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Planning Outstanding Inquiry Units – The Next Step

PreparED Oct 9 2014

Dr Adrian Bertolini



Intentions of Today's session

To **review what it means** to be an Independent Learner and Learner Centred Learning

To **review how rigorous inquiry based learning** can support the development of independence

To explore **how to develop and use formative rubrics** as structures to support learner centred learning



**ACTIVE
LEARNING
MAKES FOR
FUTURE
SUCCESS**



What **YOUR** job is today

Be **open**, **honest** and **participate**



As the range of
viewpoints and ideas
are presented

Try them on,
Think about them,
Discuss them &
Learn what you Learn!



Today's workshop



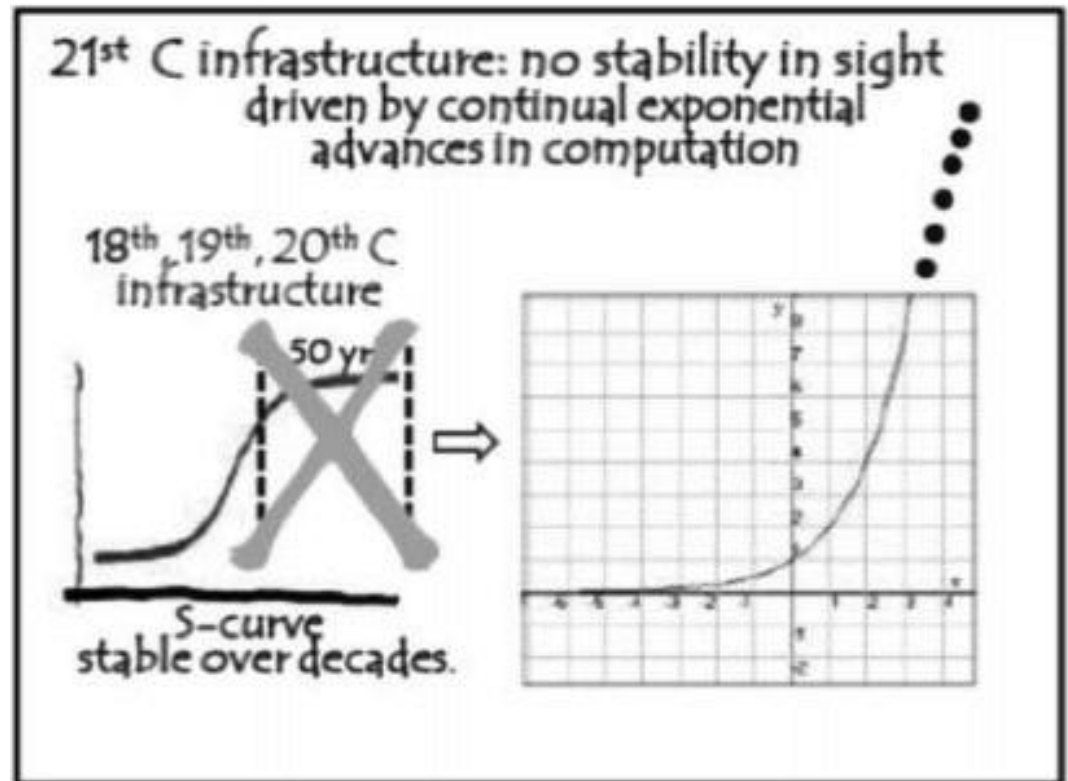
Powerful Learning - Independence
and Learner Centred Learning

Hattie and Key Approaches

Assessment and Developing
Formative Rubrics

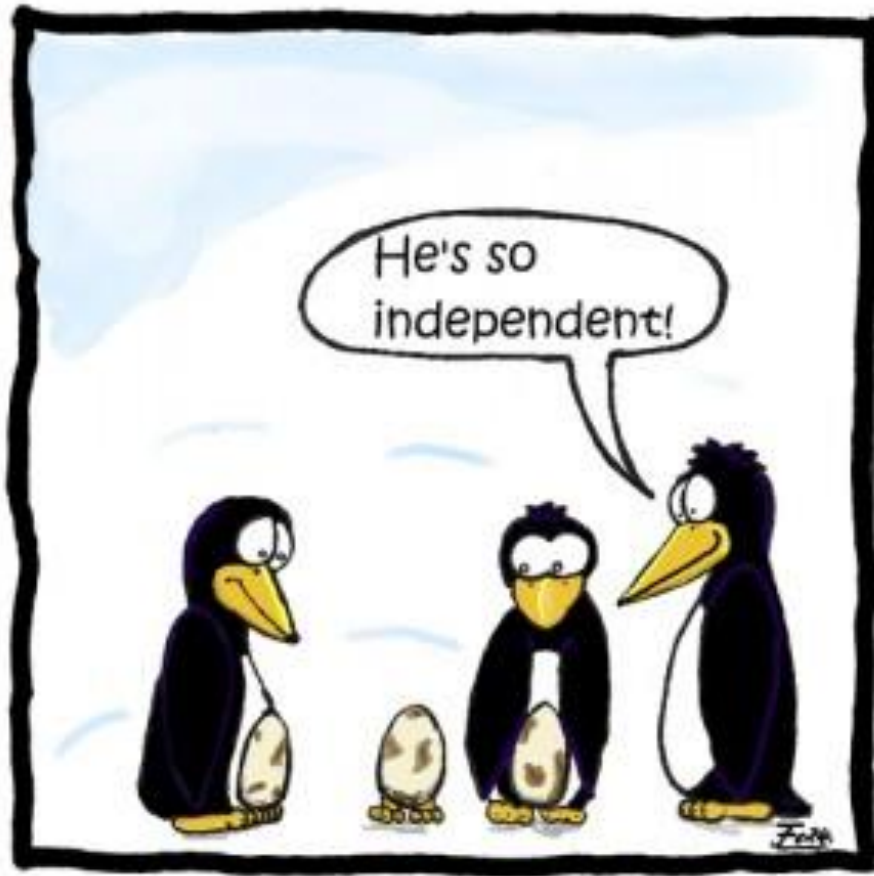
Why develop independent learners?

The future we
are preparing
them for is
rapidly changing





Last session in March



Last time we explored the **skills, attitudes, and habits** that make someone an independent learner



Last session in March

WAYS OF THINKING

1. Creativity and innovation
2. Critical thinking, problem solving, decision making
3. Learning to learn, Metacognition

WAYS OF WORKING

4. Communication
5. Collaboration (teamwork)

TOOLS FOR WORKING

6. Information literacy
7. ICT literacy

LIVING IN THE WORLD

8. Citizenship – local and global
9. Life and career
10. Personal and social responsibility – including cultural awareness and competence.

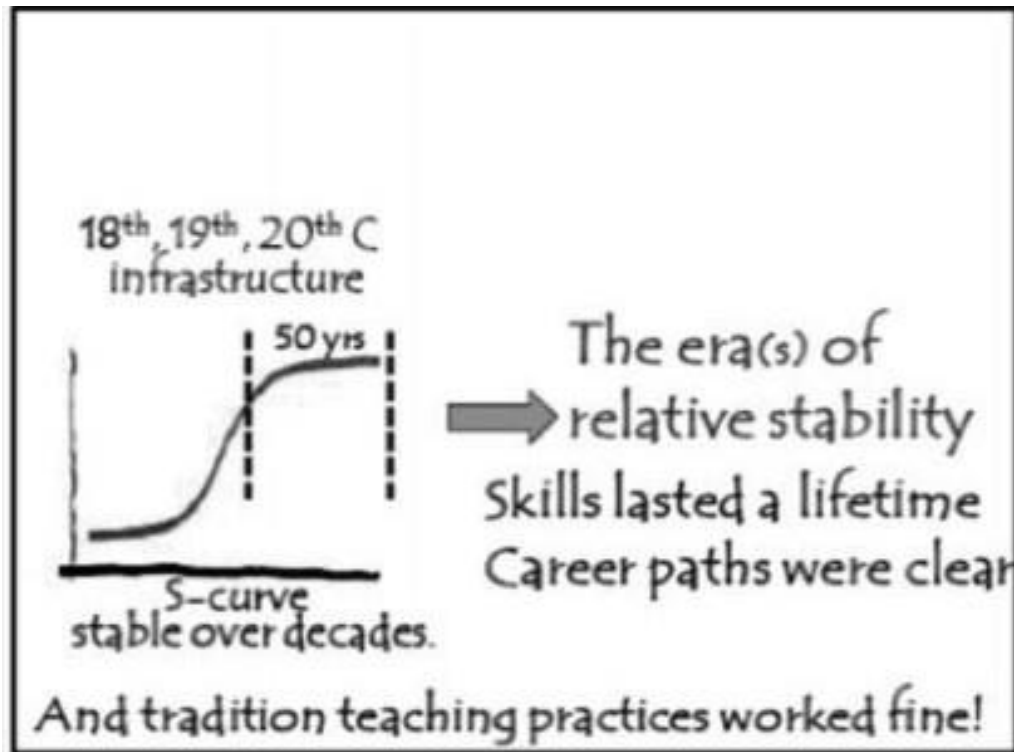




AusVELS iteration 2 – coming soon

Learning Areas	General Capabilities
English	Critical and creative thinking
Mathematics	Personal and social capability
Science	Ethical understanding
Humanities and Social Sciences (History, Geography, Civics & Citizenship, Economics and Business)	Intercultural understanding
Languages	
The Arts (Dance, Drama, Media Arts, Music, Visual Arts)	
Health and Physical Education	
Technologies (Digital Technologies, Design and Technologies)	

Challenge is ...

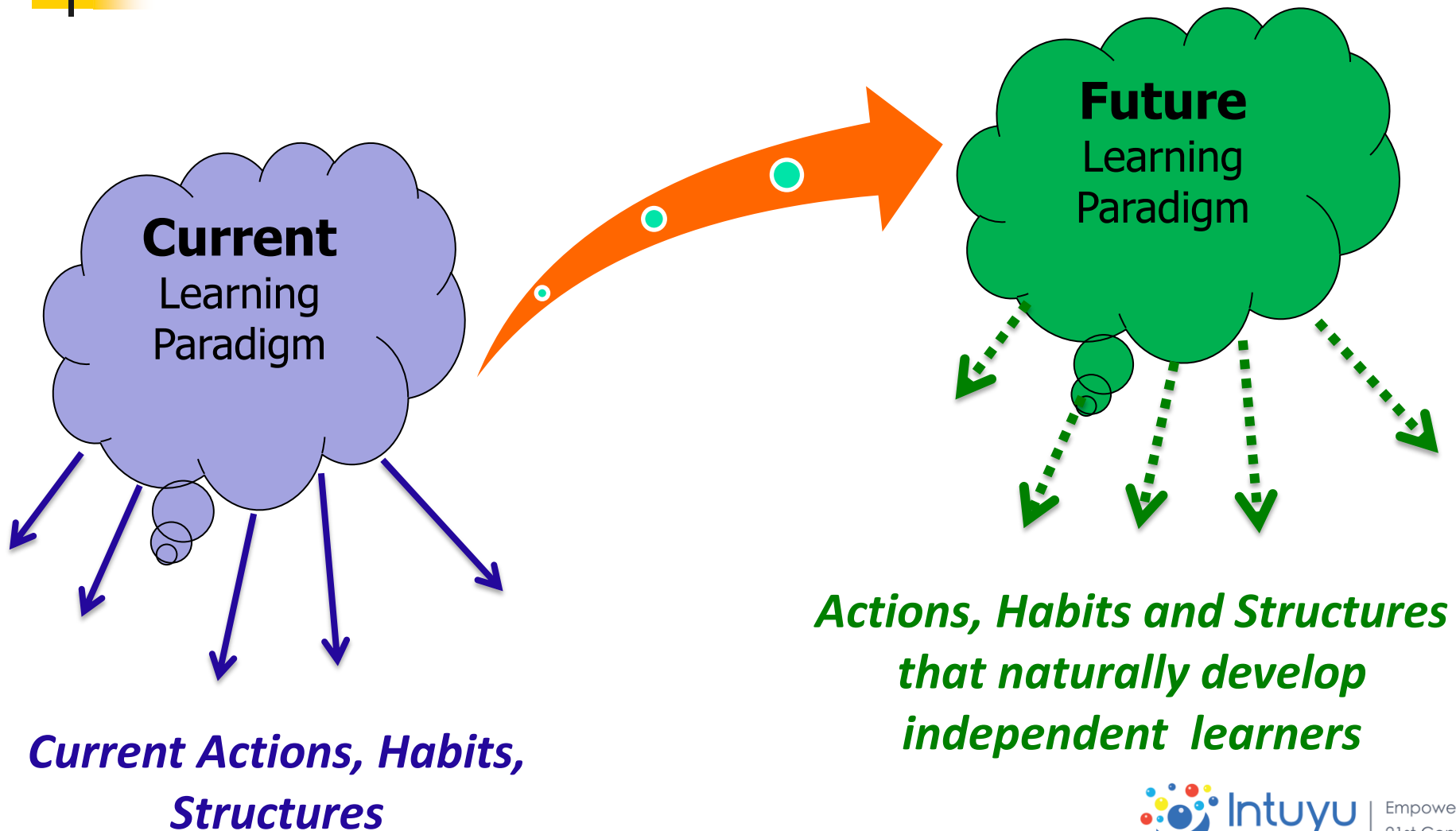


Much of our
thinking, attitudes
and habitual
practices as
teachers have
arisen from this era

Most schools now working upon this

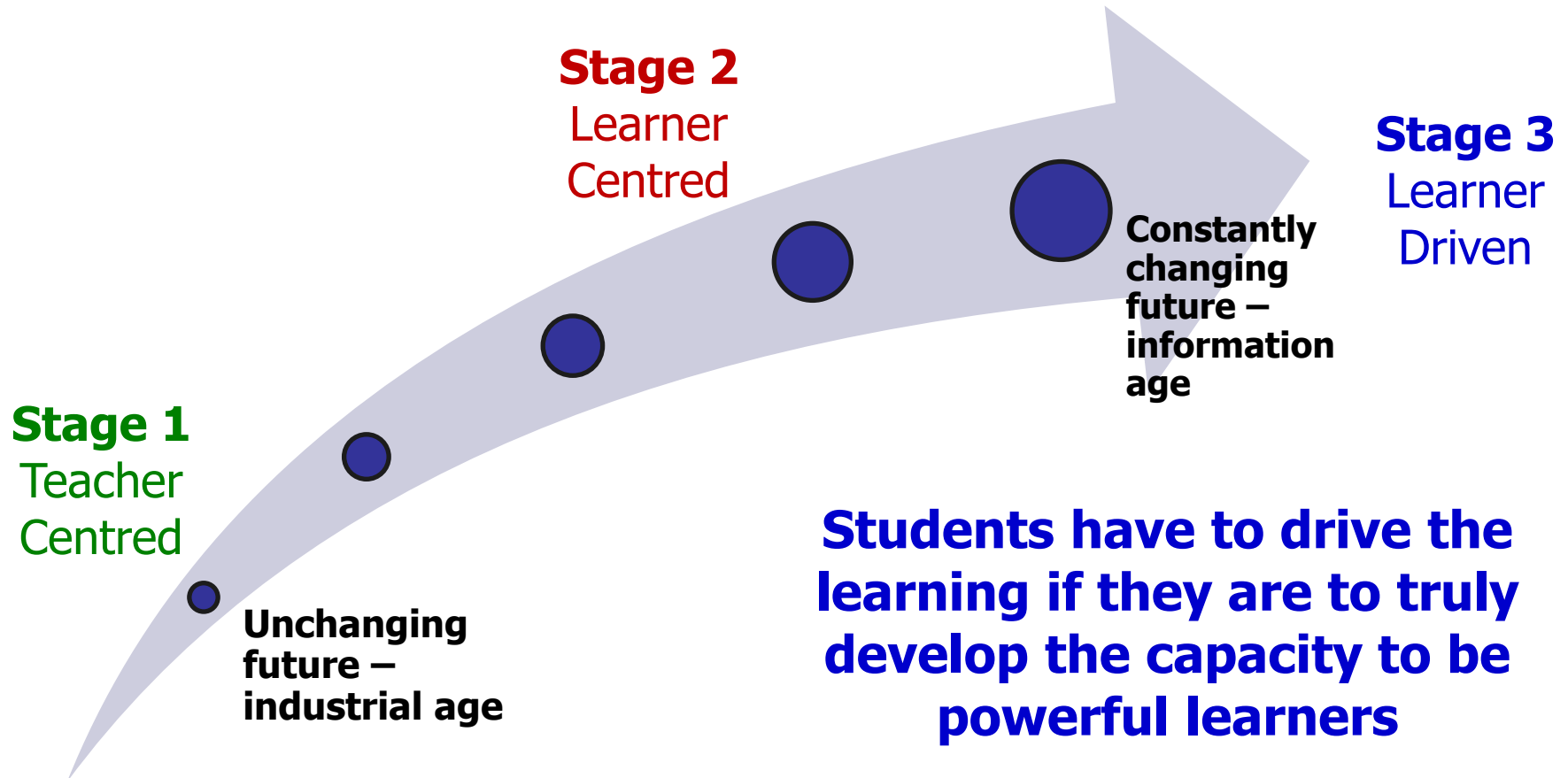
Nov 2012 Skills v3		F	1	2	
Organise	Learning How	O.F.1 I can ask my teacher to show me how to do this	O.1.1 I can ask people I know how to do this	O.2.1 I can try a strategy my teacher has shown me	O.3
		O.F.2 I can respond to my teacher's prompts		O.2.2 I can ask a range of people how to do this	O.3
	Time	O.F.3 I can finish a task in a set time	O.1.2 I can get the things I need before I start	O.2.3 I can say what I am going to do before I do it	O.3
				O.2.4 I can estimate how long a task will take	O.3
	Information	O.F.4 I can use my senses to get information	O.1.3 I can sort the information that I find	O.2.5 I can try different ways of sorting the information	O.3
		O.F.5 I can spot things that are similar and things that are different	O.1.4 I can make and record observations	O.2.6 I can find the information that matters	O.3
		O.F.6 I can record information on a template	O.1.5 I can find information in more than one place	O.2.7 I can respond to teacher questions about what I have found out (conclusions)	O.3
				O.2.8 I can record my observations in a way that suits the information I have	O.3
				O.2.9 I can state the main idea from information I have collected	

The journey we are upon





Our goal is to develop skilled learners



Teacher Centred Environment	Learner Centred Environment	Learner Driven Environment
<ul style="list-style-type: none">• High Effort by Teacher• Passive Learners• Low motivation and resilience• Low learner responsibility• High content focus• Low skill development focus• Differentiation is driven by teacher and hard work		

Teacher Centred Environment	Learner Centred Environment	Learner Driven Environment
<ul style="list-style-type: none"> • High Effort by Teacher • Passive Learners • Low motivation and resilience • Low learner responsibility • High content focus • Low skill development focus • Differentiation is driven by teacher and hard work 	<ul style="list-style-type: none"> • Medium Effort by Teacher focused on developing the scaffolding prior to learning occurring • Co-construct rich task learning with learners • Growing Active Learners • Varying Motivation and Resilience • Increasing Learner Responsibility • Focus on developing skills in preference to just delivering content • Differentiation is co-constructed • Backward planning 	

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Today's workshop



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Hattie and Key Approaches

Assessment and Developing
Formative Rubrics



Rank from 1 to 11

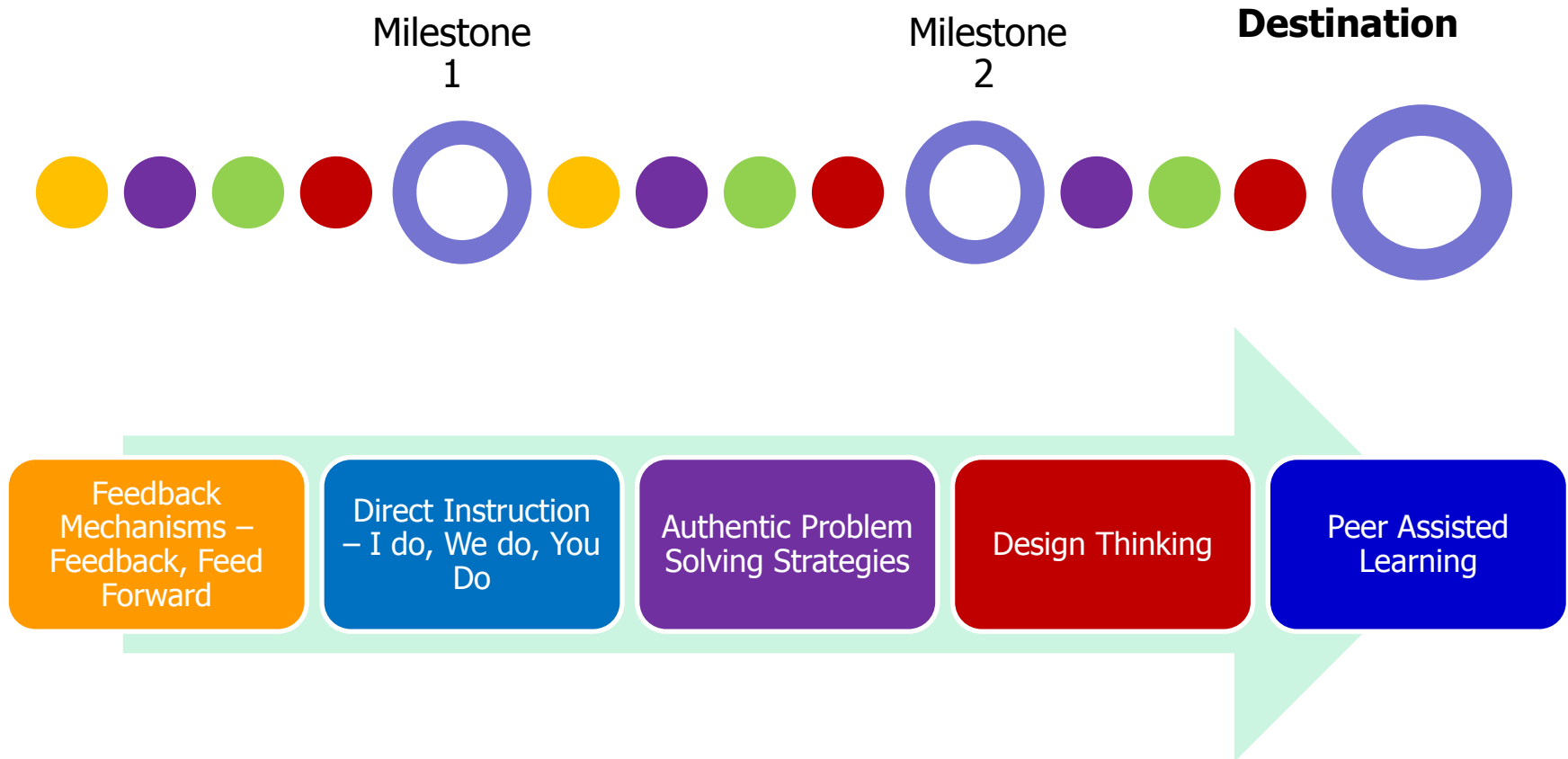
Approach	Rank (associated with the most student improvement)
Peer-Assisted Learning / Tutoring	
Explicit teacher-led instruction / Direct Instruction	
Concrete feedback to parents	
Emphasizing real-world applications	
Worked Examples	
Problem Solving Teaching	
Provide feedback or recommendations to students	
Ability Grouping	
Ability Grouping for Gifted Students	
Attitude to Subject	
Expectations	

Rankings and Effect Size

Approach	Rank	Effect Size (Hattie)
Peer-Assisted Learning / Tutoring	5	0.55
Explicit teacher-led instruction / Direct Instruction	3	0.59
Concrete feedback to parents	7	0.43
Emphasizing real-world applications	11	-0.04
Worked Examples	4	0.57
Problem Solving Teaching	2	0.61
Provide feedback or recommendations to students	1	0.73
Ability Grouping	10	0.12
Ability Grouping for Gifted Students	9	0.30
Attitude to Subject	8	0.36
Expectations	6	0.44



Teaching Students to Drive





Planning Authentic Inquiry Units

“Inquiry is a ***systematic investigation or study*** into a worthy question, issue, problem or idea.”

www.galileo.org/inquiry-what.html

Authentic Learning is ...

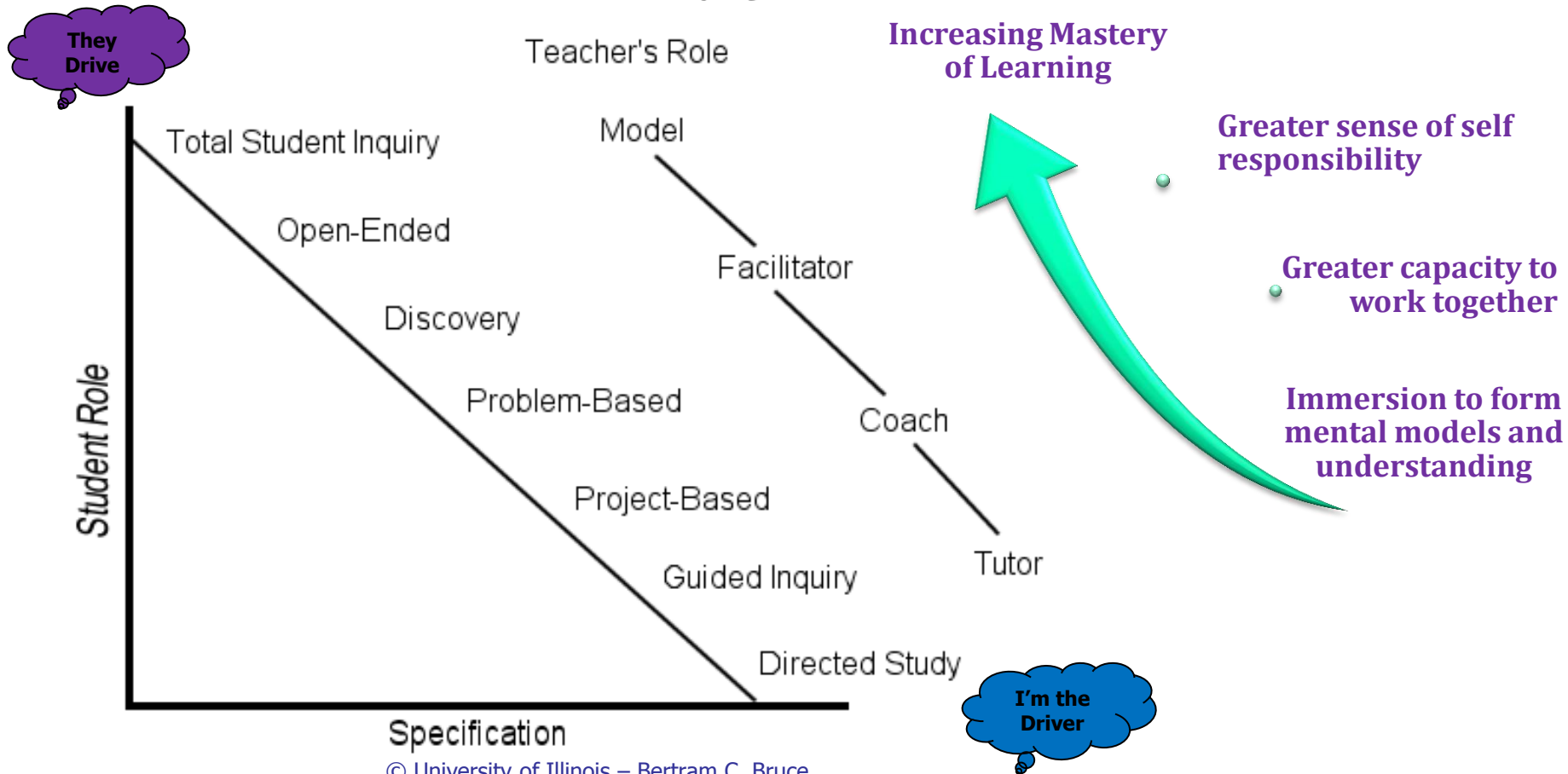
“Construction of knowledge, through disciplined inquiry, to **produce discourse, products and performances and that have meaning beyond success in school.**”

Wehlage, Newman & Secada

Care of www.inquiringmind.co.nz

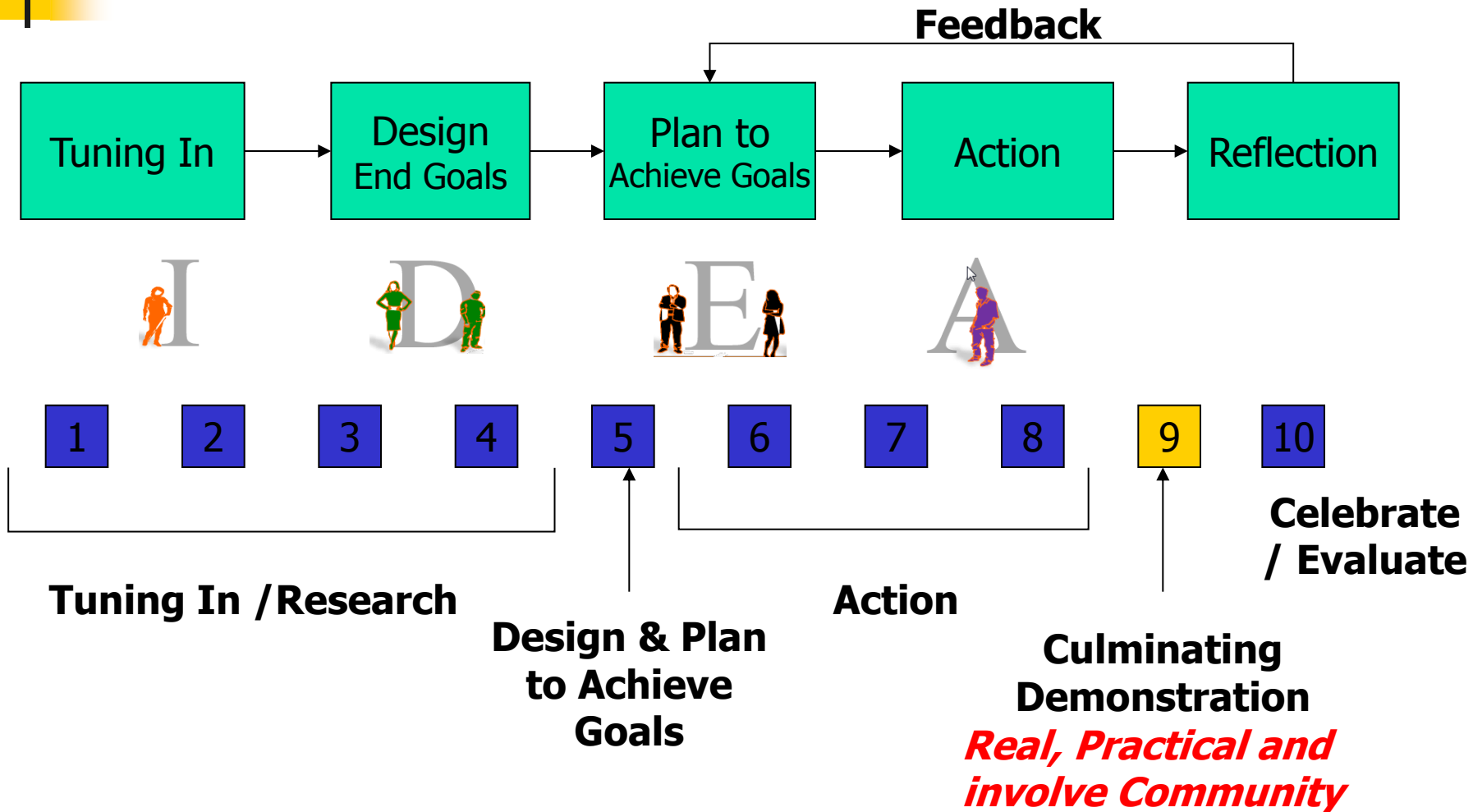
Spectrum of Inquiry-Based Learning

The Path Towards Student Inquiry



© University of Illinois – Bertram C. Bruce

A Structure for Learning Tasks



Flow of Planning



Identify
Desired
Results

Determine
Acceptable
Evidence

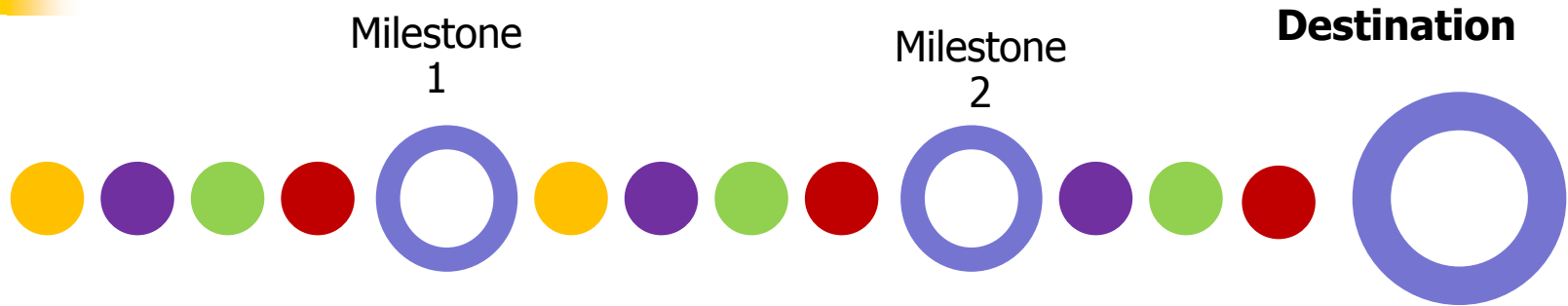
Plan Learning
Experiences
and Instruction

**Where are
we going?**

**How do I
know we have
arrived?**

**How are we
getting there?
The MAP**

Process of Planning



1. Extract Skills & Learning Focus / Elaborations from AusVELS
2. Identify what you want students to **know** and be **able to do** by the end
3. Create a logical sequence of key **understandings**
4. Design a **Project** in which the students will authentically demonstrate their skills and understanding (assessable)
5. Identify the steps (**checklist**) to achieve the goals of the project (unpacks the thinking – links to learning activities)
6. Create a **Formative Rubric** (unpack what the skills look like at different stages – links to learning activities)

Downloads



**Download the 6 Steps
to Planning
Outstanding Units
guide (and look at
examples) at**

www.intuyuconsulting.com.au
Learning Resources



Today's workshop



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Assessment – Diagnostic, Formative, Summative

Research by John Hattie and Steven Dinham

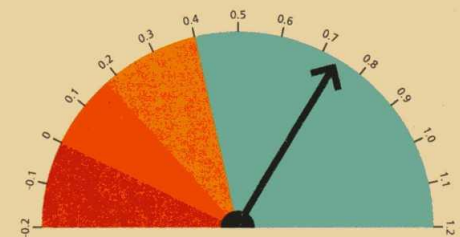
"We are prepared to state categorically that **if you focus on providing students with improved, quality feedback in individual classrooms, departments and schools you'll have an almost immediate positive effect.**"



In all areas where people are interested in performance, it is the embedded feedback systems that allow the greatest improvement.

Effect Size

The Effect Size for feedback is 0.73 – in the zone of desired effects.





How do we know someone has learnt something?



WE DON'T!

*The best we can do is
infer that they have
learnt something from
particular behaviour
being demonstrated
over a period of time.*



Surface vs Deep Learning

*"When we experience **surface learning**, we make minor adjustments or try something out for a while, but we don't take significant steps forward.*

***Deep learning**, on the other hand, is learning that changes our assumptions about how we do what we do.*

***Deep learning** gets to the core of who we are, and because **deep learning** leads to profound change, it really does make a difference."*

Jim Knight, University of Kansas Center for Research on Learning



Developing Active Learners - Rubrics

What is your impression of this Grade 3 summative rubric for assessing a magazine?

Needs Improvement	Good	Excellent
Labelled and formatted images were included in each section	Appropriate, labelled and formatted images were included in each section.	Appropriate, well-labelled and well-formatted images were included in each section.



Developing Active Learners - Rubrics

What about this one?

Essential	Developing	Capable
Labelled and formatted images were included in each section	Plus/ Chosen images were appropriate to the material in each section	Plus/ Labels on images described the image and elaborated on a point in the text of that section Images are formatted on the page in a way that made the page aesthetically pleasing.

Developing Active Learners - Rubrics

The purpose of the rubric is to distinguish a skill / concept or product so that it becomes distinct for the learner.

Distinct (adj):
"recognizably **different**
in nature from something
else of a **similar type**"



*You need to be able to clearly articulate **what it looks like** so that the student (and yourself) are clear*

Making Rubrics Distinct - Aspect #1

A strong formative rubric **progressively unpacks** and makes distinct what the skill, concept or product looks like to the learner.

	F	1	2	3	4	5
<u>Questioning</u>	Can make comments with teacher prompting	Is able to form a question but sometimes may not be relevant	Asks relevant questions	Asks open-ended questions	Uses vocabulary of topic	Asks fat questions
Relevancy			Uses questions to get more information	Uses prior knowledge in asking a new question	Uses questions to clarify understanding	Asks questions that expand the conversation
Question or not						
Open or Closed						
Fat or Thin		Makes relevant comments with teacher prompting	Makes relevant comments and concrete suggestions			
Ability to respond to questions						
Vocabulary						

Making Rubrics Distinct – Secondary Example

Skill	Beginning	Developing	Capable
Questioning and Creating Questions	<p>Ask and develop questions that are:</p> <ul style="list-style-type: none"> • Open • Relevant to topic • Worthwhile finding out • Require evidence to justify 	<p><i>Plus...</i> Ask and develop questions that also:</p> <ul style="list-style-type: none"> • Attempts to link new knowledge to prior knowledge • Uses appropriate historical terms and language • Are clear and easy to understand what is being looked for 	<p><i>Plus...</i> Ask and develop questions that also:</p> <ul style="list-style-type: none"> • Will lead to informed and defensible answers • Are refined as new knowledge is acquired
Gathering and Using Sources as evidence in an argument	<p>Is able to identify what is a primary source and what is a secondary source</p> <p>Use a single word or question in a search engine to select a random link and scan to locate information</p> <p>Arguments are presented with</p>	<p><i>Plus...</i> Can evaluate the sources for reliability and consistency</p> <p>Uses three search strategies, as presented in the workshop, that locates information</p>	<p><i>Plus...</i> Can evaluate the sources for bias and provenance</p> <p>Uses a range of different sources (museum material, podcasts, videos, music, handouts, poster) to locate alternative information</p>

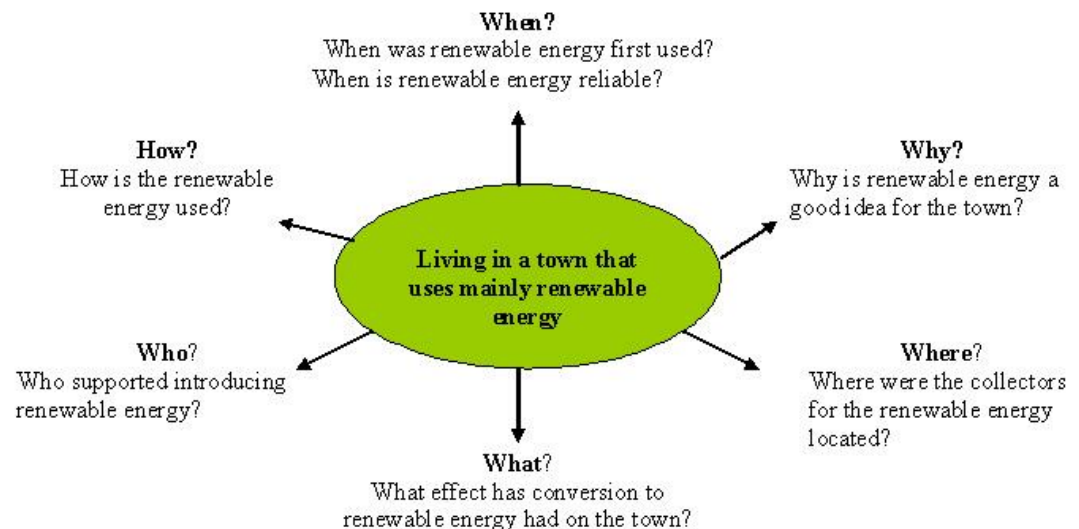
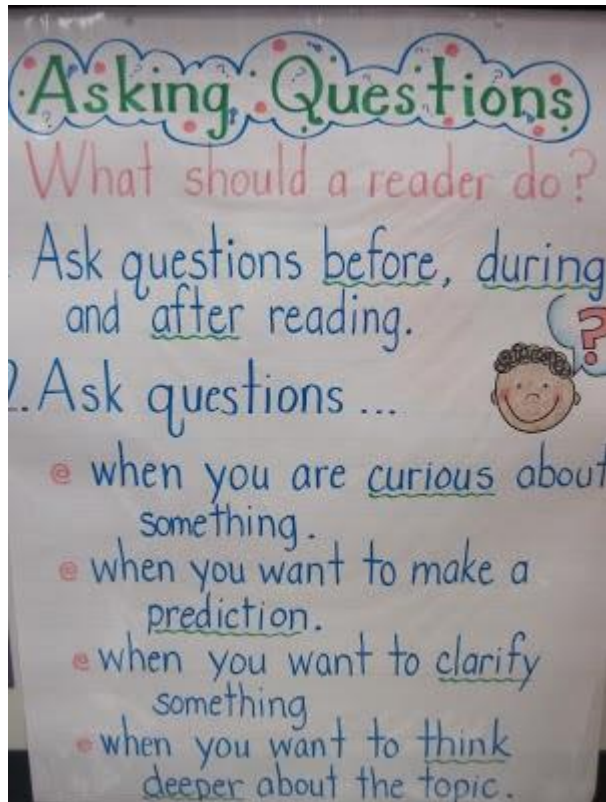
Making Rubrics Distinct – Aspect #2

A rubric by itself is insufficient – it must be **supported by discussions and examples** which model the different levels

Skill	Essential	Developing	Capable	Teacher Practices / Modelling / Graphic Organisers
<u>Questioning</u> Relevancy Question or not	Is able to form a question	Plus... Question is related to the topic Uses questions to get more information	Plus... Question is open ended Uses questions to clarify understanding	<ul style="list-style-type: none">• 5 Whys• Kids only get to ask 2 qns in a session (so they need to think about them)• Brainstorming possible questions - WonderWall• Modelling• Saying the information you have heard as forming next question• Explicit teaching of open ended questions• Reference rubric in class

Making Rubrics Distinct – Aspect #2

A rubric by itself is insufficient – it must be **supported by discussions and examples** which model the different levels





Making Rubrics Distinct – Aspect #3

A rubric is a tool to **enable students to drive** their learning and develop their capacity and mindsets such that they see learning as a progression towards mastery

- Positive Language
- Develops learners to be meta-cognitive
- Develops learners to be intrinsically motivated
- Encourages learners to put in effort (growth mindset)
- Not about good or bad, right or wrong, better or worse
- Can co-construct rubrics with learners



Opportunity to design a formative rubric

You will now have an opportunity to unpack a skill / expected knowledge for yourselves using a template

Working in teams of 3 pick a skill or understanding and a target year level that you want to unpack that skill for

Use the appropriate AusVELs progression points to guide you to articulate what it would look like at Essential (minimum acceptable), Developing, and Capable

Some examples and useful materials are on your tables to assist



Rubric Template

Rubric Grid – Teacher Version

Skill		Essential	Developing	Capable	Teacher Practices / Modelling / Graphic Organisers
			<i>Plus...</i>	<i>Plus...</i>	What strategies and approaches will you use to develop these skills in your students?
			<i>Plus...</i>	<i>Plus...</i>	
			<i>Plus...</i>	<i>Plus...</i>	
			<i>Plus...</i>	<i>Plus...</i>	



Unpacking a skill – Grade 5 History

Progression points in AusVELS around History

- **Level 4:** They pose a range of questions about the past. They identify sources (written, physical, visual, oral), and locate information to answer these questions.
- **Level 4.5:** Develop questions which might be asked about and suggest types of sources which might be used to answer their questions. They record information from a range of sources.
- **Level 5:** When researching, students develop questions to frame an historical inquiry. They identify a range of sources and locate and record info related to this inquiry. They examine sources to identify points of view.

This progression can be broken down into two skill areas:

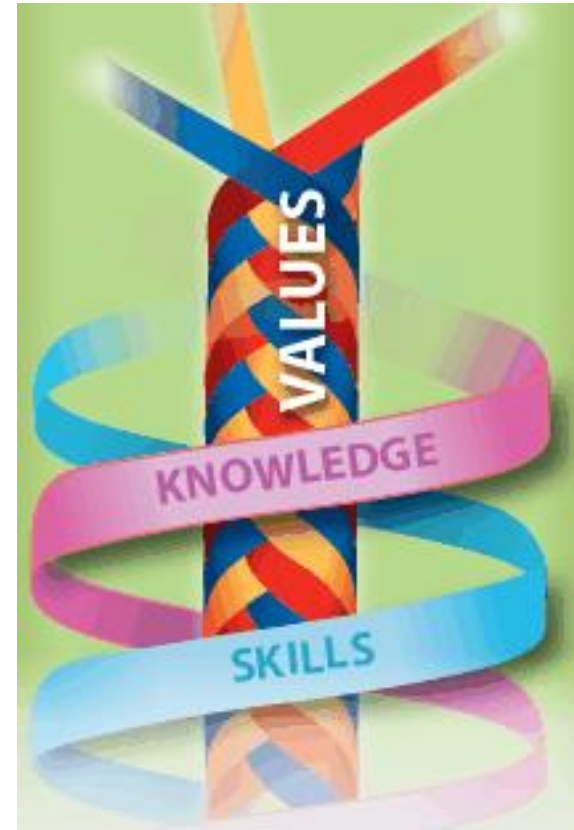
- **Questions** – posing, developing, and framing progression
- **Sources** – identifying, locating, recording, points of view

Creating Activities, Structures and Habits

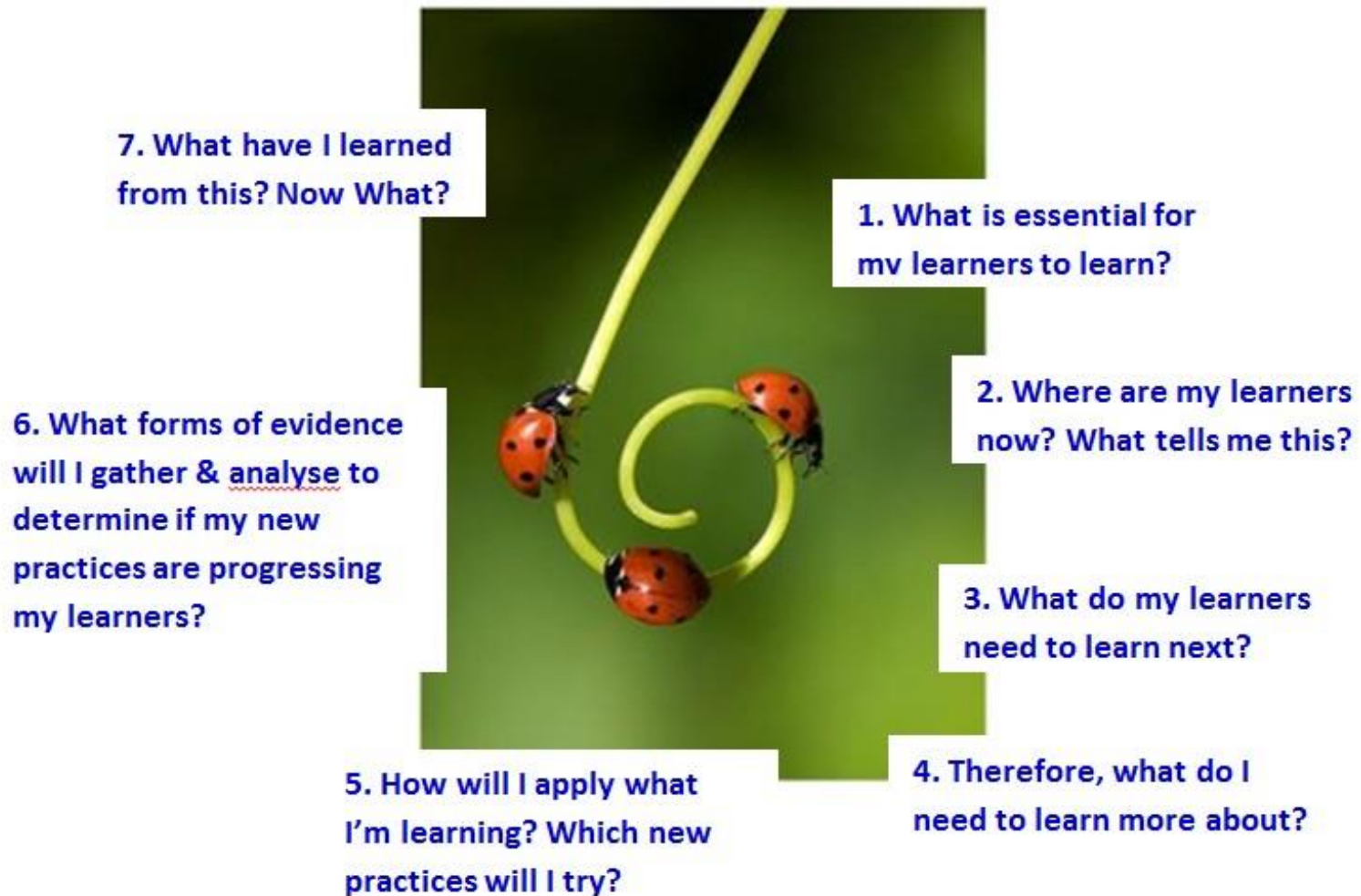
Rubric Grid – Teacher Version

Skill		Essential	Developing	Capable	Teacher Practices / Modelling / Graphic Organisers
			<i>Plus...</i>	<i>Plus...</i>	What strategies and approaches will you use to develop these skills in your students?
			<i>Plus...</i>	<i>Plus...</i>	
			<i>Plus...</i>	<i>Plus...</i>	
			<i>Plus...</i>	<i>Plus...</i>	

Our own habits – linear vs spiral learning



Our own habits





More information and examples

www.intuyuconsulting.com.au
Learning Resources

