Exploring the connection between **forces** and **motion** provides insight into their **application** and impact in daily life.

(using some of the concepts in the conceptual understanding)




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## Developing Conceptual Understandings

**Example Two:** Developed with the Physical Education team at the Australian International School Singapore (with amendments)

**Topic/Facts**

**Topic: Attack and Defense in Invasion Games**

The facts for this unit came directly from the ACARA physical education and health curriculum. When organizing and grouping the outcomes it was clear that there was the need for a unit on attack and defense in games.

**Why is the compelling?**

Utilizing attack and defense requires an understanding of space and team-work

**Why is this significant?**

Attack and defense are significant skills in most team sports

**Why is this intriguing?**

Success in sports requires cooperation and team-work

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## Understanding Goals

**Students will understand:**

The role of attack and defence in invasion games

The use of space in invasion games

How to effectively work as a team

**Concepts**

Attack, Defence, Cooperation, Space

The concepts are connected to the understanding goals.

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## Conceptual Understanding

Utilizing **attack**, **defence** and **space** in invasion games requires **cooperation** and effective team-work.




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## Developing Conceptual Understandings

**Example Three:** Developed with the Early Years team at International School of Kuala Lumpur, Malaysia (with amendments)

**Topic: Investigation**

Given the nature of early childhood education, it was felt that a topic on investigation was important as it connected to best pedagogy in early childhood.

**Why is the compelling?**

Investigation provides young children with opportunities to be curious, to inquire and to discover.

**Why is this significant?**

Through investigation and understanding the process we are able to discover more.

**Why is this intriguing?**

Young children love to investigate and should be provided with provocations that promote investigation. It enables them to discover more about themselves and their world.

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## Understanding Goals

**Students will understand:**

- The purpose of investigation
- The ways we can investigate
- What we can discover through investigation

**Concepts**

Investigation, Process, Discovery

The concepts are connected to the understanding goals.

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### Central Idea

The opportunity for exploration and **discovery** can take place through the **process** of **investigation**.




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### Conceptual Understanding

Include where appropriate some of the concepts you have chosen

#### Selecting concepts

#### Develop 3-4 Understandings Goals

What two to three big ideas do you really want students to understand about the unit.  
Understanding Goals  
Students will understand that....

#### Ask

What is the purpose?  
Why is this compelling?

#### Topic

This may be derived from the curriculum

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### Understanding Goals/Lines of Inquiry

#### When developing understanding goals you need to ask:

What is it I want my students to understand at the end of the unit?  
What is it that is important about this unit?  
What 3-4 big ideas do I want them to come away with?  
What learning at this end of the unit do I want them to remember?

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### Selecting Concepts

With each concept selected there should be a clear connection to one or more of the understanding goals.

When selecting concepts it is important that there is a shared understanding of the meaning of the concept/s in the context of the learning.

The selected concepts will assist in forming the conceptual understanding.

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### Conceptual Understandings

**A checklist to assist in developing Conceptual Understandings:**

- Are the selected concepts (not necessarily all) included in the statement?
- Is the statement written as one sentence?
- Is the statement globally transferrable?
- Is it written as a broad statement?
- Does it encompass the understanding goals?
- Is it written in a way that it provides a level of complexity?
- Is the statement of interest to the students being taught?

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### Conceptual Understanding

Include where appropriate some of the concepts you have chosen

#### Selecting concepts

#### Develop 3-4 Understandings Goals

What two to three big ideas do you really want students to understand about the unit.  
Understanding Goals  
Students will understand that....

#### Ask

What is the purpose?  
Why is this compelling?

#### Topic

This may be derived from the curriculum

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### Critique Groups



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### Reflection and Critical Peer Review

Using the criteria for a conceptual understanding and provide feedback.



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### Headline

If you were to write a newspaper headline that summed up your ideas about concepts what would it be?



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Available from Hawker Brownlow Education

**Taking the Complexity out of Concepts**

This book is a practical resource designed by Innovative Global Education (IGE) to assist educators in making the shift from a content-based curriculum to a conceptual curriculum. To meet the demand for better professional learning materials devoted to conceptual learning, IGE has formulated the IGE Model for Formulating Conceptual Understandings and the three-stage IGE Template for Planning Conceptual Learning. In support of these pivotal resources, the book also includes a number of case studies adapted from IGE's professional learning work with schools to serve as exemplars of how real-life educators are actually using the resources in their classrooms.

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