Motivation, meta-cognition, and the importance of creative & critical thinking in schools

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Finish this sentence as succinctly as possible…

My best teachers were …

“Be tough, yet gentle. Humble, yet bold. Swayed always by beauty and truth.”

- Bob Pieh, Founder of Voyageur Outward Bound School
“A teacher is a compass that activates magnets of curiosity, knowledge, and wisdom in pupils.”

• Terri Guillemets

Some time for self-reflection and meta-cognition …

An opportunity to think about thinking & find ways to flow

“No significant learning occurs without a significant relationship.”

• Dr. James Comer
Dr. Joseph Renzulli on IQ

“I've always said that IQ tests tell us something. But they don't begin to tell us everything, and in some cases they may not even be telling us what is most important about a young person's potential.”
Sally M. Reis, Ph.D.

- Major advisor at UCONN
- Research on academically talented girls and eminent women
- Schoolwide Enrichment Model
- Renzulli Learning
- *Work left undone: Compromises and challenges of talented females (1998)*

Ellie Drago-Severson, Ed.D.

- Former HGSE Professor
- Currently at Teacher's College, Columbia University
- *Helping Teacher's Learn: Principal Leadership for Adult Growth and Development (2004)*
- *Becoming Adult Learners: Principles and Practices for Effective Development (2004)*

“Growth is the ingenious mix between support and challenge.”

- Dr. Ellie Drago-Severson
Theodore R. Sizer, Ed.D.

• Founder of the Coalition of Essential Schools

• Founding Director of The Annenberg Institute for School Reform


“The school’s schedule is a series of units of time: the clock is king.”

• Dr. Ted Sizer
“A wise school’s goal is to get its students into good intellectual habits.”

- Dr. Ted Sizer

Sizer’s Habits of Mind

- perspective
- analysis
- imagination
- empathy
- communication
- commitment
- humility
- joy

TRUTH
2 types of creativity

**Inventive**
- addresses a worthwhile problem
- novel and appropriate solution

**Expressive**
- illustrates the creator’s emotions and aesthetics
- original and valuable

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**Creativity - defined ...**

In order for something to be **creative** it must be new, useful, generative, or influential.

- Csikszentmihalyi & Simonton

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**The Creativity Crisis**
by Bronson & Merryman

*Newsweek*

July 10, 2010
Newsweek article - The Creativity Crisis

A recent IBM poll of 1,500 CEOs identified creativity as the #1 “leadership competency” of the future.

- Bronson & Merryman (2010)

FLOW: The Psychology of Optimal Experience

Flow describes those exhilarating moments in life when one is “in the zone” -- full of purpose; loses all track of time; and experiences happiness.

- Mihaly Csikszentmihalyi

What you learn intellectually lies in the shallow pools among the wrinkles of your brain. What you learn through the skin of experience sinks deep into your roots.

~ Hank Taft, Outward Bound
What I hear, I forget
What I see, I remember
What I do, I understand

— Ancient Chinese Proverb

“Literacy and thinking are socially-constructed achievements and not simply “mental” achievements of the mind. More specifically, people read with a sense of purpose and bring their life experiences to what they are reading.”

• James Paul Gee, 2003

Simple exposure does not ensure recall.

• Dr. Erik Lauber

Simple exposure does not ensure recall.

• Dr. Erik Lauber
“All learning, from diapers to doctorate, exists on a continuum ranging from deductive, didactic, and prescriptive on one hand to inductive, investigative, and inquiry-oriented on the other.”

• Dr. Joseph Renzulli

--- 4 ways to FLOW ---
1. Teach Guilford’s Components
2. Do Divergent Thinking … daily!
3. Strive for Symphony & Synthesis
4. Think Pink: Autonomy - Mastery - Purpose

“I am not a teacher …
I am an awakener.”

~ Robert Frost
From Learning Theory …

to Teaching Practicality

We are educating people out of their creativity.

Creativity is as important in education as literacy.

Sir Ken Robinson

DIVERGENT THINKING

CREATIVITY
THE PROCESS OF HAVING ORIGINAL IDEAS THAT HAVE VALUE

www.theRSA.org
DIVERGENT THINKING ISN'T A SYNONYM

CREATIVITY THE PROCESS OF HAVING ORIGINAL IDEAS THAT HAVE VALUE

Fluency
Flexibility
Originality
Elaboration
Guilford’s Components of Divergent Production

- Fluency
  (Many ideas or products)
- Flexibility
  (Varied ideas or products)
- Originality
  (Unusual ideas or products)
- Elaboration
  (Added detail or enrichment to ideas or products)

Rather than running the risk of having our students become "walking encyclopedias," we need to teach them how to think creatively.

(Sternberg, 2006)
You have 2 minutes to write down as many uses you can think of for a brick.
Harvard Business Review article - The Making of an Expert

Research shows that outstanding performance is the product of deliberate practice and coaching, not of any innate talent or skill.

- Ericsson, Prietula, & Cokely (2007)

"Practice isn’t the thing you do once you’re good. It’s the thing you do that makes you good." (Gladwell, 2008, p. 41)
How can we assess creative thinking?

**Guilford’s Components of Divergent Production**

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*Harvard Business Review article - The Making of an Expert*

Deliberate practice involves two kinds of learning:

improving the skills you already have and extending
the reach and range of your skills.

- Ericsson, Prietula, & Cokely (2007)
“We are moving from an economy and a society built on the logical, linear, computer-like capabilities of the Information Age to an economy and a society built on inventive, empathetic, big-picture capabilities of what’s rising in its place, the Conceptual Age.”
~ Daniel Pink (2006)
“Not just focus but also SYMPHONY. Much of the Industrial and Information Ages required focus and specialization. But as white-collar work gets routed to Asia and reduced to software, there’s a new premium on the opposite aptitude: putting the pieces together … What’s in greatest demand today isn’t analysis but synthesis - seeing the big picture, crossing boundaries, and being able to combine disparate pieces into an arresting new whole.”

Improving COMPREHENSION

...via SYNTHESIS ...

To do:

Write down one cartoon character & one current event.
Create small groups of 2 - 4 people

Small group work:

Choose one of each and create a political cartoon.

Sketchwords
Galimoto

Go to GOOGLE -- Search -- Galimoto and lesson plan

Think Pink

Autonomy -- Mastery -- Purpose

MOTIVATION
The importance of frogs ...

2 factors lead to better performance & personal satisfaction...

Autonomy

Mastery

Purpose

Daniel H. Pink
Author of The New York Times bestseller
A Whole New Mind

Drive

The Surprising Truth
About What Motivates Us
“The number one cause of death on this planet among humans is ... bad water -- between 60,000 and 85,000 deaths per day.”
~ Dean Kamen (2002)

“People sometimes ask what Dean considers his greatest invention. He usually says FIRST, because it inspires teenagers whose inventions might someday benefit humanity. But his FIRST love is hardly his last.”

For Inspiration and Recognition of Science and Technology
Thomas Edison once remarked that no experiments are useless. Dean Kamen agreed. He was displeased if he and his engineers weren’t frequently failing in preposterous ways, because impressive failures signified impressive aspirations. Puny failures sprouted from puny dreams.

So Dean encouraged constant technological audacity. “You gotta kiss a lot of frogs,” he liked to say, “before you find a prince.” He often condensed this phrase into a gerund ~ frog-kissing ~ and pushed his inventors to pucker up and experiment.

“In spite of our best efforts to identify students for special programs, predicting who will be the most significant contributors to society is a very inexact science.”

• Dr. Joseph Renzulli
---- 4 ways to FLOW ----

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2. Do Divergent Thinking … daily!
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The quest to know thyself and the world are inextricably tied to the purposes of education.

• Gara B. Field, 2004