

15th Annual
Hawker Brownlow
**Thinking &
Learning**
Conference

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ROBIN FOGARTY

SATURDAY 19 MAY

Session 2

**Collaborative Learning:
Invite, Ignite, Excite**

MELBOURNE

DR ROBIN FOGARTY

Widely known as “the teacher’s teacher”, Robin Fogarty has taught at all levels from pre-school to university, and has trained educators throughout the world in curriculum, instruction and assessment strategies. She has also served as an administrator, and educational consultant in Europe, America, Asia and Australasia. With a doctorate in curriculum and human resource development, Robin is a widely recognised educational expert who has written and had published a proliferation of educational literature. Furthermore, some of her articles have appeared in Educational Leadership, Phi Delta Kappan, and the Journal of Staff Development.



Robin is known as the teachers' teacher. She brings a wealth of knowledge and passion to all endeavours, and is often complimented on her lively sense of humour and personable ways.

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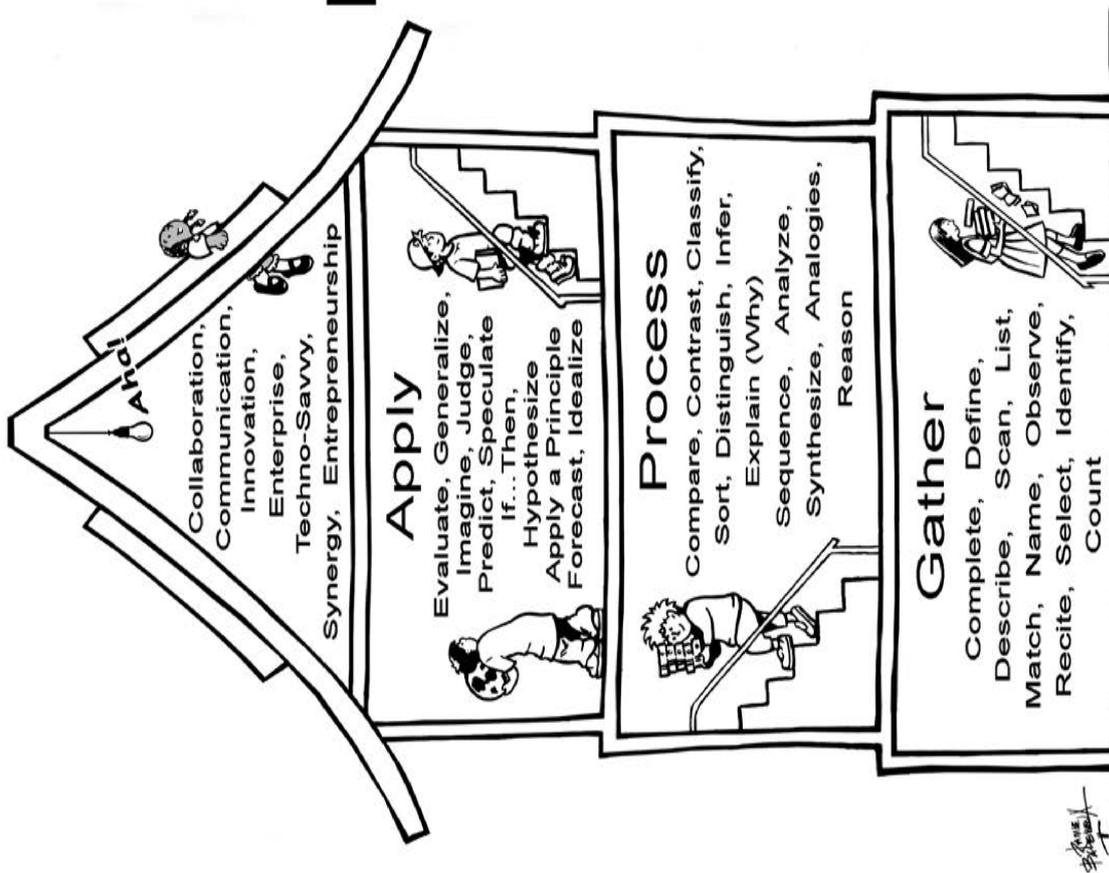
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Robin Fogarty
**Collaborative Learning:
Invite, Ignite, Excite**

So, what do
we want to say
about this?



The Three Story Intellect



There are one-story intellects, two-story intellects, and three-story intellects with skylights.

All fact collectors who have no aim beyond their facts are one-story minds.

Two-story minds compare, reason, generalize, using the labor of fact collectors as their own.

Three-story minds idealize, imagine, predict, their best illumination comes from above, through the skylight.

Oliver Wendall Holmes
Adapted from the poem, At the Breakfast Table

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Robin Fogarty & Associates Book: Blueprints for Thinking in the Cooperative Classroom - Bellanca and Fogarty

BUILD: Cooperative Learning Planner

	B	U	I	L	D
	Build in Higher Order Thinking	Unite the Teams	Invite Individual Accountability	Look Over and Discuss	Develop Social Skills
	Problem Solving Decision Making Creative Ideation	Complex Tasks Require Trust & Teamwork	Insure Individual Learning & Responsibility	Plan, Monitor & Evaluate – Metacognition	Communication Leadership Conflict Resolution
1	Critical and Creative Thinking	Bonding & Group Identity	Assigned Roles	Goal Setting	Paraphrase <i>I hear / I see</i>
2	3-2-1 Technique	Shared Materials	Quiz	PMI (Plus, Minus, Interesting)	Affirm <i>That's a good idea . . .</i>
3	Problem Solving	Single Projects	Random Responses	Human Graph	Clarify <i>Tell me more . . .</i>
4	Decision Making	jigsaw	Individual Applications	Teach Observation Sheet	Test Options <i>What else . . .</i>
5	Fat & Skinny Questions	Lottery	Individual Grades	Student Observer Feedback	Sense Tone <i>That feels like . . .</i>
6	Applications	Complex Multi-Step Assignment	Signature: I Agree / I Understand	Success Award	Encourage others <i>No Put-Downs</i>
7	Transfer Within/Across/Into	Group Grade	Round Robin (Wraparound)	Log Entry	Accept others Ideas Set DOVE guidelines
8	Graphic Organizers	Group Reward	Homework	Individual Transfer or Application	T-Chart <i>Looks Like / Sounds Like</i>
9	Metacognitive Exercises	Consensus	Bonus Points	Team Ad or Poster	Disagree w/Ideas <i>Not Other People</i>
10	Metaphors/Analogies	Extended Projects	Expert Jigsaw	Mrs. Potter's Questions	Reach Consensus <i>5 to Fist</i>

The surprising thing Google learned about its employees — and what it means for today’s students.

By Cathy N. Davidson

All across America, students are anxiously finishing their “What I Want To Be ...” college application essays, advised to focus on STEM (Science, Technology, Engineering, and Mathematics) by pundits and parents who insist that’s the only way to become workforce ready. But two recent studies of workplace success contradict the conventional wisdom about “hard skills.” Surprisingly, this research comes from the company most identified with the STEM-only approach: Google.

Sergey Brin and Larry Page, both brilliant computer scientists, founded their company on the conviction that only technologists can understand technology. Google originally set its hiring algorithms to sort for computer science students with top grades from elite science universities.

In 2013, Google decided to test its hiring hypothesis by crunching every bit and byte of hiring, firing, and promotion data accumulated since the company’s incorporation in 1998. Project Oxygen shocked everyone by concluding that, among the eight most important qualities of Google’s top employees, STEM expertise comes in dead last. The seven top characteristics of success at Google are all soft skills: being a good coach; communicating and listening well; possessing insights into others (including others different values and points of view); having empathy toward and being supportive of one’s colleagues; being a good critical thinker and problem solver; and being able to make connections across complex ideas.

Those traits sound more like what one gains as an English or theater major than as a programmer. Could it be that top Google employees were succeeding *despite* their technical training, not because of it? After bringing in anthropologists and ethnographers to dive even deeper into the data, the company enlarged its previous hiring practices to include humanities majors, artists, and even the MBAs that, initially, Brin and Page viewed with disdain. Project Aristotle, a study released by Google this past spring, further supports the importance of soft skills even in high-tech environments. Project Aristotle analyzes data on inventive and productive teams. Google takes pride in its A-teams, assembled with top scientists, each with the most specialized knowledge and able to throw down one cutting-edge idea after another. Its

data analysis revealed, however, that the company's most important and productive new ideas come from B-teams comprised of employees who don't always have to be the smartest people in the room.

Project Aristotle shows that the best teams at Google exhibit a range of soft skills: equality, generosity, curiosity toward the ideas of your teammates, empathy, and emotional intelligence. And topping the list: emotional safety. No bullying. To succeed, each and every team member must feel confident speaking up and making mistakes. They must know they are being heard.

Google's studies concur with others trying to understand the secret of a great future employee. A recent survey of 260 employers by the nonprofit National Association of Colleges and Employers, which includes both small firms and behemoths like Chevron and IBM, also ranks communication skills in the top three most-sought after qualities by job recruiters. They prize both an ability to communicate with one's workers and an aptitude for conveying the company's product and mission outside the organization. Or take billionaire venture capitalist and "Shark Tank" TV personality Mark Cuban: He looks for philosophy majors when he's investing in sharks most likely to succeed.

STEM skills are vital to the world we live in today, but technology alone, as Steve Jobs famously insisted, is not enough. We desperately need the expertise of those who are educated to the human, cultural, and social as well as the computational.

No student should be prevented from majoring in an area they love based on a false idea of what they need to succeed. Broad learning skills are the key to long-term, satisfying, productive careers. What helps you thrive in a changing world isn't rocket science. It may just well be social science, and, yes, even the humanities and the arts that contribute to making you not just workforce ready but *world* ready.

[Cathy N. Davidson](#), author of the new book, "[The New Education: How to Revolutionize the University to Prepare Students for a World in Flux.](#)"

Thinking About Your Thinking Stem Sentences

Learning to become metacognitively aware of one's actions, thoughts, words, and deeds, as well as one's behaviors, habits, attitudes, and aptitudes, depends on the effectiveness of an individual's power of insight into himself or herself. It also depends on one's integrity to be entirely candid about what is obvious, and the ability to find the inspiration to proceed. This takes a healthy, mentally aware, and highly motivated person. It takes effort and effectiveness to hone this set of skills. It is about becoming a self-realized learner. It is a process that teachers can help students develop with reflective strategies and grow an awareness of self and the control measures to take when change is indicated.

The set of stem statements or reflective questions prompt students and students working in small groups to think about their learning: what went well and what might need a change, and so on. These metacognitive skills are embedded in the strategies that students learn to use. This listing is partial, but these are appropriate for K-12 and adults to get them in the reflective mind set for self-awareness, self-improvement, and self-appraisal.

Of course all skillfulness in knowing ones self leads to more powerful learning and a true sense of student agency.

Mr. Parnes's Questions:

How does this connect? How will you use it?

Mrs. Potter's Questions:

What was the goal? What went well? What will you change next time?

Ms. Poindexter's Questions:

When did you get stuck? How did you get unstuck?

What? So What? Now What?

What Data? So What? Infer: Now What? Act.

Aha! Oh, No!

Aha! What was striking? Oh no! What are the implications?

PMI:

Plus? Minus? Interesting?

3-2-1:

3 Recalls, 2 Questions, 1 Take Away

Dial 4-1-1 Information:

4 Agreements, 1 Disagreement, 1 Application

Yellow Brick Road:

Under Construction, Rocky Road, Yellow Brick Road, Highway to Heaven

Tiny Transfer Book:

Take Away 1, 2, 3, 4, 5, 6

Give One, Take One:

Partners Give 1 Idea, Take 1 Idea

That's a Good Idea:

"That's a good idea because . . ."

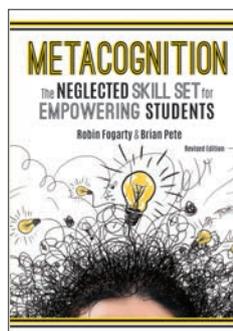
One-Minute Write:

Write for one minute, count words, repeat and compare data

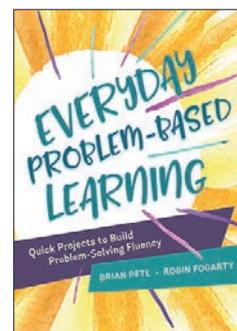
Source: J. Bellanca, R. Fogarty, & B. Pete (2012). How to Teach Thinking Skills: 7 Student Proficiencies of the New National Standards. Bloomington IN: Solution Tree Press

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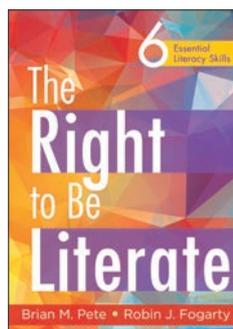
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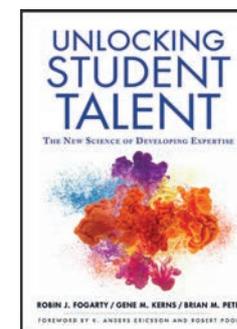
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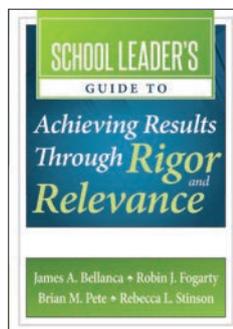
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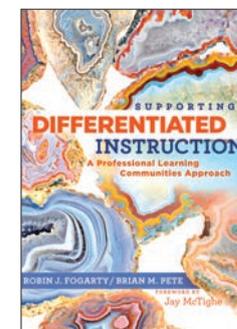
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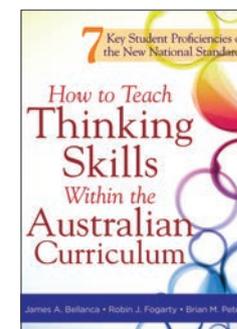
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