

15th Annual
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**Thinking &
Learning**
Conference

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MARCUS CONYERS

Saturday 20 MAY

Session 3

Innovating Minds®:

Keys to Cultivating Creativity

MELBOURNE

DR MARCUS CONYERS

Dr Marcus Conyers is an international keynote speaker with a passion for improving human performance through original frameworks for connecting mind, brain, well-being, and leadership research to practice. He is the co-author of 20 books, including *Positively Smarter: Science and Strategies for Increasing Happiness, Achievement, and Well-being* (Wiley, 2015), *Smarter Teacher Leadership: Neuroscience and the Power of Purposeful Collaboration* (Teachers College Press, 2016), and *Introduction to BrainSMART® Teaching* (Hawker Brownlow Education, 2018).



Dr Conyers is co-developer of the world's first doctoral minor in Brain-Based Leadership and the first Educational Specialist and Master of Science degree programs in Brain-Based Teaching (BrainSMART® Programs) in partnership with Nova Southeastern University. He serves as a research supervisor for the Ph.D. program in Professional Practice: Psychological Perspectives with Canterbury Christ Church University. Research for his Ph.D. with the University of Westminster focused on improving practice through application of the education, mind, brain, and implementation sciences.

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KEY POINTS FROM DR MARCUS CONYERS'

Innovating Minds®: Keys to Cultivating Creativity

Creativity is relatively independent of traditional measures of human potential, and new research is also overturning the myth that it is a gift that only a few possess. Almost all of us have the capacity to learn to be more creative and innovative, and it is now possible to create learning environments and opportunities in classrooms and workplaces that bring out more of the creative potential of all learners. In the hyper-connected innovation age, it is essential that we cultivate cognitive skills for identifying opportunities and creating, evaluating and applying new ideas that generate unique, relevant, added value. In this session participants will learn practical strategies for developing the innovating minds of their students.

Objectives and Outcomes:

- **Understanding the creative brain**
- **Discovering the innovating mind concept**
- **Toolbox of classroom strategies for developing innovating minds**

**Innovating Minds®:
Keys to Cultivating Creativity**

The IDEA Process

Marcus Conyers, PhD
Developer of Innovating Minds® program

Objectives and Outcomes:


- * Understanding the creative brain
- * Discovering the Innovating Minds concept
- * Toolbox of classroom strategies for developing Innovating Minds

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“Everything around you that you call life was made up by people that were no smarter than you, and you can change it, you can influence it, you can build your own things that other people can use.”

—Steve Jobs; inventor, 1955–2011

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“We are convinced the world will increasingly be divided between high imagination-enabled countries, which encourage and enable the imagination and extras of their people, and low imagination-enabling countries, which suppress or simply fail to develop their people’s creative capacities.”
—Thomas Friedman and Michael Mandelbaum; *That Used to Be Us* (2011).

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The Rise of the Creative Class




* The creative class makes up one-third to nearly one half of the workforce in the economically advanced nations of North America, Europe, and Asia. It represents about 40 million jobs in the United States.

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“The problem is that there are only 1.2 billion full-time, formal jobs in the world. This is a potentially devastating global shortfall of about 1.8 billion good jobs. It means that global unemployment for those seeking a formal good job with a paycheck and 30+ hours of steady work approaches a staggering 50%.”
—Jim Clifton, *The Coming Jobs War* (2011, p. 2).

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Surviving in Automation Nation



Even as traditional skills are being outsourced or rendered obsolete through automation, creative and innovating skills are hot commodities.


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“Prosperity in the Creative Age turns on human potential. It can only be fully realized when each and every worker is recognized and empowered as a source of creativity—when their talents are nurtured.”

—Richard Florida, *The Rise of the Creative Class*

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The Innovation Imperative



* An Adobe Systems poll of 5,000 people on three continents reports that 80% see unlocking creative potential as crucial to economic growth. But only 25% feel they are living up to their creative potential.

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Creativity is #1 Competency



* A recent IBM survey of more 1,500 CEOs reports that creativity is the single most prized competency among employees and managers.

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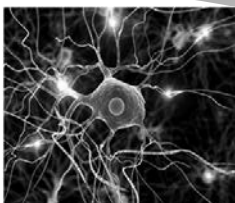
Decline in Creativity Skills



* The vast majority of young children start school exhibiting high levels of creativity, which decline steadily throughout the school years into adulthood. Research indicates that creativity has declined steadily in the United States since the 1990s across key domains (Kim, 2012).

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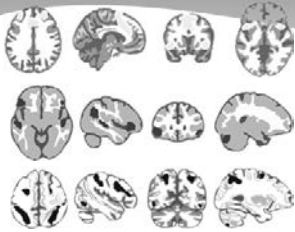
Learning Creates Connection



- * Novelty
- * Challenge
- * Practice
- * Feedback

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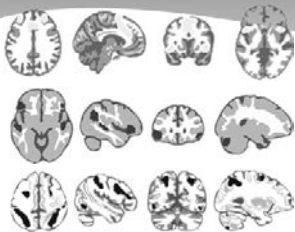
Experiences Shape the Brain



* Experiences literally shape the brain, and the neurocognitive systems associated with creative thinking are malleable.

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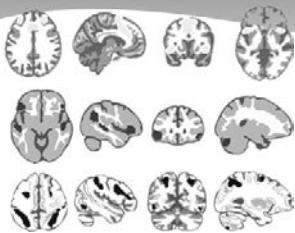
Experiences Shape the Brain



* New research is also overturning the common myth that creativity is a special gift that only a lucky few possess.

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Experiences Shape the Brain



* The profound implication of these findings is that almost all of us have the capacity to learn to be more creative and innovative.

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Brain Networks Involved in Creative Thinking



* Neuroscientists have identified two key brain networks, referred to as the *executive attention* and *default mode* “*imagination*” networks, involved in creative thinking.

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Networks in the Creative Brain



Green= The Executive Attention Network;
Red= The Imagination Network

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Executive Attention Network



* The executive attention network, connecting outer regions of the prefrontal cortex to areas in the posterior region of the parietal lobe, is active when cognitive control is required in the problem-solving, evaluation, and implementation phases of innovation.

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Imagination Network



* The "imagination network," is involved in "constructing dynamic mental simulations based on personal past experiences such as used during remembering, thinking about the future, and generally when imagining alternative perspectives and scenarios to the present." (Kaufman, 2013)

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Imagination Network



* Involves areas in the prefrontal cortex, temporal lobe, and parietal cortex, drawing on information stored in long-term memory and on regions associated with personal memories.
* Studies suggest that this network is highly active during the brainstorming and free association phases of creative thinking.

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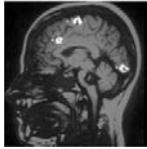
Creative Brain States



* Different "brain states," or ways of thinking, can be applied to enhance creative and innovative thinking.
* Some of these states may not come easily to everyone, but they can be cultivated over time.
* We can train our brains to become more creatively productive and to proactively apply innovative ways of thinking to creative challenges (Carson, 2012).

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Three Abilities that Drive Innovating Minds



* Sternberg (1985; Sternberg & Lubart, 1995) describes three key abilities that can be developed to increase creative thinking skills. In essence, these three abilities underpin what Innovating Minds do in terms of creative thinking and entrepreneurial doing:

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Synthetic



* **Synthetic ability** refers to generating novel, creative ideas. People with well-developed synthetic thinking are recognized as innovative because they make connections that others don't recognize.

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Analytic Ability



* **Analytic ability** refers to critical thinking and problem-solving skills resulting from the identification and evaluation of possible solutions. Analytic thinking supports creativity by weeding out bad ideas and highlighting the most promising possibilities. Innovating Minds rely on analysis to consider all angles of a creative idea and test it out.

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Practical Ability



* **Practical ability** refers to translating ideas into reality. Innovators use practical ability to make an abstract concept concrete, to demonstrate its usefulness, and to identify the people most likely to benefit from its use.

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The Innovating Minds I.D.E.A Process



* Students need to become skilled in I.dentifying problems and opportunities, D.reaming up and dialoguing possible solutions, E.valuating and enhancing the best ideas, and A.pplying and adjusting them in response to feedback. All of these skills can be taught and learned.

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The IDEA Process



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I. identify Opportunity or Problem to be Solved

- * Identify an opportunity to create something new or a problem to be solved.
- * Input relevant information.
- * Incubate in the unconscious mind.

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D.ream up and Dialogue Solutions

- * Dream up ideas.
- * Dialogue with other Innovating Minds.
- * Decide by keeping an open mind.

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E.valuate and Elaborate on Ideas

- * Evaluate ideas.
- * Elaborate on existing ideas.
- * Engineer usage of these ideas.

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A.pply and Adapt Ideas

- * Apply ideas.
- * Analyze as necessary.
- * Adapt ideas in new ways.

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IDEA in Action

The IDEA Process

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Strategies for Developing Innovating Minds

1. Build belief that creative thinking is a skill.
2. Encourage students to apply the IDEA model.
3. Model creative thinking.
4. Have a bulletin board with creative artifacts.
5. Use Project-Based Learning.
6. Have students research people and groups, Innovating Minds past and present.
7. Reverse-engineer everyday objects.

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Strategies for Developing Innovating Minds

8. Save off-the-topic comments and questions students make and explore further at a later date.
9. Share stories about the key Innovating Minds who were foundational in your area of expertise.
10. Create a positive climate that encourages creative thinking.
11. Catch your students being creative.
12. Have students interview Innovating Minds via Skype or in person.

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Strategies for Developing Innovating Minds

13. Encourage students to keep a J.I.M., Journal for Innovating Minds.
14. Have students generate alternative uses for everyday objects.
15. Infuse innovative thinking into assignments and provide supportive feedback.
16. Have students work in groups to create commercials.
17. Use the StoryScape strategy.
18. Encourage use of graphic organizers to create learning.
19. Support use of student-generated content such as stories, songs, artwork, and creative solutions to common challenges.

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Innovating Minds

The IDEA Process

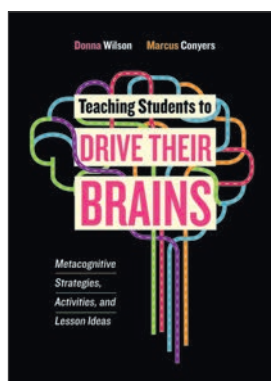
* In the hyper-connected innovation age, it is essential that we cultivate skills for I.dentifying opportunities D.reaming up, E.valuating, and A.pplying new ideas that generate unique, relevant, added value. We need to develop Innovating Minds.

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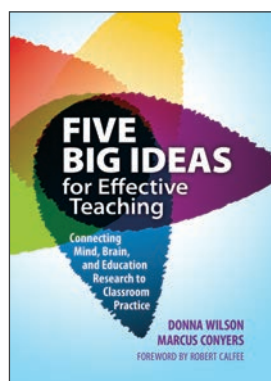
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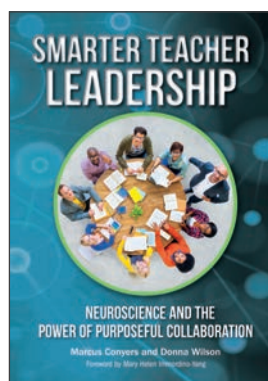
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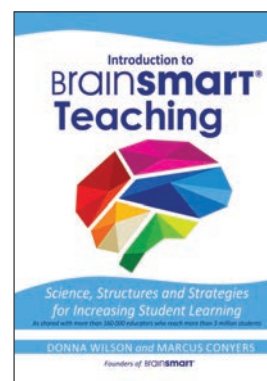
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