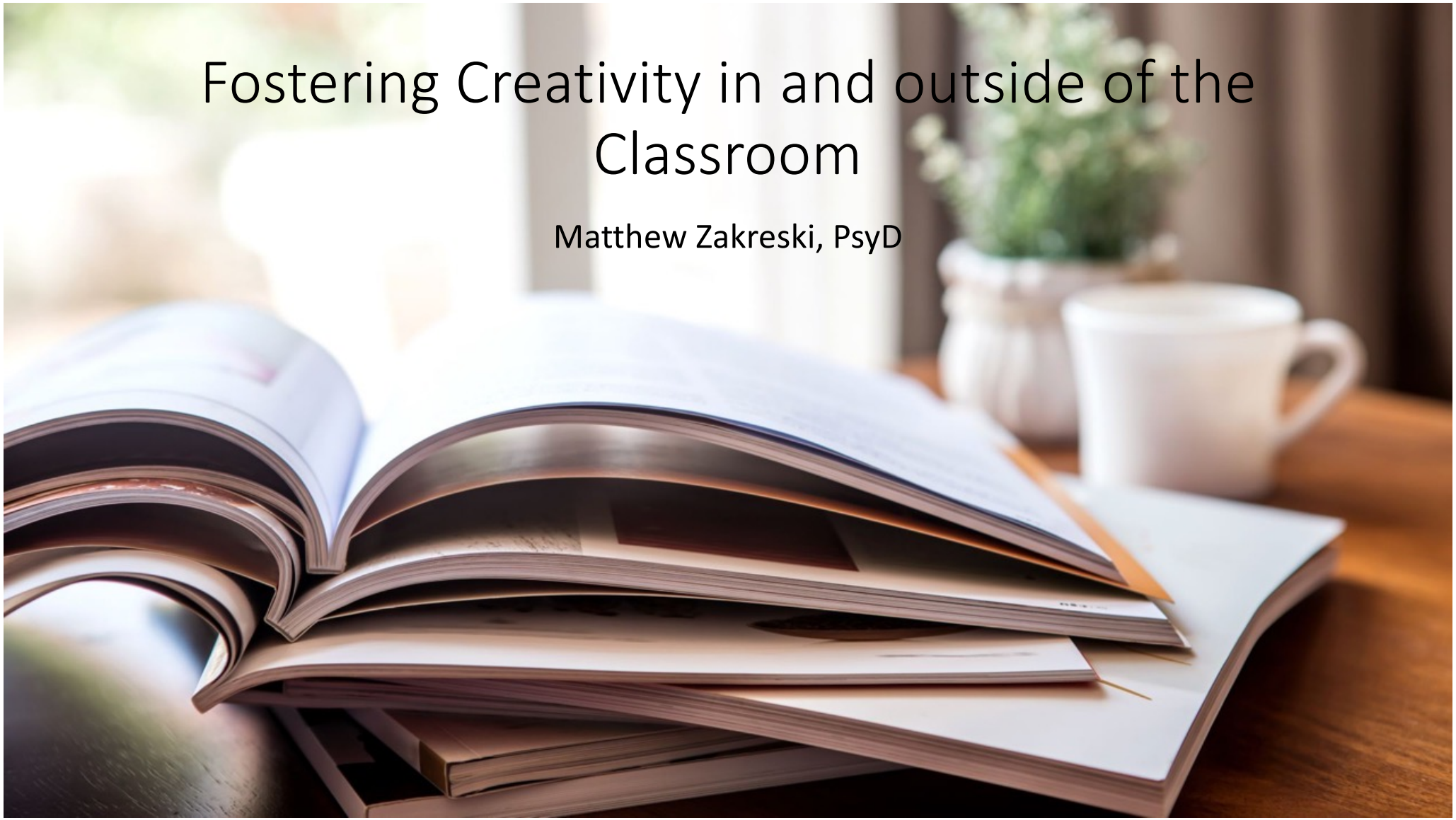
Fostering Creativity in and outside of the Classroom

Matthew Zakreski, PsyD



Who am I?

Dr. Matt Zakreski – you can call me ”Dr. Matt”

I’m a clinical psychologist, professional speaker, and neurodivergence advocate

I’m known as someone who can bridge neuroscience and clinical practice to make skills accessible for you and your loved ones

Welcome!

Goals for today

- 1. Define creativity
- 2. Talk about how creativity manifests in the classroom
- 3. Talk about how to use creativity in your lives (without losing your mind!)


What is creativity?

Creativity defined

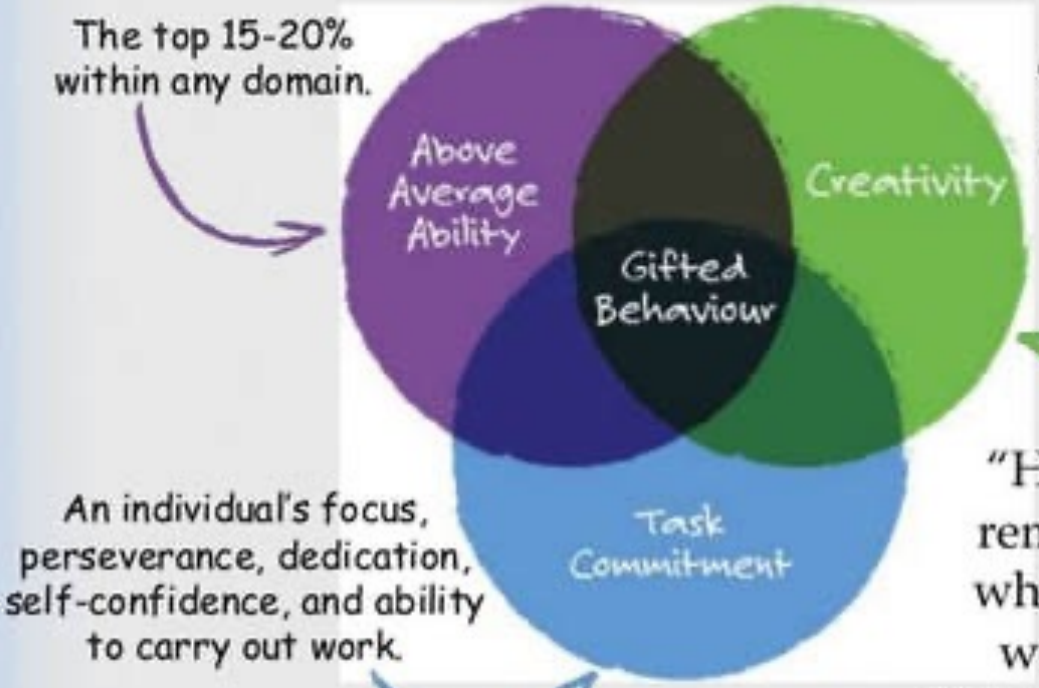
- **Michael Mumford**: ”We seem to have reached a general agreement that creativity involves the production of **novel**, **useful** products”
- **E. Paul Torrance**: “A **process** of becoming **sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions**, making guesses, or formulating hypotheses about the deficiencies: testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.”
- **James Averill** - Emotional creativity (EC) is a **pattern of cognitive abilities and personality traits related to originality** and appropriateness in emotional experience.

My favorite definition

Why with gifted students?

- Long history of creativity being studied along with (and as a part of) intelligence
  - Sternberg - the ability to use pre-existing knowledge and skills to solve new and novel problems is directly related to creativity
  - PASS Theory – you need to have knowledge, make plans, and take action to solve problems
  - Cattell-Horn-Carroll – creativity is related to making associations and retrieval of information
    - Impact of processing speed (exponential growth)
- Naturally divergent thinkers – asking “Why”
- Giftedness is about making connections and seeing relationships that others would not

Renzulli's 3-Ring Conception of Giftedness



"History does not remember persons who merely scored well on IQ tests" (Renzulli, 2005, p. 256).

Sources Cited: (Kaufman & Sternberg, 2008; Missett & McCormick, 2013).

Exercise

- Get in groups of 4-6 people
- There are no wrong answers
- Choose at least 12 of the given options
- Feel free to add 2-3 of your group's own suggestions

- We are making a "Gifted Kid Playlist"

The Car Song - Cat Empire	Everyone's Free (To Wear Sunscreen) - Baz Luhrmann	Alexander Hamilton - Hamilton Soundtrack
It's the End of the World as We Know it - REM	Fifteen - Taylor Swift	The Scientist - Coldplay
Born this way - Lady Gaga	Brimful of Asha - Cornershop	Headstrong - Trapt
Firework - Katy Perry	Ludwig van Beethoven – Symphony No. 9 in D minor	Einstein on the Beach - Counting Crows
Birdhouse in your Soul - They Might Be Giants	How Far I'll Go - Moana	Johann Sebastian Bach – Brandenburg Concerto No. 3
32 Flavors - Ani DeFranco	Fat Lip - Sum 41	Welcome to my Life - A Simple Plan
American Pie - Don McLean	No Such Thing - John Mayer	Another Brick in the Wall - Pink Floyd
Richard Wagner – The Valkyrie: Ride of the Valkyries	I'm Smarter Than you - Random Encounters	Jimmy Neutron Theme Song - Bowling for Soup
Just the Way You Are - Bruno Mars	Still Young - Cat Empire	Waving through a window - Dear Evan Hansen
Gonna Fly Now - The Rocky Theme	Imagine - John Lennon	Dream On - Aerosmith
High Hopes - Panic! at the Disco	Brave - Sara Barellis	Feel it Still - Portugal. The Man.
Imperial March - John Williams	Wolfgang Amadeus Mozart – Piano Sonata No. 11 in A major	Big Bang Theory - Barenaked Ladies

Processing

- What was this exercise like for you/your group?
- What was easy?
- What was hard?
- What was the point of this exercise?

Takeaways

Creativity is both easier and harder than we think

Everyone can be (and is) creative

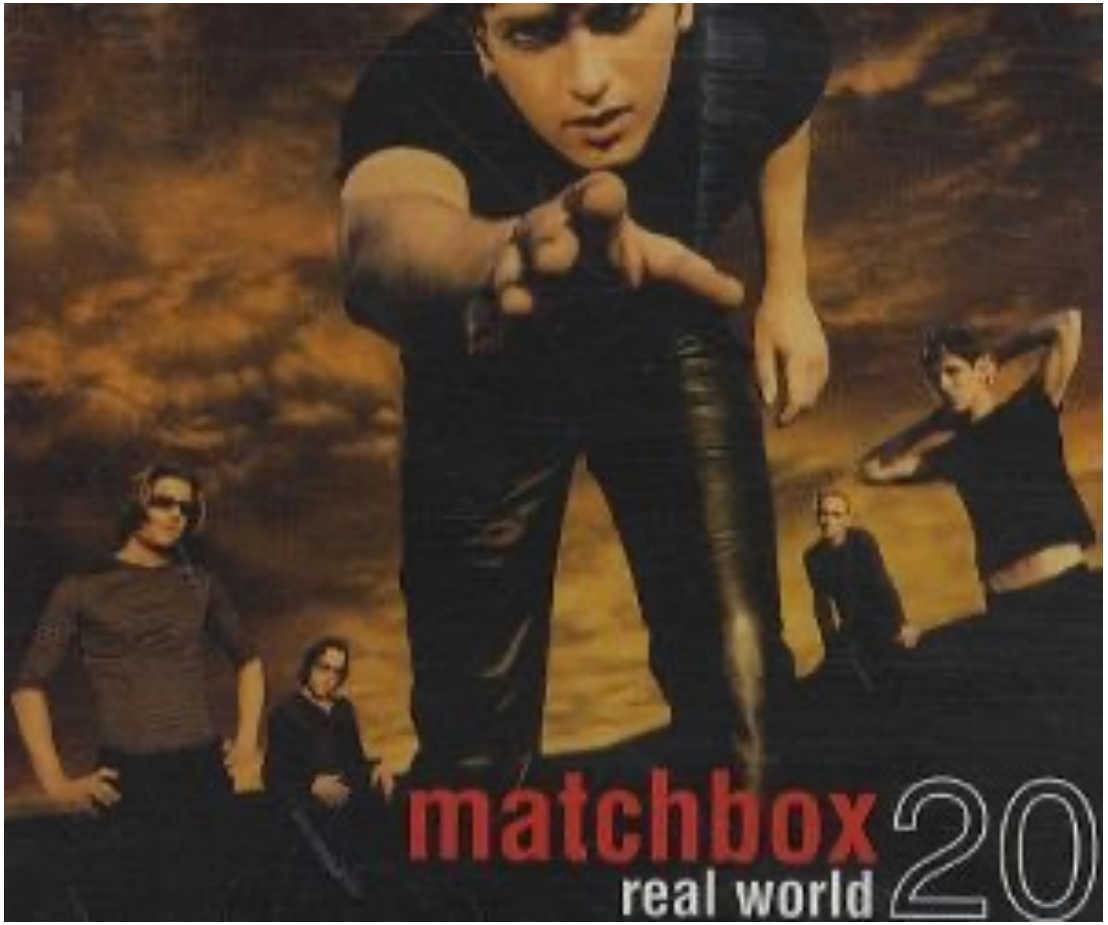
Creativity isn't just "one thing" – it can be applied anywhere

The best thing about creativity is that you CAN'T BE WRONG

Trust your instincts

There is NO WRONG WAY to be creative (many different ways)

90’s alt-rock throwback story time!



Types of Creativity

James Kauffman and Roland Beghetto – the "Four C's"

- *mini-c* - "transformative learning" for the person that involves "personally meaningful interpretations of experiences, actions, and insights"
  - Metaphors to accommodate learning
  - "Please excuse my dear aunt sally"
- *little-c* - everyday problem solving and creative expression
  - Getting through the day by thinking outside the box
- *Pro-C* - exhibited by people who are professionally or vocationally creative though not necessarily eminent
- *Big-C* - creativity that is considered great and/or paradigm shifting in the given field

Creating Creativity

Mel Rhodes - The “Four P’s”

- Process – what tools are available to the person? What standards are we holding them to? Who is monitoring and how?
- Product – what are we trying to make? To what end?
- Person – who is the person that is doing the creating? What are their strengths and likes vs. their weaknesses and dislikes?
- Place – are we setting aside time and space for creativity? How are we doing so? When?

Which feels MOST important to you?


Google
20%
Time

Sample Week (using the 20% time rule)

Monday – content delivery in Subjects A, B, C, D, E, F (G gets 20%)

Tuesday – content delivery in Subjects B, C, D, E, F, G (A gets 20%)

Wednesday – content delivery in Subjects A, D, E, F, G (B and C get 20%)

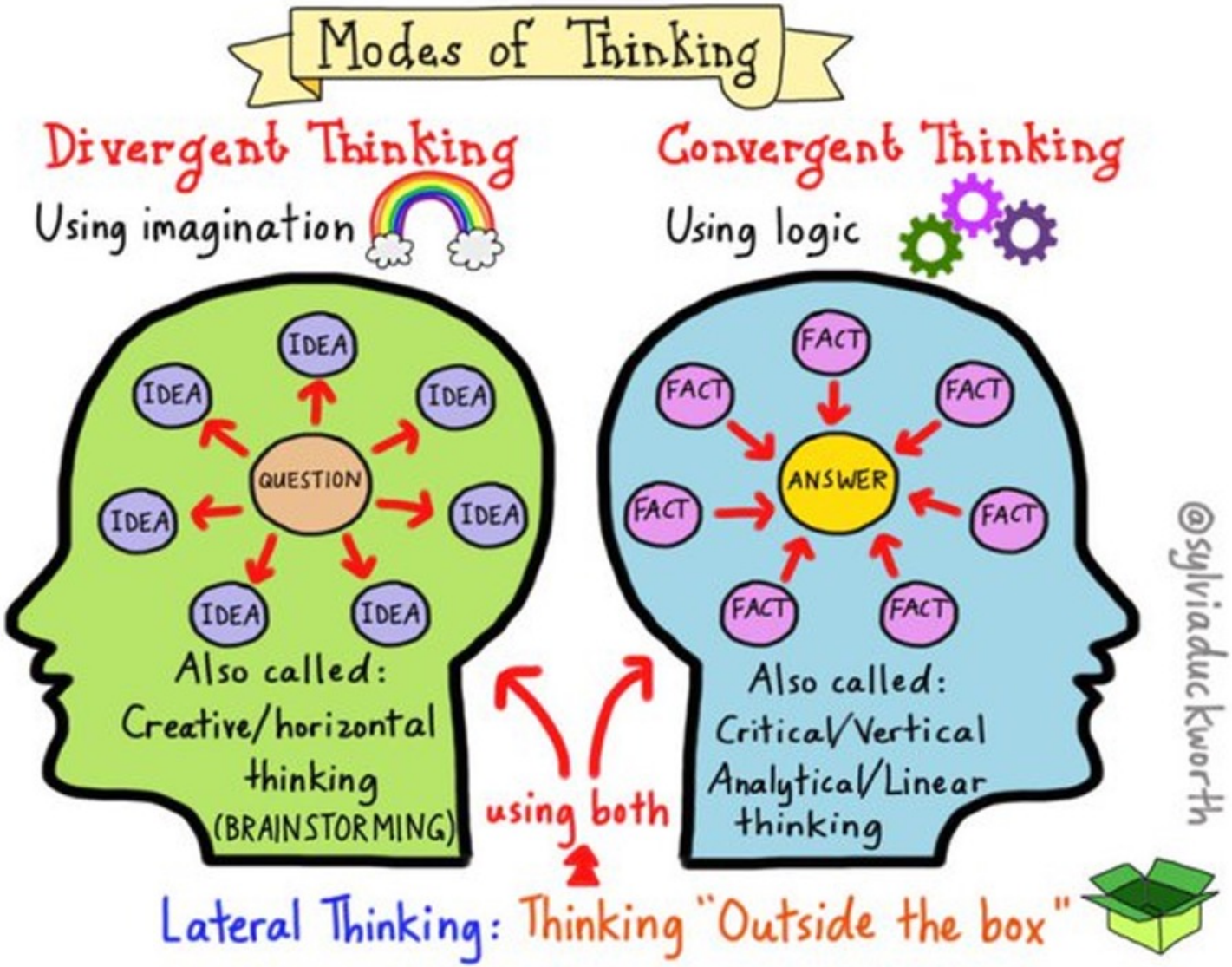
Thursday – content delivery in Subjects A, B, C, F, G (D and E get 20%)

Friday – content delivery in Subjects A, B, C, D, E, G (F gets 20%)

- Remember
  - Classwork > Homework
  - These kids learn quickly anyway
  - Following a creativity rubric is following Common Core

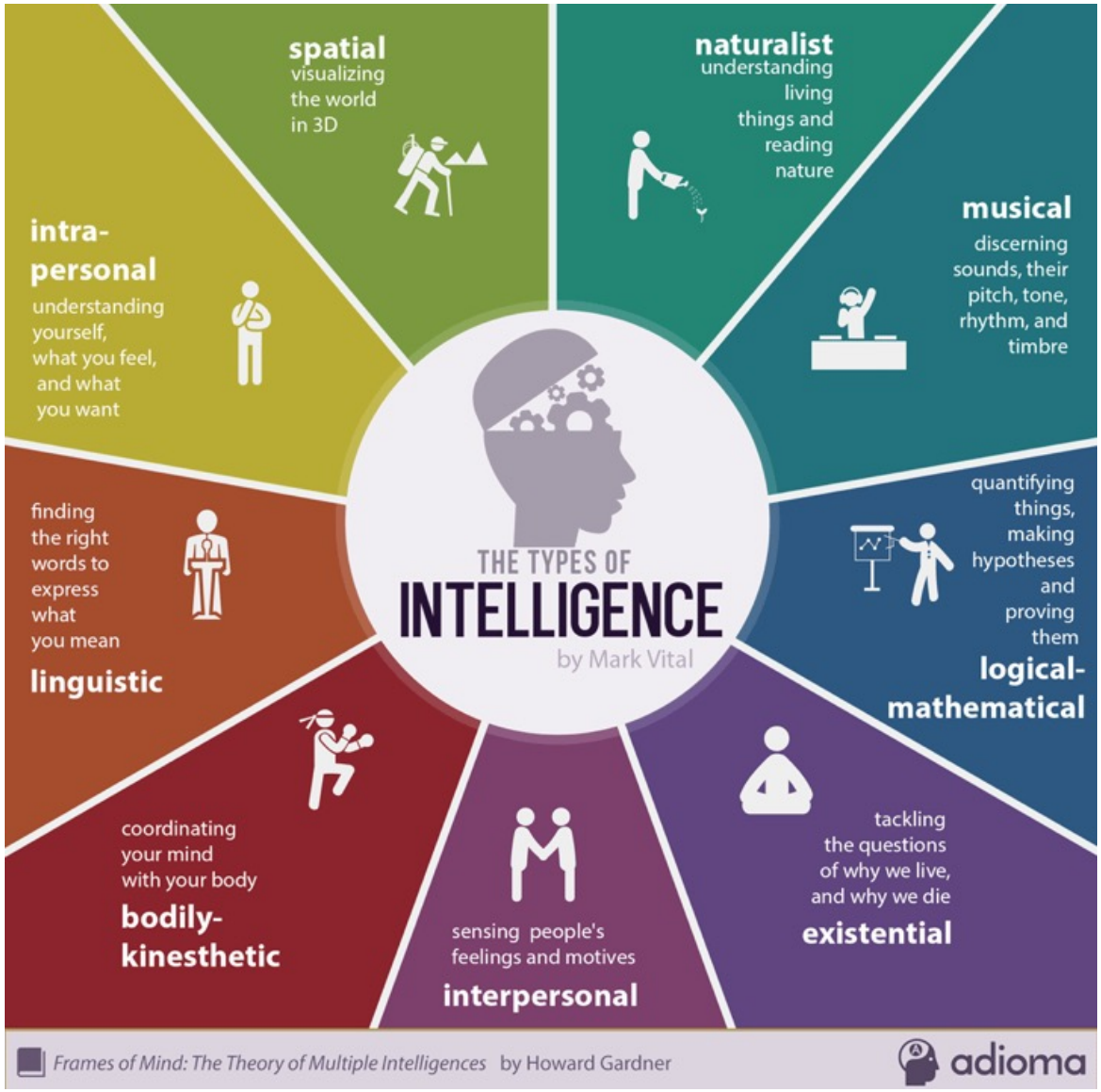
Considering the person

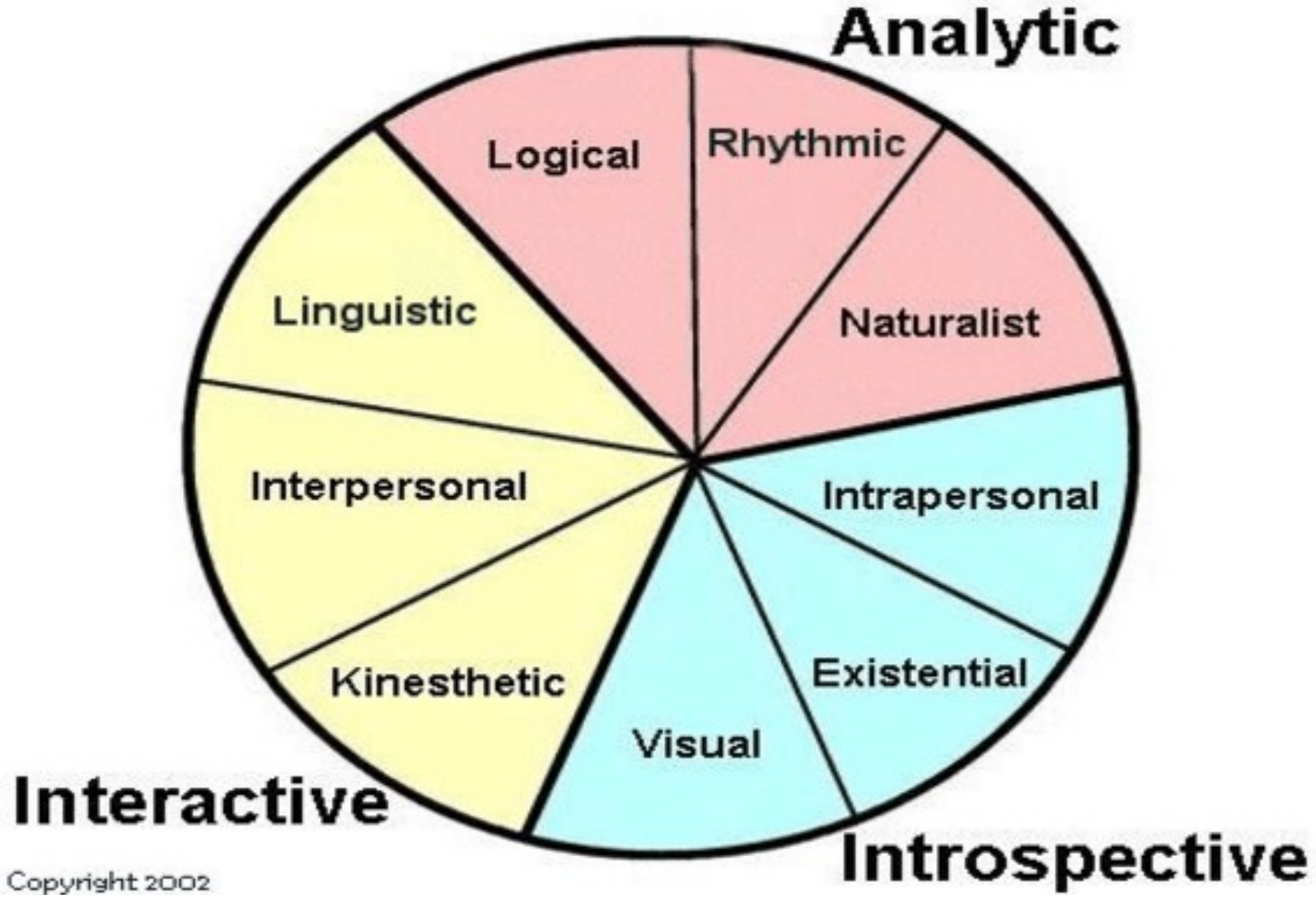
- We don't teach everyone the same way, so we cannot expect the same type of creativity from everyone
- Pre-project surveys
  - Divergent (right brain/creative) or convergent (left brain/logical) thinking?
  - Cognitive complexity level?
  - Concrete or abstract thinking?
  - Motivation level – can alter by structuring to person's preferences
- Pods?
- Overarching class rules
- Intelligence


Modes of Thinking
Divergent Thinking
Using imagination
Convergent Thinking
Using logic
IDEA
IDEA
IDEA
QUESTION
IDEA
IDEA
IDEA
IDEA
Also called:
Creative/horizontal thinking
(BRAINSTORMING)
FACT
FACT
FACT
ANSWER
FACT
FACT
FACT
FACT
Also called:
Critical/Vertical
Analytical/Linear
thinking
using both
Lateral Thinking: Thinking "Outside the box"
@sylviaduckworth

Intelligence

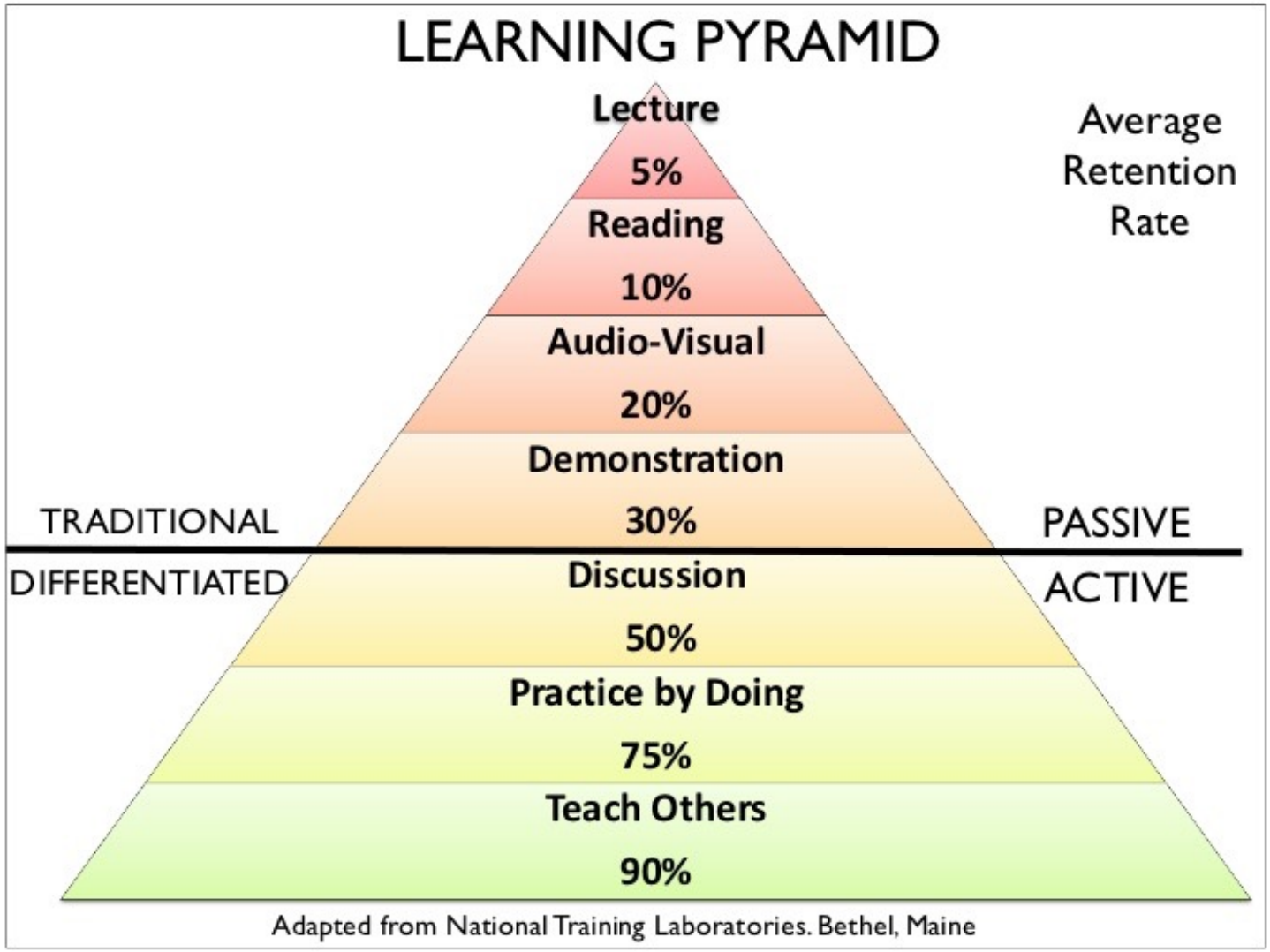
- Let's focus not just on "book smarts"
- People can be intelligent (and even gifted) in multiple domains
  - But they might not know it
  - but they might not show/share/appreciate it
- Take a strengths-based approach
  - Lots of informants
  - Observations
  - Try different things
  - When in doubt, start with the kid's interest(s)


spatial
visualizing the world in 3D
naturalist
understanding living things and reading nature
musical
discerning sounds, their pitch, tone, rhythm, and timbre
intra-personal
understanding yourself, what you feel, and what you want
THE TYPES OF
INTELLIGENCE
by Mark Vital
quantifying things, making hypotheses and proving them
logical-mathematical
finding the right words to express what you mean
linguistic
coordinating your mind with your body
bodily-kinesthetic
sensing people's feelings and motives
interpersonal
tackling the questions of why we live, and why we die
existential
Frames of Mind: The Theory of Multiple Intelligences by Howard Gardner
adioma



Physics Project (example)

Topic	Format	Content	Presentation	A/V
Giant of physics (i.e., Isaac Newtown)	Knowledge delivery	Biography and connection to today	PowerPoint, Quiz (Costume?)	Images on PPT; hand-outs
Friction	Active Demonstration	Understanding and demonstration	Experiment	Filmed; uploaded on YouTube
Black Holes	Documentary	Understanding and dramatization	Skit; Interview Experts	Filmed interview; Live Q&A?
Teaching Physics	Reactive Demonstration	Take a concept (F=ma) and teach it	Several different types of teaching	As needed
Dark Matter	Exploration	How is it used in pop culture (i.e., sci-fi)?	Citing examples, reading/podcast list	Relevant clips
Science in Sitcoms	Analysis	How accurate is the science on the show?	Citing examples, rating accuracy	Statistical analyses
Superconductors	Knowledge engagement	Explain concept and its importance	Game Show	Ted Talk


LEARNING PYRAMID
Lecture
5%
Reading
10%
Audio-Visual
20%
Demonstration
30%
Discussion
50%
Practice by Doing
75%
Teach Others
90%
Average Retention Rate
TRADITIONAL
DIFFERENTIATED
PASSIVE
ACTIVE
Adapted from National Training Laboratories. Bethel, Maine

Visual-Spatial	Verbal-Linguistic	Interpersonal	Musical-Rhythmic	Bodily-Kinesthetic	Intrapersonal	Logical-Mathematical	Naturalist
							
▪ Artwork ▪ Photographs ▪ Graphic organizers ▪ Posters, charts, graphics, pictures ▪ Illustrations ▪ Sketches ▪ Drawings ▪ Paintings ▪ Pictures of props for plays ▪ Demonstrations ▪ Overheads ▪ Storyboards	▪ Computer printouts ▪ Recordings of readings ▪ Reactions to guest speakers ▪ Autobiographies ▪ Biographies ▪ Reactions to films or videos ▪ Captions for cartoons ▪ Pictures of student-made bulletin boards ▪ List of books read ▪ Annotated bibliographies	▪ Group video ▪ Think-Pair-Share ▪ Cooperative learning task ▪ Round Robin ▪ Jigsaw ▪ Group songs, collages, poems ▪ Rating scales ▪ Class and group discussions ▪ Group projects ▪ Group presentations	▪ Background music in class ▪ Songs for books, countries, people ▪ Raps, jingles, cheers, poems ▪ Musical mnemonics ▪ Choral reading ▪ Music chosen for assignment	▪ Description of field trips ▪ Role playing ▪ Learning centres ▪ Sports/games ▪ Cooperative learning ▪ Simulations ▪ Interviews ▪ Projects ▪ presentations	▪ Goal setting ▪ Reflective learning logs ▪ Journals ▪ Metacognitive reflections ▪ Independent reading times ▪ Silent reflection time ▪ Self-evaluation	▪ Puzzle ▪ Patterns and their relationships ▪ Formulas, abstract symbols ▪ Analogies ▪ Time lines ▪ Outlines ▪ Venn diagrams ▪ Mind maps	▪ Nature collections ▪ Soundscapes ▪ Mobiles ▪ Projects ▪ Photographs ▪ Journals ▪ Diagrams ▪ Maps ▪ Graphs ▪ Charts ▪ Webs ▪ Mind maps ▪ Hypothesis ▪ Forecasts ▪ Reports

Let’s plan a Theme Party!

- What do we need?
- Who is going to do what?
- Play to your strengths
- Your answers are much more creative than you think

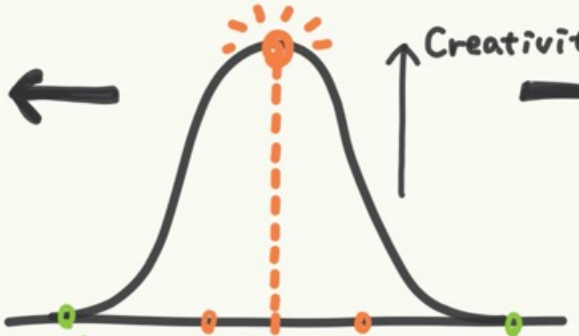
(It’s the same effect if I give you a theme)

The most creative condition

Structured Chaos

Structured ← → Chaotic

Creativity



Logic, Number, Formula, Reliability

Intuition, Inspiration, Picture, Validity

We are
the most creative
when we are
in the middle of
structured & chaotic.

To keep
Structured chaos mode,
doodle diagrams.

Idea by HIDESHI HAMAGUCHI

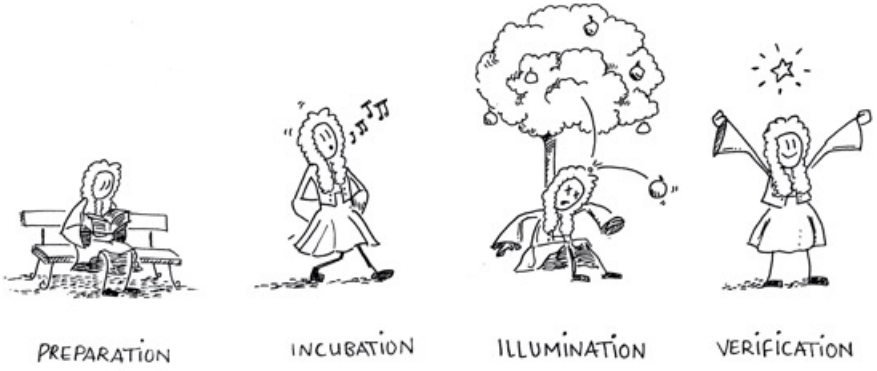
Backyarding

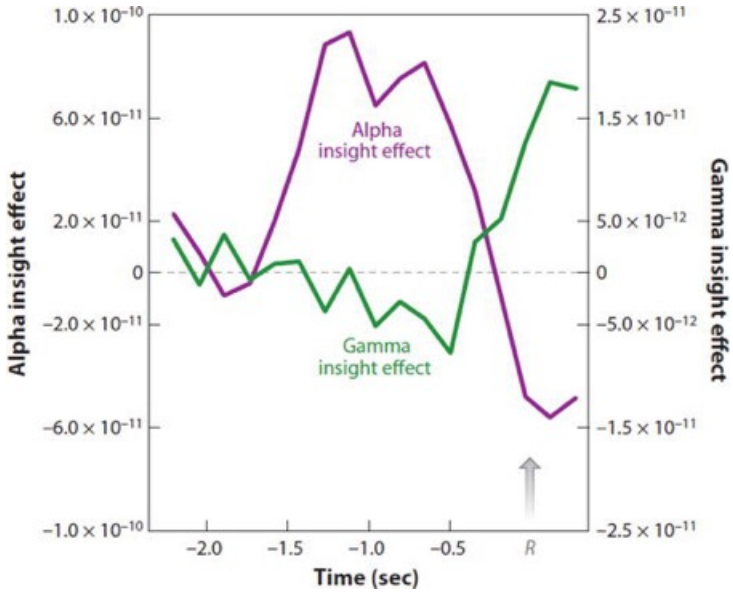
- Established classroom rules for creativity time
- When/how to ask for help
- When can you talk to peers (and how to empower peers to say no)
- Trust
- Begin with warm-up exercises (examples later)

Process

Graham Wallas – London School of Economics

- 1. Preparation - preparatory work on a problem that focuses the individual's mind on the problem and explores the problem's dimensions
- 2. Incubation - the problem is internalized into the unconscious mind and nothing appears externally to be happening
- 3. Intimation - the creative person gets a "feeling" that a solution is on its way
- 4. Illumination (or insight) - the creative idea bursts forth
- 5. Verification - the idea is consciously verified, elaborated, and then applied





Incubation

Incubation is defined as, when attending to a different task, humans forget about the previous unsuccessful attempts and can engage with the task anew, often leading to finding the solution.

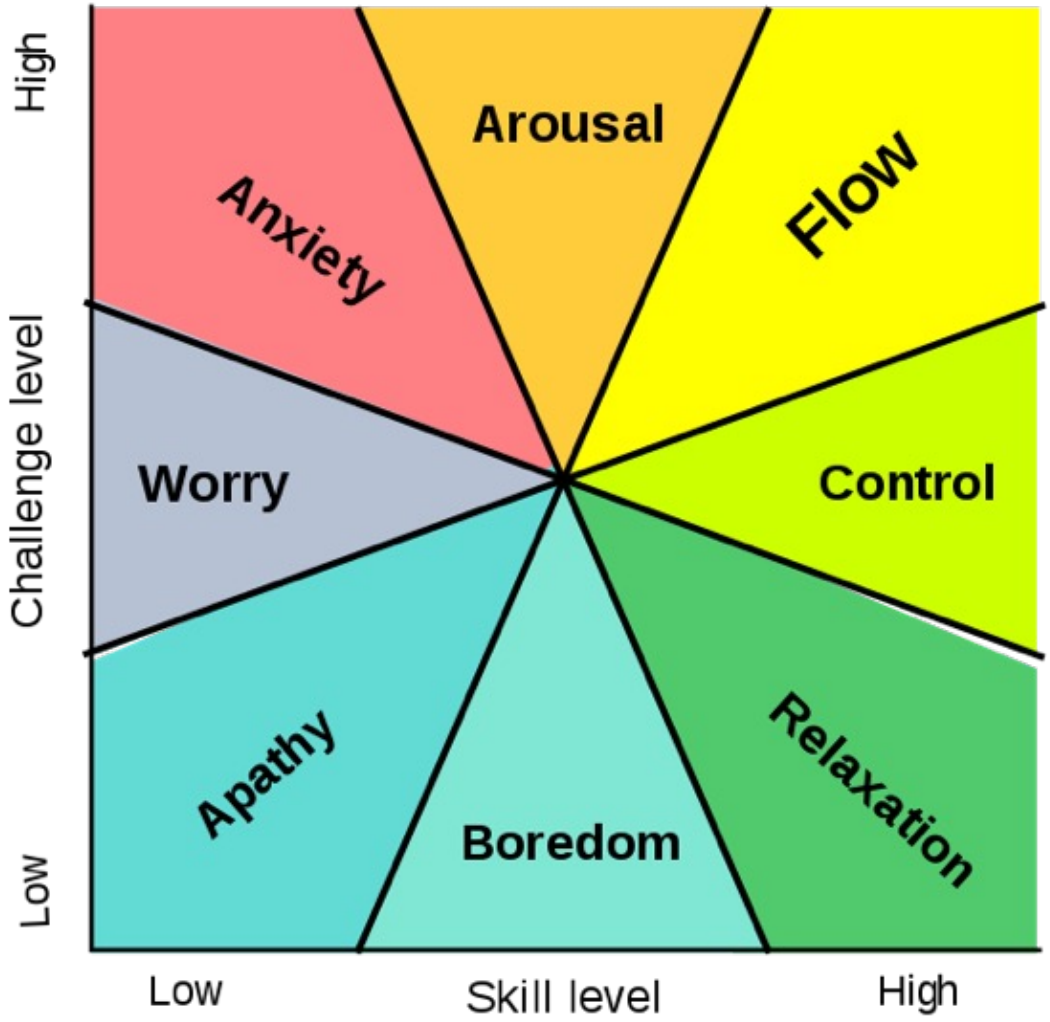
So… when in doubt, take an active break

Scott Barry Kauffman

- “Creative and gifted people show tendencies of thought and action that in most people are segregated. They contain contradictory extremes; instead of being an "individual," each of them is a "multitude.”
- Embrace the multitude
  - Intentionally expose to new/divergent concepts
  - Learn the content that you need as you go (Einstein and math)
  - Limit peer feedback – there are days you MUST go it alone
  - Encourage solo reflection and independent work
  - Mindfulness before you begin
- Authentic Growth Mindset – “I am working towards something. I might not know what it is (yet), but I am getting closer each time I try.”

Creating Flow

- Mihaly Csikszentmihalyi (Me high Cheeks send me high)
- A highly focused mental state that is conducive to productivity ("in the zone")
  - Runners high
  - What do you like doing?
  - Time goes away
- Seeking intrinsic motivation – we are doing this because we want to and because we are enjoying it
- Challenge and skill level must match




"Creativity
Takes Courage."
-HENRI MATISSE

How Anxiety gets in the way

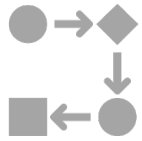
- Anger (especially at little things)
- Difficulty sleeping (at home) or settling (in class)
- Defiance (I will control whatever I can control)
- Explosions (may “come out of nowhere”)
- Lack of focus
- Overplanning
- Avoidance – finding reasons not to
- Negativity “I can’t so I won’t”
- Focus on the future

Getting unstuck - Techniques to use

Five minute doodles – just keep your pen/pencil on the page for 5 min, moving as much/little as you want

Two minute mountain – the first two minutes are the hardest; if you can get grit your teeth and get through them, everything else gets easier

"Now you can't" challenge – you wanted to do your project this way, imagine that now you can't, what would you do instead



Reverse engineer – imagine you did it and you're done! Explain to me how you did it

Dealing with fear – don’ts/dos

- Don’t minimize – “Oh, it’s not that bad”
  - Say “I know that this can be hard. I can see that you’re working hard.”
- Don’t problem-solve – “You need to do…”
  - Say “What resources do you have to answer this question?”
- Don’t get offended – “You think this is stupid?!!?”
  - Say “What’s getting in your way?”
- Don’t get sucked into content – “I will give you 34 reasons why this is a good idea.”
  - Focus on process! “It seems like you’re working really hard to convince me/not work right now. How are you feeling?”

Personality traits to develop

Plasticity – the ability of the brain to change when presented with new information

- High drive for seeking/experiencing exploration

Divergence – independent thinkers, seeking/seeing their own path towards the goal

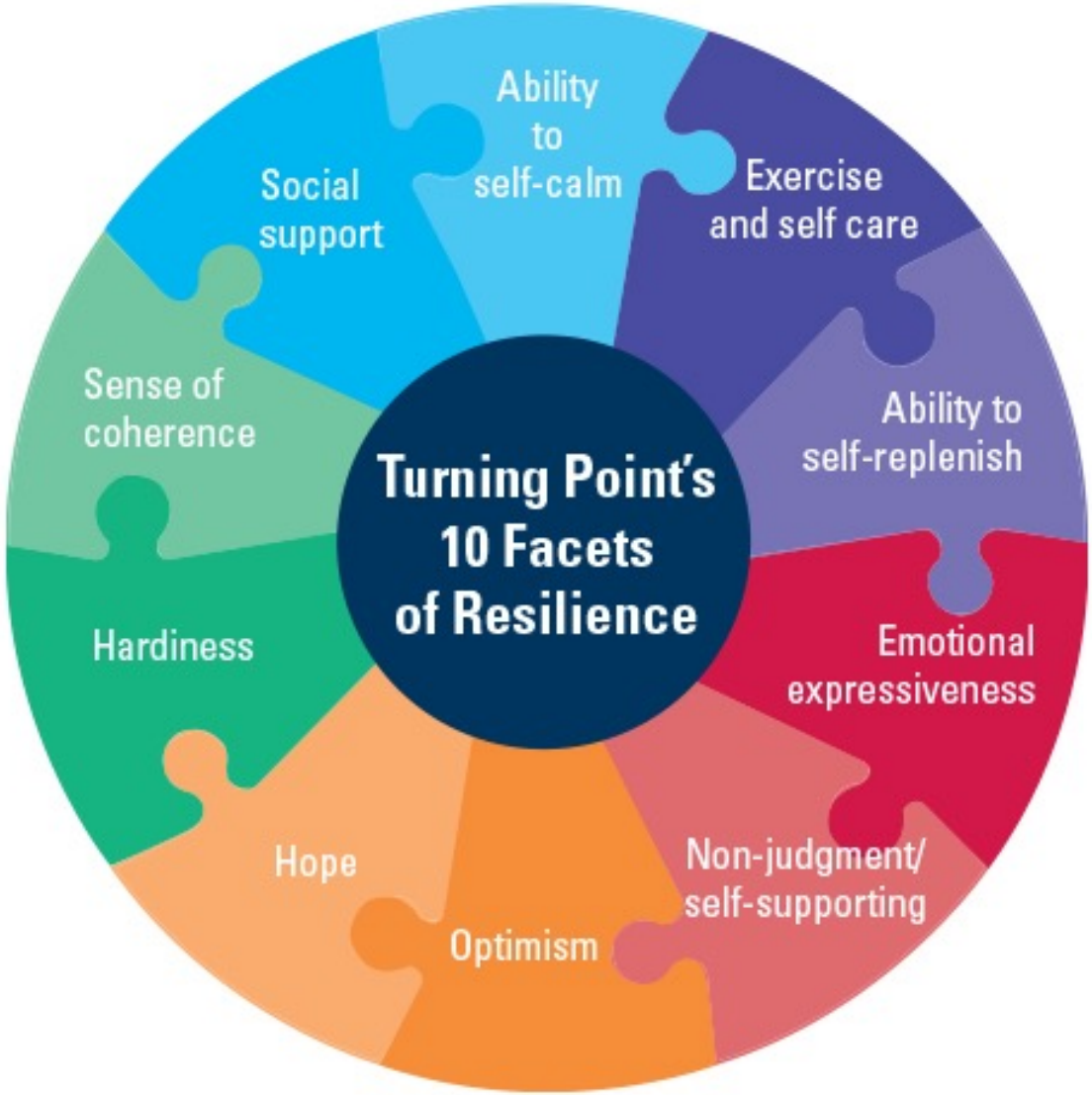
- Non-conformity, bravery, low conscientiousness
- Note: may seem like jerks

Convergence – taking in information actively

- high conscientiousness, high precision, enhanced persistence, and the ability to be critical

Resilience – to be able to recover quickly from and adjust to difficulties

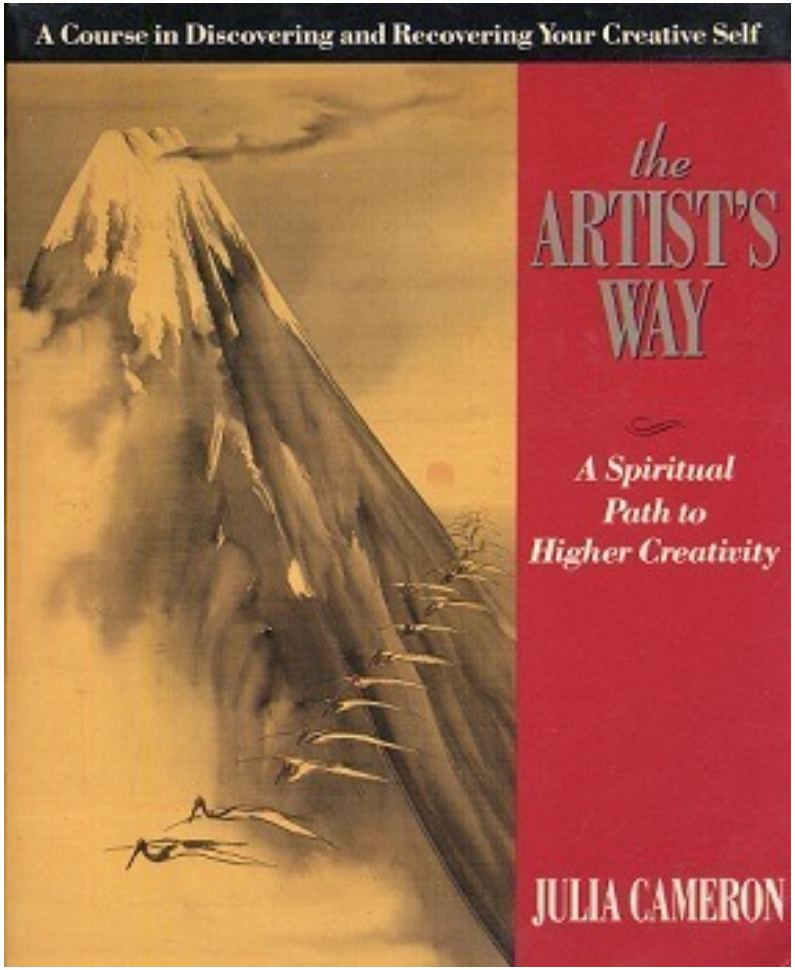
- Social support, conscious coping strategies, attached to meaning


Turning Point's
10 Facets
of Resilience
Social
support
Ability
to
self-calm
Exercise
and self care
Ability to
self-replenish
Emotional
expressiveness
Non-judgment/
self-supporting
Optimism
Hope
Hardiness
Sense of
coherence

Let’s Play (Another) Game

Field Guide – “The Artist’s Way”

- Daily pages (3 per day)
- Weekly artist’s “date”
- When to get feedback
- How to get unblocked



What can you do with this?

Creative Categories

- Practical – creative uses of the item's practical purpose (i.e., what can I cook in a frying pan?)
- Aspirational – if I was an expert at this thing, what could I do with it? (i.e., If I get good enough at computer coding, I can build a robot)
- Inventive – what can I create using this? (i.e., I can use a potato to grow more potatoes)
- Inverted – can I use this thing for its opposite purpose? (i.e., if I deflated a beach ball, what can I do?)
- Fantastical – really outside-the-box thinking (i.e., I tied a toboggan to a skateboard and pulled my friends around the neighborhood)

“My ideas aren’t good enough!"

First, there is no scale. Creativity exists everywhere, in micro and macro states

Second, creativity looks different for everyone

Third, good ideas come from everywhere

Fourth, you’ll never know if you don’t do it

Creativity in your class

- Art – draw like Minecraft/Roblox/Manga; Greyscale; Living art
- Gym – create a game; how could we play Quidditch/Ready Player One
- ELA – If Character A (Tom Sawyer) met Character B (Wolverine) what would they talk about?
- Math – where is math happening in your life? (MPG, salary, sports)
- Science – photography, experiments, cooking
- History – how would “Modern Item A” change “Historical Event B”?

- What can you think of?

For example

- Pulitzer Winners in Fiction
- Pulitzer Winners in Editorial Cartooning
- Pulitzer Prize Winners in Drama
- Fields Medal Winners and Topics
- Nobel Peace Prize Winners
- Grammy for Best Album of the Year

Takeaways

- Creativity can't be wrong! (It's not always the right fit)
- Creativity is a way to connect with your students
- Boundaries around creativity are appropriate and can be proactive
- Anxiety gets in the way of creativity
- Different styles of thinking lead to different styles of creativity
- Creativity isn't one thing – it can be ANYTHING!

Resources

- https://www.youtube.com/watch?v=bEusrD8g-dM (TED Talk on Creativity)
- https://www.frontiersin.org/articles/10.3389/fpsyg.2016.01076/full (Incubation)
- https://www.spring.org.uk/2012/07/the-incubation-effect-how-to-break-through-a-mental-block.php (breaking mental blocks)
- https://www.youtube.com/watch?v=IbdZUKhDx4E (The Torrence test of Creativity)
- https://www.psychologytoday.com/us/blog/is-it-beautiful/201910/creativity-and-chaos
- https://www.ted.com/talks/mihaly_csikszentmihalyi_flow_the_secret_to_happiness?language=en (Flow)

Questions?

Feel free to reach out to me with more questions at

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