

Creativity is just connecting things.
When you ask creative people how they did something, they feel a little guilty because they didn't really do it, they just saw something. It seemed obvious to them after a while. That's because they were able to connect experiences they've had and synthesize new things.

~ Steve Jobs

We Teach Who We Are

Danah Henriksen

Assistant Professor

Educational Leadership & Innovation

Arizona State University

February 16, 2018

Introduction

Past

A little about me...

Marketing / Advertising

Past

A little about me...

Marketing / Advertising



Design / Aesthetics

Past

A little about me...

Marketing / Advertising



Design / Aesthetics



Creativity / Education

Themes

What Creative Teachers Do
Transdisciplinary Skills

Why Creativity?

Creativity connects to all domains
of human knowledge

Dewey (1916; 1934)



Why Creativity?

Social, emotional, cognitive and professional advantages in life

Highly coveted qualities of thinking

(Lewis, 2002; Sternberg & Lubart, 1996; Sternberg, 2006)



Why Creativity?

Creative teaching is
effective teaching...

Anderson, (2002); Bain, (2004);
Bleedron, (2003, 2005);
Chambers, (1973); Davidovitch
& Milgram, (2006); Esquivel, (1995);
Milgram, (1979); Renzulli, (1992);
Torrance, (1981; 1995)





IBM Global CEO Study

Leadership Qualities

Leadership Qualities

Creativity



Integrity



Global thinking



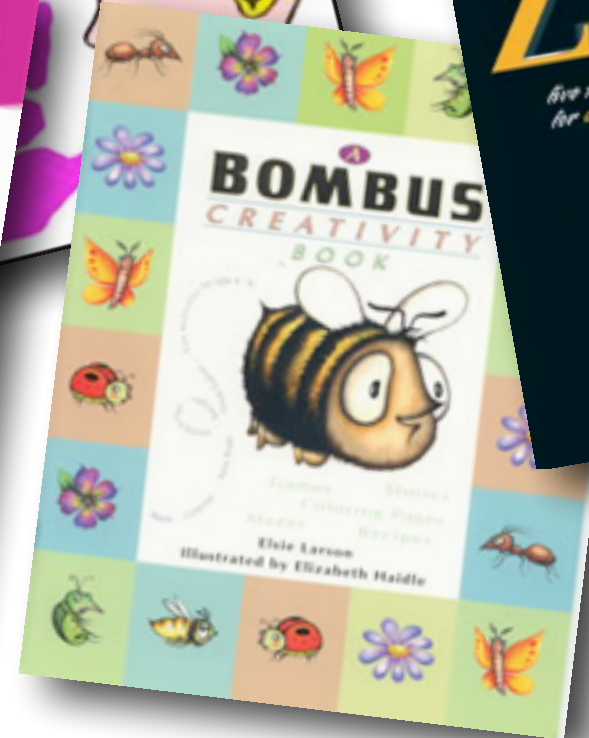
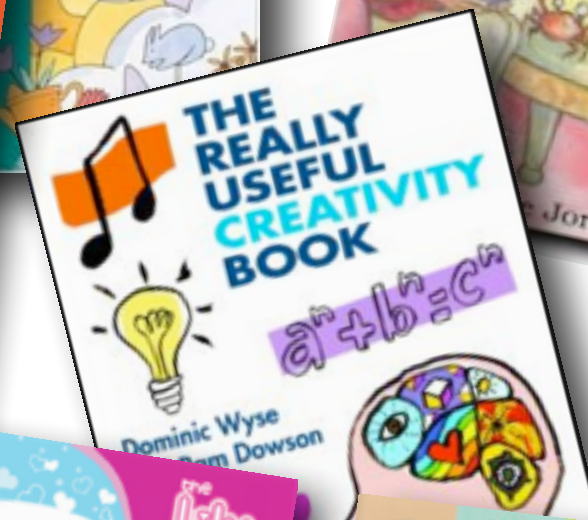
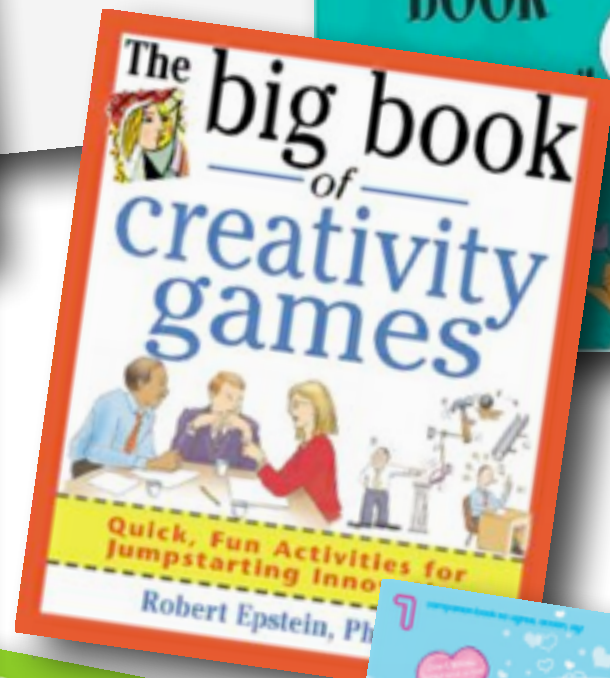
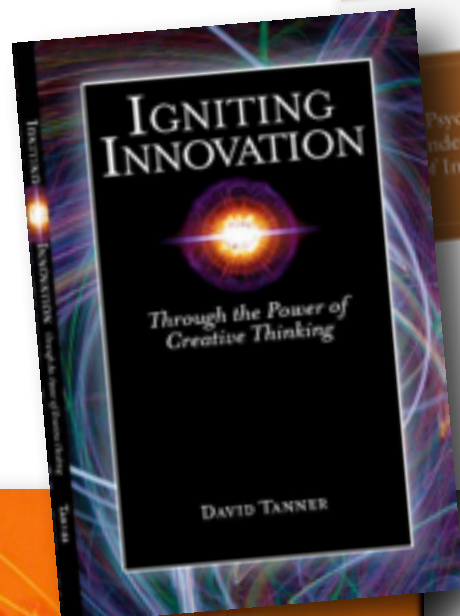
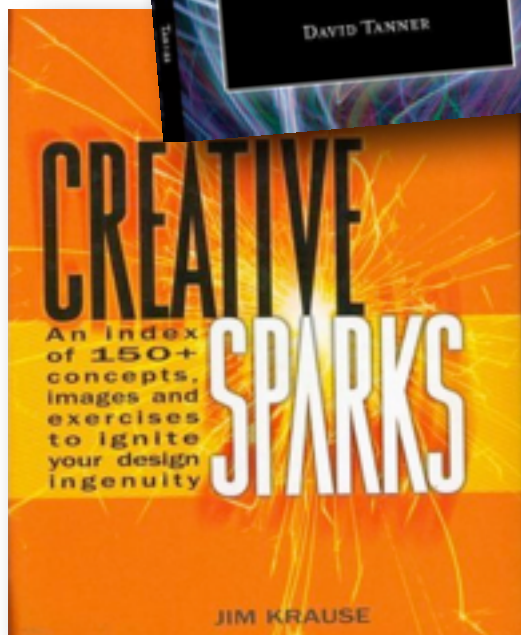
Influence



Openness



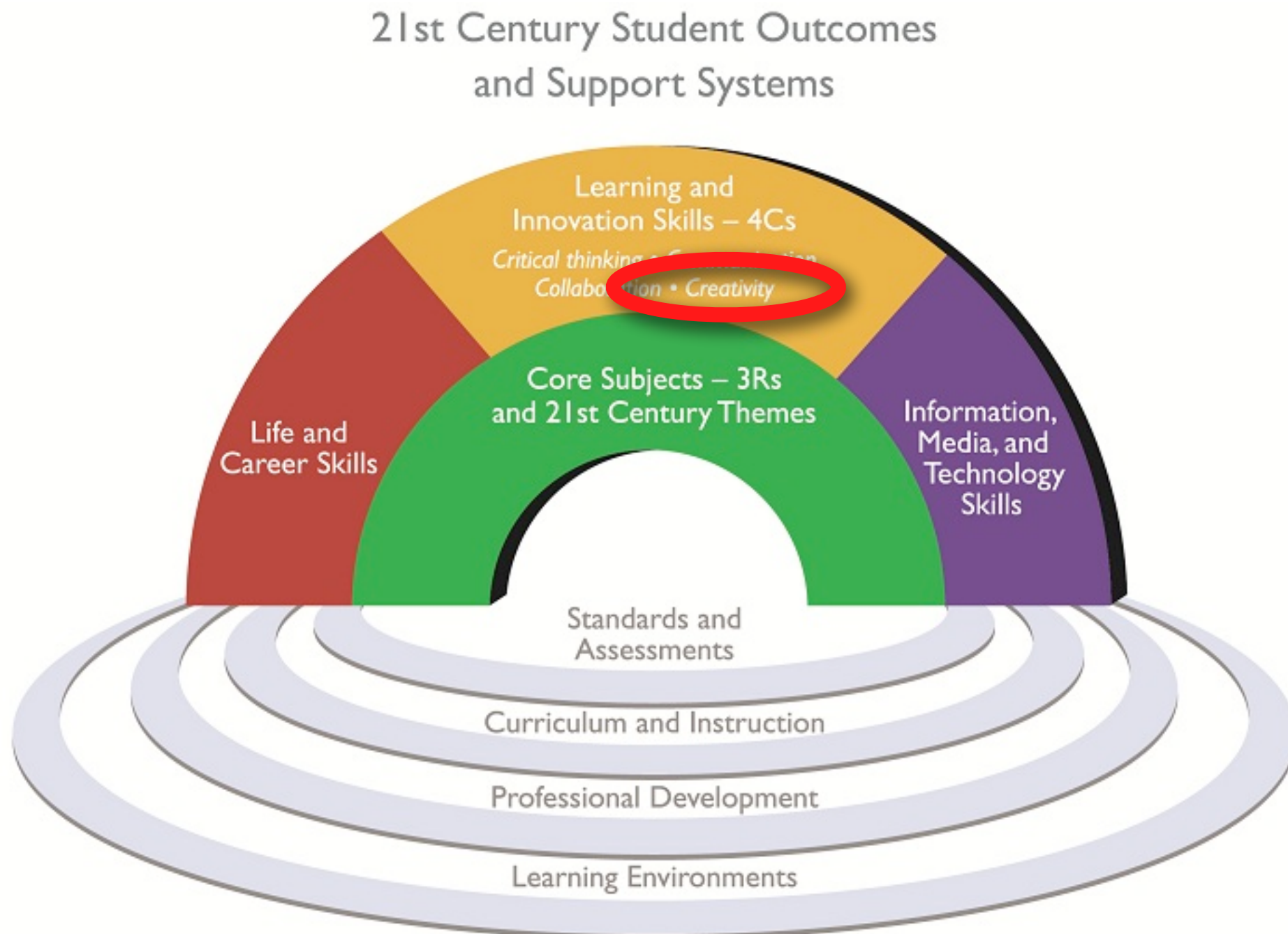
Dedication



Partnership for 21st Century Skills

Critical Thinking
Collaboration

Communication
Creativity



Teachers drive creativity

- A teacher's pedagogy is often a primary driver of how students develop and learn.
- Teachers who model creativity tend to fluidly enhance, support and develop the tendency in their own students (Amabile, Conti, Coon, Lazenby, & Herron, 1996).
- Teacher education and administrative support are key structures for driving and scaffolding how teachers function.

Take a moment...
write down some
hobbies or interests
outside of professional life.

Set it aside, we'll come back
to that.

Creative Teachers Research

Root-Bernstein & Root-Bernstein

Key scholars for my work...

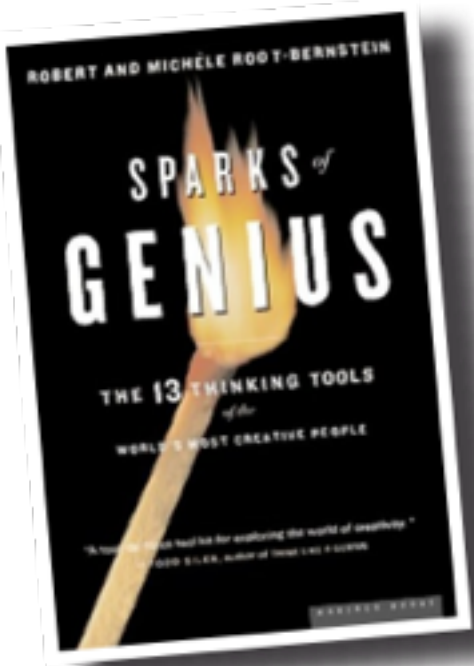


Trans-disciplinary

Creative thinking

...that spans disciplines





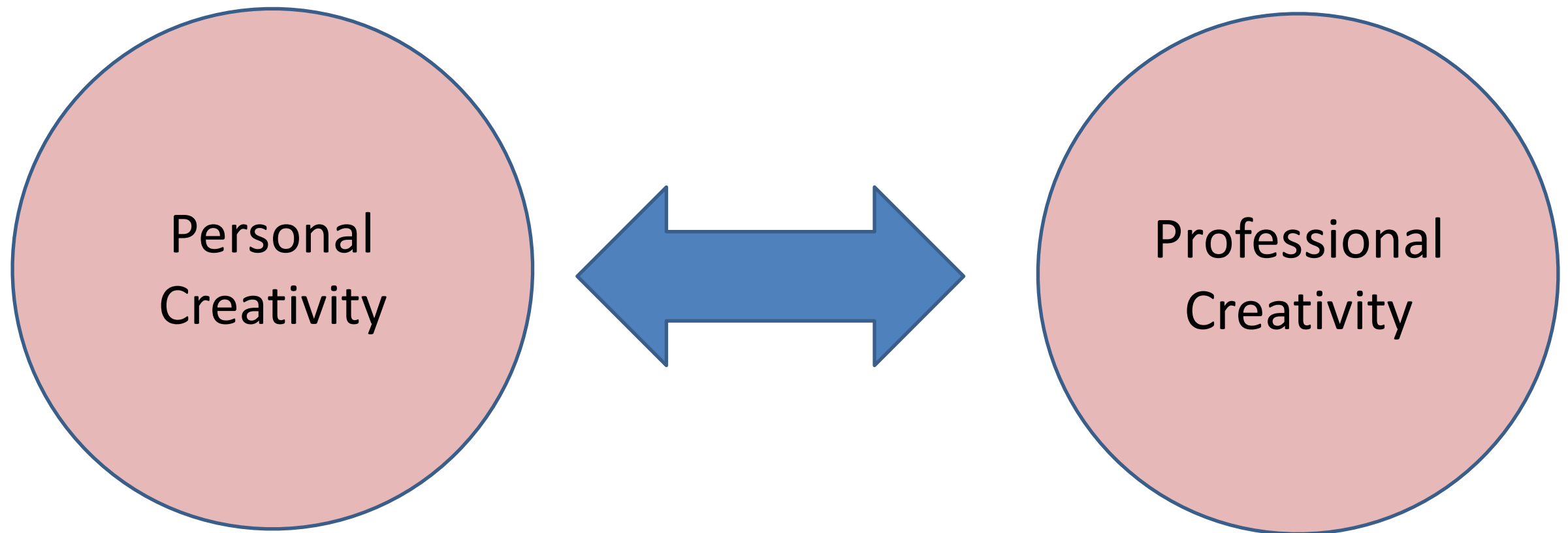
Root-Bernstein

Correlated personal creativity with professional accomplishment

Also suggested a set of creative cognitive skills that innovative, successful thinkers use

philosophy
Arts & Science

Personal / Professional Creativity



The professional and personal-life creativity of successful scientists has a correlation. (Simonton, 2000; Feinstein, 2006); Root-Bernstein (1996; 1999)

Research Questions

In what ways does creativity play a role in accomplished and successful teachers practices?

Do successful teachers engage in creative pursuits and hobbies, and do these impact their teaching?

Are trans-disciplinary thinking skills used by exceptional teachers?



Interviews with Teachers

8 National Teacher Winners/Finalists

In-depth interviews - 2 hours each

Recorded, transcribed, coded

Semi-structured interviews

- Interview questions focused on creative avocations, interests, thinking skills, and influence on classroom practice

Does creativity play a significant role in the teaching practices of successful teachers, and if so in what ways?



Emergent Themes



Real world learning

Emergent Themes

Cross-curricular teaching



Real world learning

Emergent Themes

Cross-curricular teaching



Taking intellectual risks



Real world learning



Real world learning

Teaching alternative energy by having students do town-hall meetings (representing different energy industries, consumer groups, politicians) where they present findings and positions on the topic.

A daily “sky watch” where students all observed weather and sky patterns, then sent their collected data to a NASA program

Teaching formal writing through a grant writing project where students work with local communities leaders and non-profits.

Teaching combinatorial math by having students figure out all the lunch combinations they could get in a year in their own cafeteria.

Cross-curricular lessons

“We do a lot of **theater and kinesthetic movement**, where students might represent different creatures in an ecosystem or they might represent different elementary particles in an atom.”

— Michael Geisen (middle school science teacher)

“I created a ‘Future Think Class’. We do **science related community service**. I try to connect kids to larger causes... to bring a whole other social dimension into the sciences.”

—June Teisen (middle school science teacher)

Taking Risks

“It needs to be about the **ability to try new things**, to make mistakes, to learn from them. For students to see that kind of risk taking and iterative process – I think it helps them to understand how to do things well.” — Michael Geisen

“I need to create the kind of environment where **students feel able to make mistakes** and know that making mistakes is part of our process. It’s intellectual risk taking.” — Sarah Wessling

“I **like trying out new things**. For me, teaching has always been an opportunity to really try out new things - to see how they go, and see what effect it has on other people.” — Alex Kajitani

Profile of Creative Teaching

Cross-curricular teaching



Real world learning

Taking intellectual risks



Chat with your table:
Identify examples of these
themes in your experience



Do successful teachers engage in creative pursuits, and does this impact their teaching?



Michael	Music (guitar, piano, composing); Visual Arts (drawing, sketch, graphic arts); Photography (digital and darkroom); Physical/Athletic (rock climbing)
Sarah	Reading (varied subjects); Games, Film, Writing, Technology; Physical/Athletic (running, kickboxing)
Cindi	Writing (creative writing, non-fiction, poetry); Reading; Word Games/Puzzles
Jason	Music (singing, composing); Travel; Community Service/Volunteer work
June	Visual Arts (drawing and sketching); Sewing; Reading (varied subjects); Physical/Athletic (nature walks and hiking)
Megan	Music (piano and the violin); Cooking; Gardening (all aspects including landscape architecture); Running (long distance, competitive)
Margaret	Music; Reading; Cooking; Physical/Athletic (yoga, walking)
Alex	Music (composing rhymes, raps); Reading; Physical/Athletic (competitive surfing, swimming); Travel

Creative Avocations



Substantive creative interests...
incorporated into effective teaching practice

Music & Art

“For learning right, and obtuse and acute angles, we **came up with a song and a dance** to Beyonce's “I'm a diva”, but instead made it a whole dance to "I'm an angle". Using their senses, and auditory, visual, kinesthetic, tactile approaches, **the kids were creating a song** of their own...at test time you see them at their desk, they are bopping out the song and singing it, so you know they remember it - they *own* it.” -- Megan Allen

Science With Art

“Cell parts, the difference between plant and animal cells. That's one of the standards that we have to teach. So I have students **create an advertisement**, trying to sell cell parts that plant cells have, that animal cells don't have. Like chloroplasts, for photosynthesis. Animals don't have them, but what if you could sell those to an animal cell? ... So we take a look at actual advertising techniques and ads, and consider what a good advertisement looks like?”

— Michael Geisen

We Teach Who We Are

“Outside pursuits always factor into your thinking about your classroom or your students - all the time...**I think that we teach who we are, and I know that I teach who I am.** So, if I am really into kickboxing, I see how facets of that experience connect to things that we're learning in class. If I am reading about Frank Lloyd Wright, which is what I'm doing right now, then I see how something about Frank Lloyd Wright applies to something that we're studying. I think that's true all of the time, that **whatever it is that interests you...how that energy manifests itself in the fabric of the classroom.**”

-- Sarah Wessling

Let's take a moment and come back to your own creative interests

Do you incorporate these in your professional
life? If yes, how? If no, how could you do so?
Take a few moments and share with your table.



Are trans-disciplinary thinking skills
used by successful teachers?



Trans-disciplinary

Creative thinking

...that spans disciplines



7 trans-disciplinary habits of mind



Patterning

Perceiving

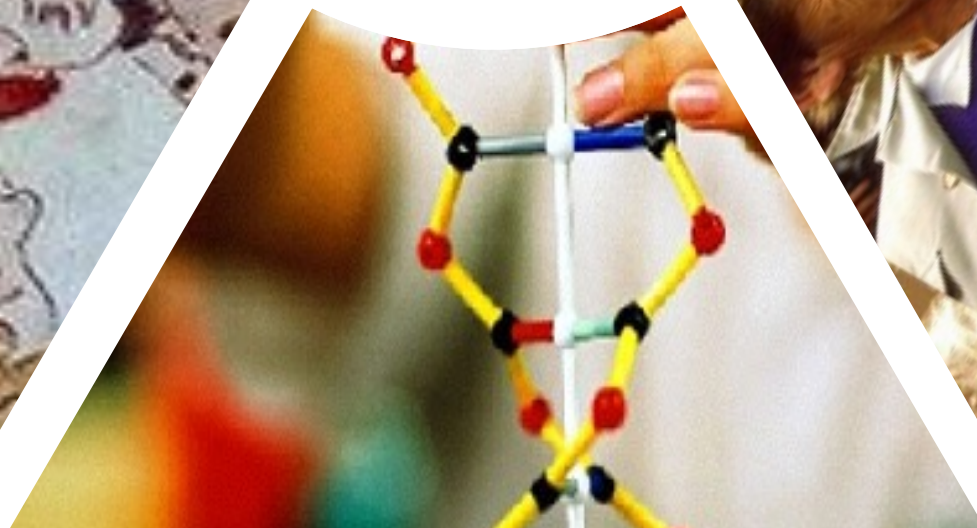
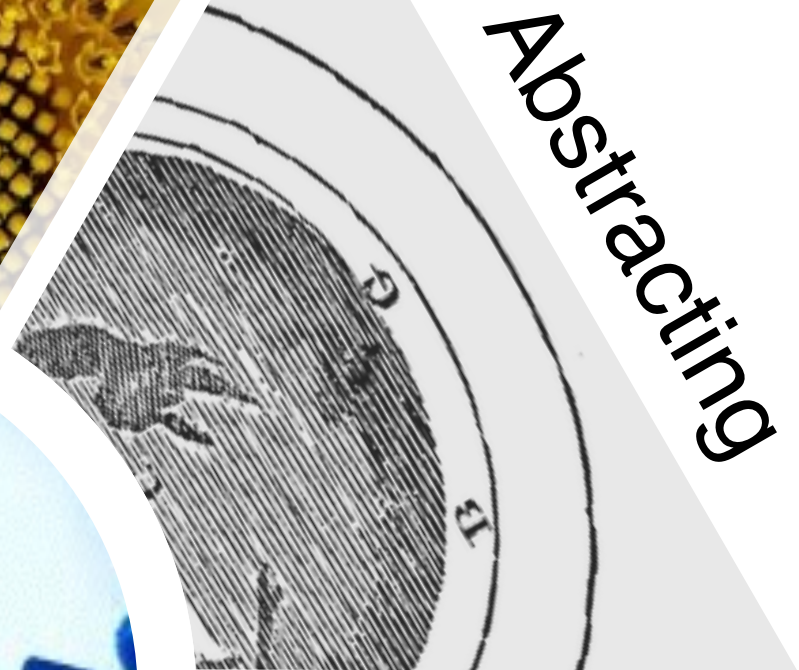
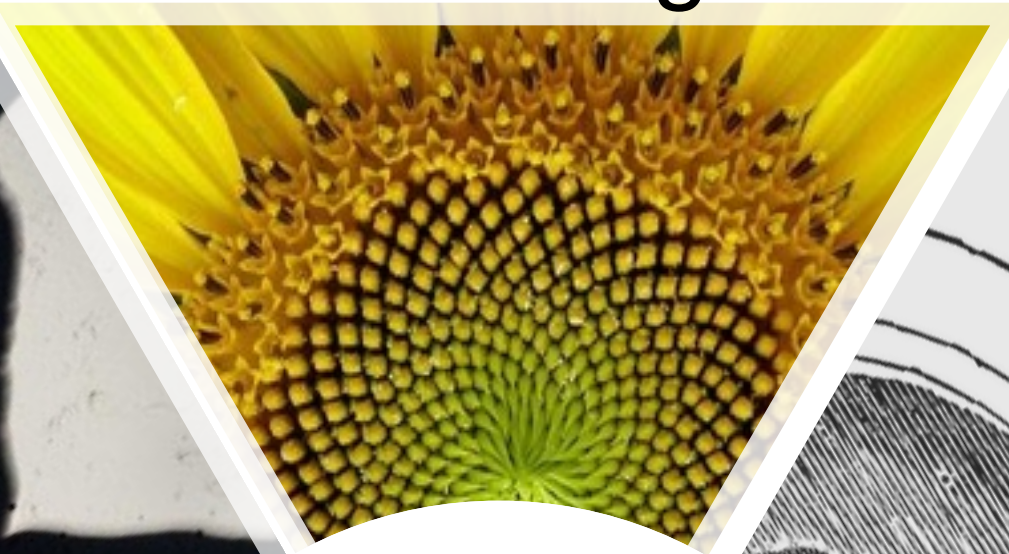
Abstracting

Synthesis

Playing

Embodied
Thinking

Modeling



Abstracting

“I ask students to think abstract to boil down the distractions. In fact, I use that term with my kids all the time...I may **start with having students do writing that has some constraints** with it, and then we start to **boil down the most important words** so we eliminate the distractions. Then we look at how if we parse some of these words that we boiled down together, we can **start to create metaphors, create analogies.**”

— Sarah Wessling

Embodied Thinking

“There’s the number line dance we do. To give them **a physical sense of the idea...**“Negative to the left, positive to the right, it's the number line dance, I could dance all night.”...Students taking a test, they're doing the hand signals to remember where they're going.” -- Alex Kajitani

“When we were doing the order of the planets from the sun, I would have the kids **get up and form a human solar system.** It’s important to me to find ways to use the body to help teach concepts - that movement is so important.”
-- Jason Fulmer

“Having students take on the persona of an object or an organism. Or in more traditional lab settings to **actually get their hands right in there.** What does that substance feel like? If we're doing erosion and deposition, get in there and work with the sand. I want them to be engaged and using their physical senses as much as possible.”
-- Michael Geisen

Modeling

“When we're studying polyhedrons, we're making little models with toothpicks and gumdrops to give a demonstration of how they work or look. And we do stuff like that all the time. Again, the students are **creating something, they're using their hands**, they're talking about it. They're using all different modes of thinking within modeling.” -- Megan Allen

“We have a math project where the students **build, design their own dream house** where they have to calculate square footage and things like that. So they actually make a model. Models should happen all over mathematics.”
-- Alex Kajitani



Some key take-aways...

What do exceptional teachers do?

- Three themes: Risk-taking; Real world; Cross-disciplinary

Where do get their ideas?

- Outside interests/avocations: Connecting personal and professional creativity

How does the process of creative thinking for teaching work?

- Trans-disciplinary skills/thinking

We Teach Who We Are

“Outside pursuits always factor into your thinking about your classroom or your students - all the time...**I think that we teach who we are, and I know that I teach who I am.** So, if I am really into kickboxing, I see how facets of that experience connect to things that we're learning in class. If I am reading about Frank Lloyd Wright, which is what I'm doing right now, then I see how something about Frank Lloyd Wright applies to something that we're studying. I think that's true all of the time, that **whatever it is that interests you...how that energy manifests itself in the fabric of the classroom.**”

-- Sarah Wessling

More info...

Henriksen, D. (2016). The seven transdisciplinary habits of mind of creative teachers: An exploratory study. *Thinking Skills and Creativity*. 22, 212-232.

Henriksen, D., & Mishra, P. (2015). We teach who we are: Creativity in the lives and practices of accomplished teachers. *Teachers College Record*. (117)7. p. 1-46.

Henriksen, D. (2014). Full STEAM Ahead: Creativity in Excellent STEM Teaching Practices. *The STEAM Journal*, (1)2, Article 15. Available at: <http://scholarship.claremont.edu/steam/vol1/iss2/15>

Henriksen, D., & Mishra, P. (2013). Learning from creative teachers. *Educational Leadership*. 70(5). Retrieved from <http://www.ascd.org/publications/educational-leadership/feb13/vol70/num05/Learning-from-Creative-Teachers.aspx>

Time for
Q&A...

Thank you

danah-henriksen.com