

13th Annual

Thinking & Learning Conference

DR CHRIS WEBER

Friday 20 May

**The Digitally Enhanced Learning
Transformation: Blended learning:
The era of differentiation for all**
Session 3

MELBOURNE

DR CHRIS WEBER

Dr Chris Weber is a consultant and administrative coach. He delivers trainings and presentations on pyramid response to intervention (RTI), a tiered approach that centres on professional learning community (PLC) concepts and strategies to ensure that every student receives the support necessary to succeed. Chris also offers workshops and presentations that provide the tools educators need to build and sustain PLCs.



As principal of RH Dana Elementary School in California, Chris was the leader of a highly effective PLC. Together with his staff, he lifted the school to remarkable levels of success, with gains over four years that were among the top 1 per cent in the state. He credits this achievement to the daily practise of key principles: focusing on student engagement, maximising instructional time, reallocating resources and developing systematic student support programs based on RTI.

Chris has held a number of teaching and leadership roles in both primary and secondary schools. He was director of instruction for the Garden Grove Unified School District in California, which was the 2004 winner of the prestigious Broad Prize for Urban Education.

A message from Hawker Brownlow Education

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CODE: MELCW0103
0516

**The Digitally Enhanced Learning Transformation: Blended
learning: The era of differentiation for all**

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Why should we commit to continuous improvement and to rethinking our supports on behalf of all students?

Our commitment must be beyond *teaching* all students; we must ensure all students are future ready.

- In the US in 2012, 67% of all ACT-tested high school graduates met the English College Readiness Benchmark, 52% of graduates met the Reading Benchmark; 46% met the Mathematics Benchmark; 31% met the Science Benchmark; and 25% met the College Readiness Benchmarks in all four subjects (ACT, 2012).
- In other words, a fraction of high school graduates are ready for college and career. And, over 20% of students do not graduate from high school (National Center for Education Statistics, 2015).

What is the sense of urgency for College and Career Readiness?

Yesterday	Today
<ul style="list-style-type: none"> • Work for large company • One job for life • Steadily increasing pay • Stay in hometown • Secure retirement • Well-paying jobs available in low-skill professions • No real international competition for good jobs 	<ul style="list-style-type: none"> • Work for small company • Multiple jobs • Pay freezes/cuts • Move for work or career • Uncertain retirement • Low-paying jobs in low-skill professions • International competition for good jobs

(Conley, 2014)

- 1 in 3 students who enroll in either a four-year or two-year college will transfer at some point.
- 65 to 85 percent of students will change their majors at least once.
- Young adults will change jobs an average of seven times from the age 20 to 29.
- The result is reduced lifetime income and diminished career development.

(National Association for College Admission Counseling, 2010; ACT, 2005; US Department of Labor Statistics, 2010)

What are the attributes of College and Career Readiness?

Think

- Beyond retaining and applying information, students process, manipulate, assemble, reassemble, examine, question, look for patterns, organize, and present.
- Students develop and employ strategies for problem solving when they encounter a challenge. Five key strategies are:
 - Problem formulation
 - Research
 - Interpretation
 - Communication
 - Precision and accuracy

Know

- Students possess foundational knowledge in core academic subjects and an understanding of:
 - Connections and structures between and within subjects
 - The necessity for, and implications of, effort and a growth mindset
 - Organizing content
 - Identifying key ideas
 - The inherent value of learning

Act

- Students employ skills and techniques to enable them to exercise agency and ownership as they successfully manage their learning.
- Students gain expertise through the regular and integrated application and practice of key learning skills and techniques. Student agency rests upon the following:
 - Goal setting
 - Persistence
 - Self-awareness
 - Motivation
 - Self-advocacy
 - Progress monitoring
 - Self-efficacy
- Students develop habits that allow them to succeed in demanding situations:
 - Time management
 - Study and test-taking skills
 - Note taking
 - Memorization
 - Strategic reading
 - Collaborative learning
 - Technological proficiencies

Go

- Students preparing for a college and careers develop skills to navigate challenges, including:
 - Contexts: Their motivations and options for educational programs after high school.
 - Procedures: The logistics of admissions and application processes.
 - Finances: The costs of further education and financial aid options.
 - Cultures: Norms in schools, the workplace, and postsecondary settings.
 - Interpersonal: Advocating for oneself in complex environments.

What do employment leaders seek in today's candidates?

1. Problem solving (50%)
2. Team-working (35%)
3. Communication (32%)
4. Critical thinking (27%)
5. Creativity (21%)
6. Leadership (18%)
7. Literacy (17%)
8. Digital literacy (16%)
9. Foreign language (15%)
10. Emotional intelligence (12%)

[The Economist's Intelligence Unit and Google's (Tabary, 2015) survey of business executives regarding the skills most needed in today's workplaces (the percentage of respondents who selected each skill is reported in parenthesis)]

What are the essential skills of the 21st Century?

- Creativity and innovation
- Critical thinking and problem solving
- Communication and collaboration
- Information and media literacy
- Technological literacy
- Flexibility and adaptability
- Initiative and self-direction
- Social and cross-cultural skills
- Productivity and accountability
- Leadership and responsibility

(Partnership for 21st Century Skills, 2011)

What is the efficacy of Systems of Support for Rigorous Learning and response to intervention?

Benjamin Bloom's Mastery Learning

Tier 1	Effect Size of 0.4 standard deviations
Tier 1 + Tier 2	Effect Size of 1.0 standard deviations
Tier 1 + Tier 2 + Tier 3	Effect Size of 1.6 standard deviations

(Bloom, 1968; 1984)

John Hattie's Visible Learning (2012)

Student self-assessment	Effect Size of 1.44 standard deviations
Response to intervention	Effect Size of 1.07 standard deviations
Formative teacher evaluation	Effect Size of 0.91 standard deviations
Feedback	Effect Size of 0.75 standard deviations
Metacognition	Effect Size of 0.69 standard deviations
Direct instruction	Effect Size of 0.59 standard deviations
Peer tutoring	Effect Size of 0.55 standard deviations

What are the elements of a System of Support for Rigorous Learning?

Schools design, schedule, and provide supports to students that are:

- **Differentiated:** Teaching and learning cycles for grade-level and course-specific behavioral and academic priorities for all students. Teachers respond to a student's unique learning needs by making adjustments to process, content, product, and environments based on a student's interests, learning profile, and readiness levels. These supports are often described as Tier 1.
- **Individualized:** Timely and targeted supports for greater levels of student mastery of academic and behavioral priorities, so that students don't fall behind (or further behind) and so students can achieve reach greater depths of understanding. If differentiation is the *how*, then individualization is the *when*. Learning progresses at different speeds; some students may need to review previously covered material, while others may be ready to immerse themselves in a certain topic. These supports are often described as Tier 2.
- **Personalized:** Intervention and enrichment to meet students' at the forward edge of their zones of proximal development; intensive supports to meet significant deficits in foundational skills AND opportunities for students to exercise choice over the *what* and *how* of passions into which they will dive deeply. Extending the metaphor, if differentiation is the *how* and individualization is the *when*, the personalization is the *where* – as in, where are students in their learning journey. Students who are not yet performing at expected levels, due to significant deficits in foundational skills, receive targeted and intensive supports at the leading edge of their zone of proximal development to close the gap. Students who are meeting and exceeding age and grade expectations dig deeper into areas of interest. All students' experiences are tailored to preferences and interests; support is paced to students' unique needs. Students are involved in the creation and monitoring of their learning path. These supports are often described as Tier 3.

What are the goals of Systems of Support for Rigorous Learning?

While US graduation rates have increased to 80% in many districts, yet less than 40 percent of these graduates are ready for math and reading at the college level (The New York Times, 2015). In Australia, graduation rates have decreased from 80% to 70% in the past 20 years (Lamb, Dwyer, & Wyn, 2010).

Our goals must be:

- Consistently defining college and career readiness for all.
- Improving pedagogies, practices, and strategies to meet these readiness goals.
- Measuring staff and student progress toward these goals and adjusting when necessary.
- Ensuring all students are progressing toward college and career readiness.

How will we design Systems of Support for Rigorous Learning into the fabric of our schools?

Traditional daily schedules and our allocation of time require revision. Here are a few options that we are using within schools to provide differentiated, individualized, and personalized supports:

Possible Secondary Block Scheduling (Alternating days)

Period 1/2	8:00	10:00	Differentiated – 60 minutes <i>5 minute passing</i> Individualized – 25 minutes <i>5 minute passing</i> Personalized – 25 minutes
Period 3/4	10:10	12:10	Differentiated – 60 minutes <i>5 minute passing</i> Individualized – 25 minutes <i>5 minute passing</i> Personalized – 25 minutes
	12:10	12:50	Lunch
Period 5/6	12:50	2:50	Differentiated – 60 minutes <i>5 minute passing</i> Individualized – 25 minutes <i>5 minute passing</i> Personalized – 25 minutes

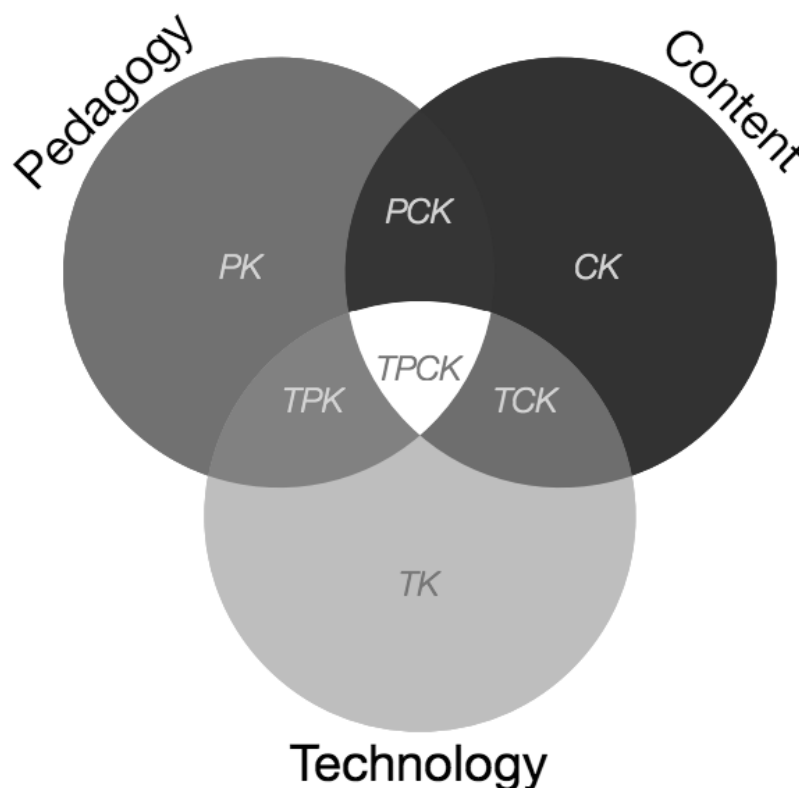
Possible Elementary Scheduling

8:00	8:30	Reading	Differentiated Supports	Literature, Informational Text (science and social studies)
8:35	9:05	Reading	Individualized Supports	
9:10	9:40	Reading	Personalized Supports	
Break				
10:00	10:30	Specials (or electives) and Teacher Collaboration Time		
10:35	11:05	Writing	Differentiated Supports	Narrative, Informational, Opinion (science and social studies)
11:05	11:35	Writing	Individualized Supports or Personalized Supports	
Lunch				
12:05	12:35	Math and science	Differentiated Supports	A focus on habits of mind and mathematical practices
12:40	1:10	Math and science	Individualized Supports	
1:15	1:45	Numeracies	Personalized Supports	

We will increasingly employ blended learning practices to better customize teaching and learning and better engage all students in their learning. The SAMR model can guide this curricular redesign (Puentedura, 2006):

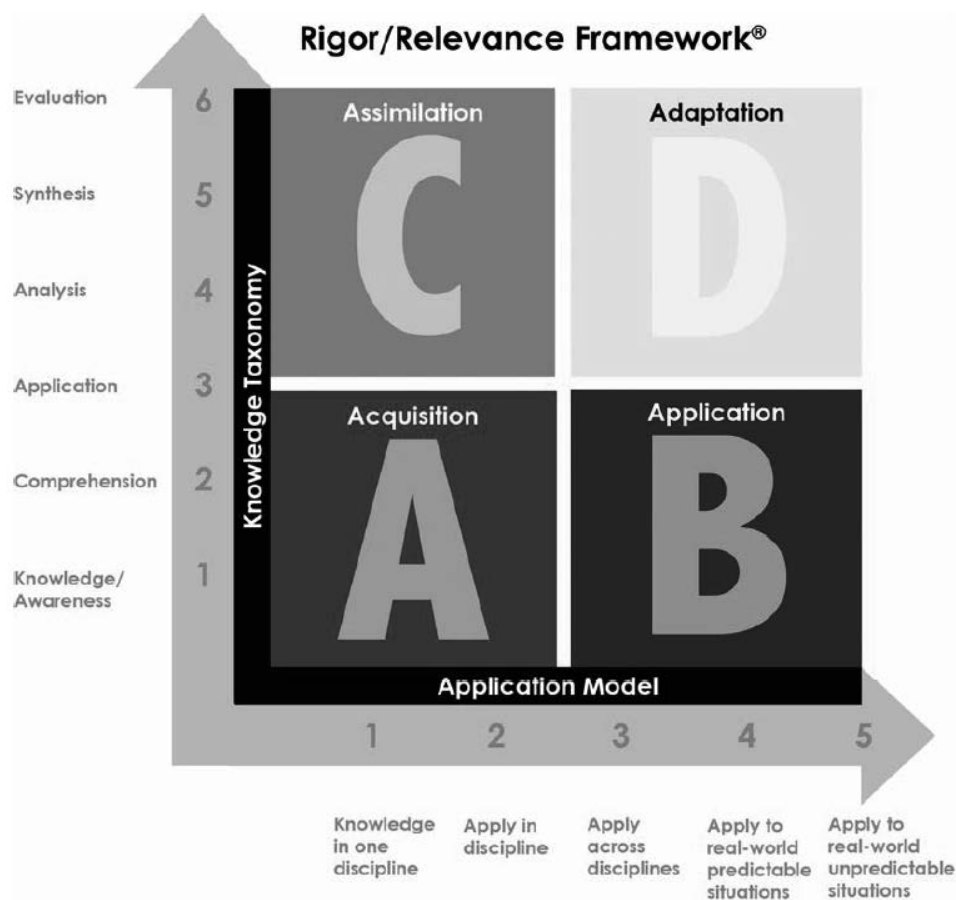
Enhancement	Redefinition	Technology allows for the creation of new tasks, previously inconceivable.	Create a narrated Google Earth guided tour and share the product online.	Transformation
	Modification	Technology allows for significant task redesign.	Use Google Earth layers, such as <i>panoramio</i> and <i>360cities</i> , to research locations.	
	Augmentation	Technology acts as a direct tool substitute, with functional improvement.	Use Google Earth rulers to measure the distance between two places.	
	Substitution	Technology acts as a direct tool substitute, with no functional change.	Use Google Earth instead of an atlas to locate a place.	

Designing learning experiences that optimally combine exceptional pedagogy, content, technology and knowledge will transform education (Shulman, 1986; 1987; Koehler, & Mishra, 2009).



The Rigor/Relevance Framework was developed by the International Center for Leadership in Education to assist staffs in examining curriculum, instruction, and assessment. The Framework is based on two dimensions of higher standards and student achievement (Daggett, 2014).

The first dimension, a continuum of knowledge, describes the increasingly complex ways in which we think. This Knowledge Taxonomy is based on the six levels of Bloom's Taxonomy. The second dimension, a continuum created by Dr. Bill Daggett, is known as the Application Model. The Application Model describes five ways in which knowledge is put to use.



Each quadrant of the Framework characterizes learning or performance.

Quadrant A — Acquisition

Students gather and store bits of knowledge and information. Students are primarily expected to remember or understand this acquired knowledge.

Quadrant B — Application

Students use acquired knowledge to solve problems, design solutions, and complete work. The highest level of application is to apply appropriate knowledge to new and unpredictable situations.

Quadrant C — Assimilation

Students extend and refine their acquired knowledge to automatically and routinely analyze and solve problems as well as create unique solutions.

Quadrant D — Adaptation

Students have the competence to think in complex ways and apply knowledge and skills they have acquired. Even when confronted with perplexing unknowns, students are able to use extensive knowledge and skill to create solutions and take action that further develops their skills and knowledge.

Quadrant A represents simple recall and basic understanding of knowledge for its own sake. Examples of Quadrant A knowledge are knowing that the world is round and that Shakespeare wrote *Hamlet*.

Quadrant C embraces higher levels of knowledge. Quadrant C represents more complex thinking but still knowledge for its own sake, such as knowing how the U.S. political system works and analyzing the benefits and challenges of the cultural diversity of this nation versus other nations.

Quadrants B and D represent action or high degrees of application. Quadrant B would include knowing how to use math skills to make purchases and count change. The ability to access information in wide-area network systems and the ability to gather knowledge from a variety of sources to solve a complex problem in the workplace are types of Quadrant D knowledge.

The Rigor/Relevance Framework is a fresh approach to examining college and career readiness and for assessing student mastery. It is based on traditional elements of education, yet encourages movement from acquisition of knowledge to application of knowledge.

The normal curve is not sacred. It describes the outcome of a random process.

Since education is a purposeful activity in which we seek to have students learn what we teach, the achievement distribution should be very different from the normal curve if our instruction is effective.

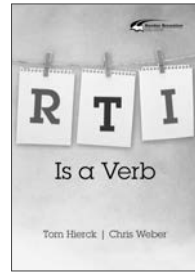
In fact, our educational efforts may be said to be unsuccessful to the extent that student achievement is normally distributed.

Benjamin Bloom, 1971

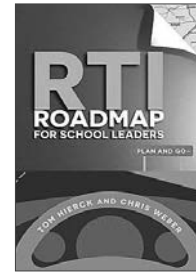
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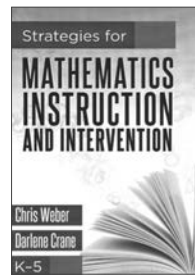
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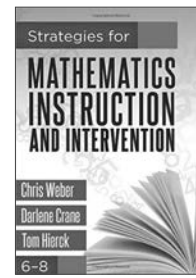
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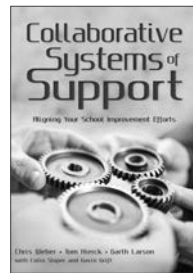
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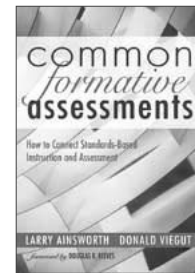
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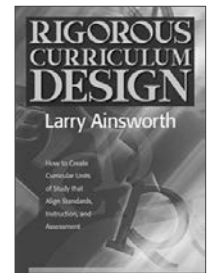
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