

Eureka!
A K-12 Cognitive Skills Matrix
for Developing and Assessing Creativity

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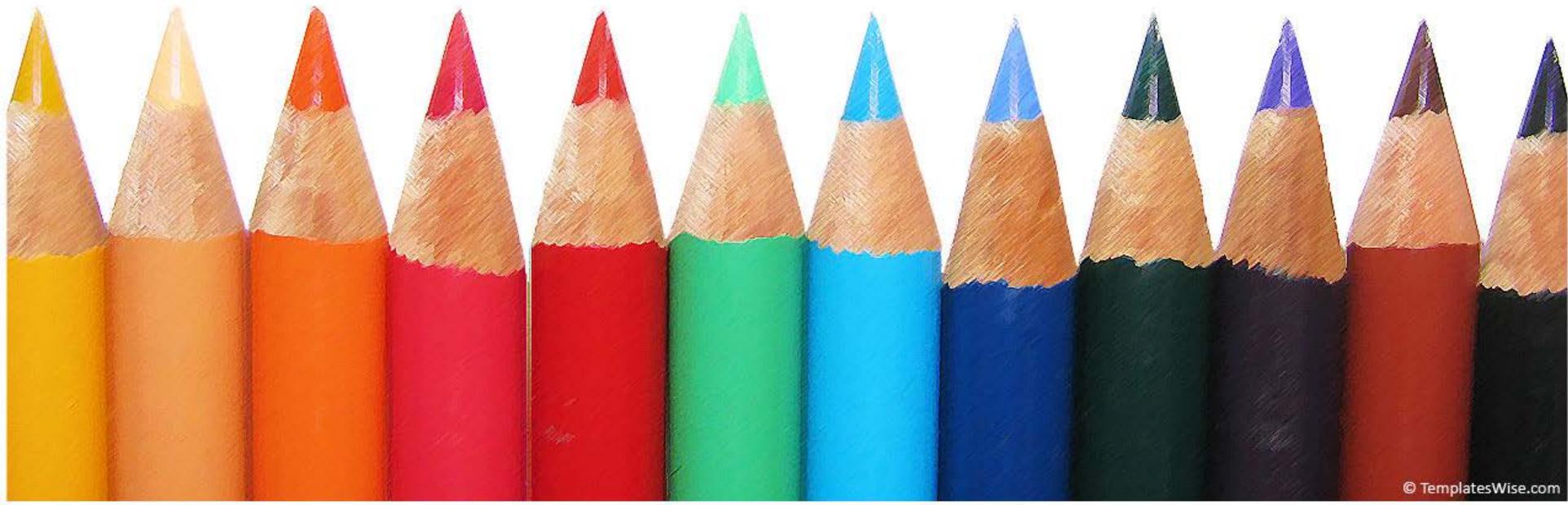


The term “creativity” is like a Rorschach—we see what we want to see.

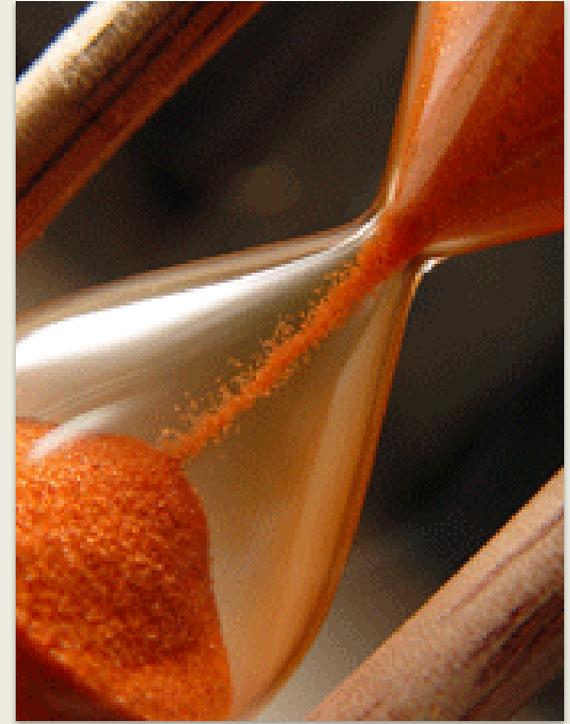


We're going to unpack the concept.

You are expected to develop creativity
and imagination through your art
program.



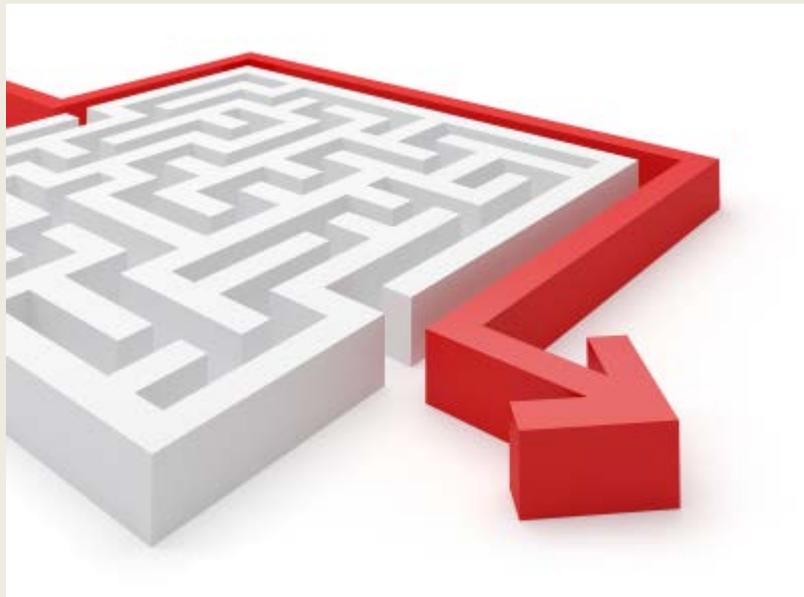
The Problem is worse...

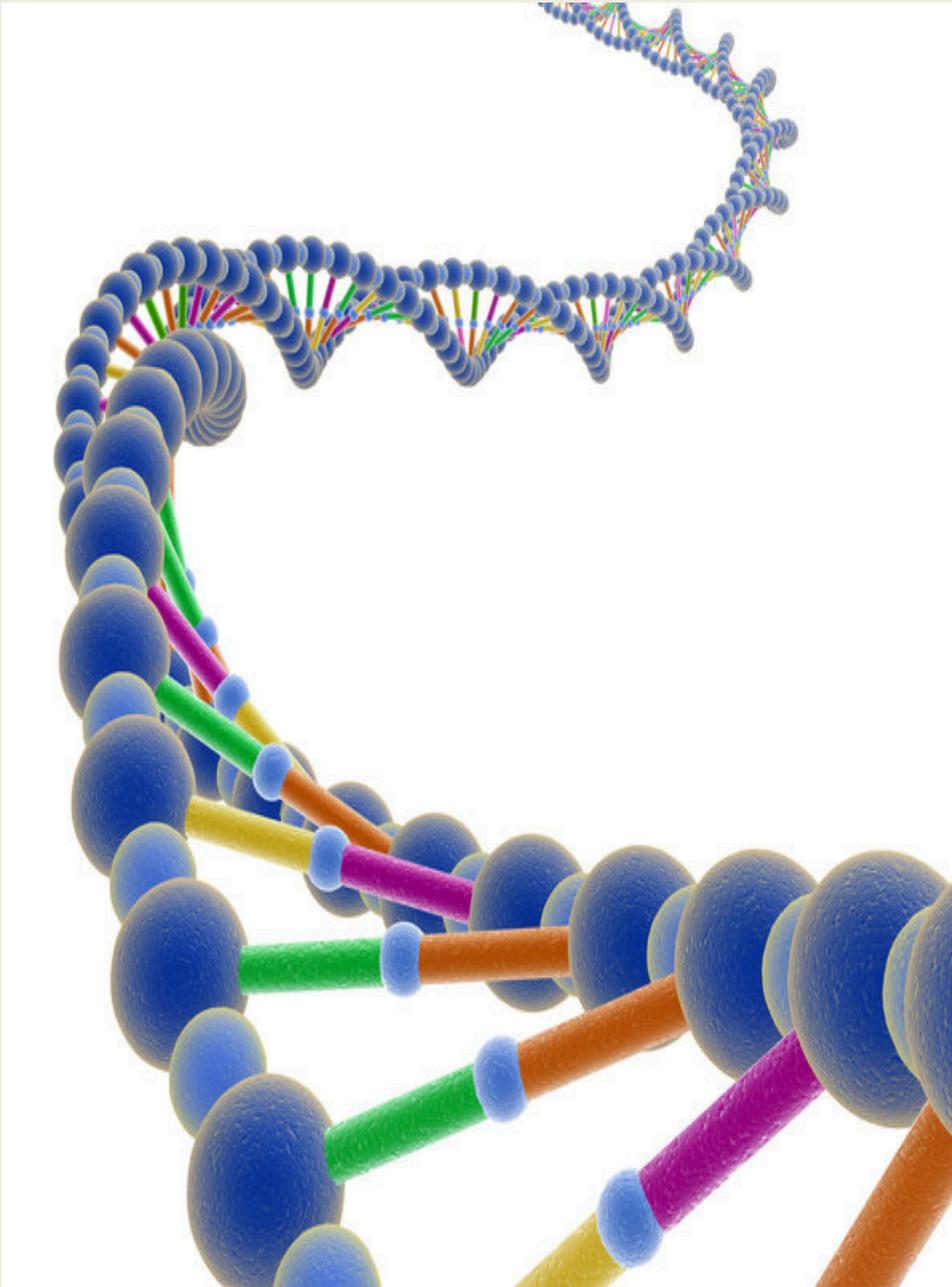


If we don't live up to expectations, we lose another justification for art in schools.



You want creative students—
and to clearly show how art
develops creativity and
imagination.

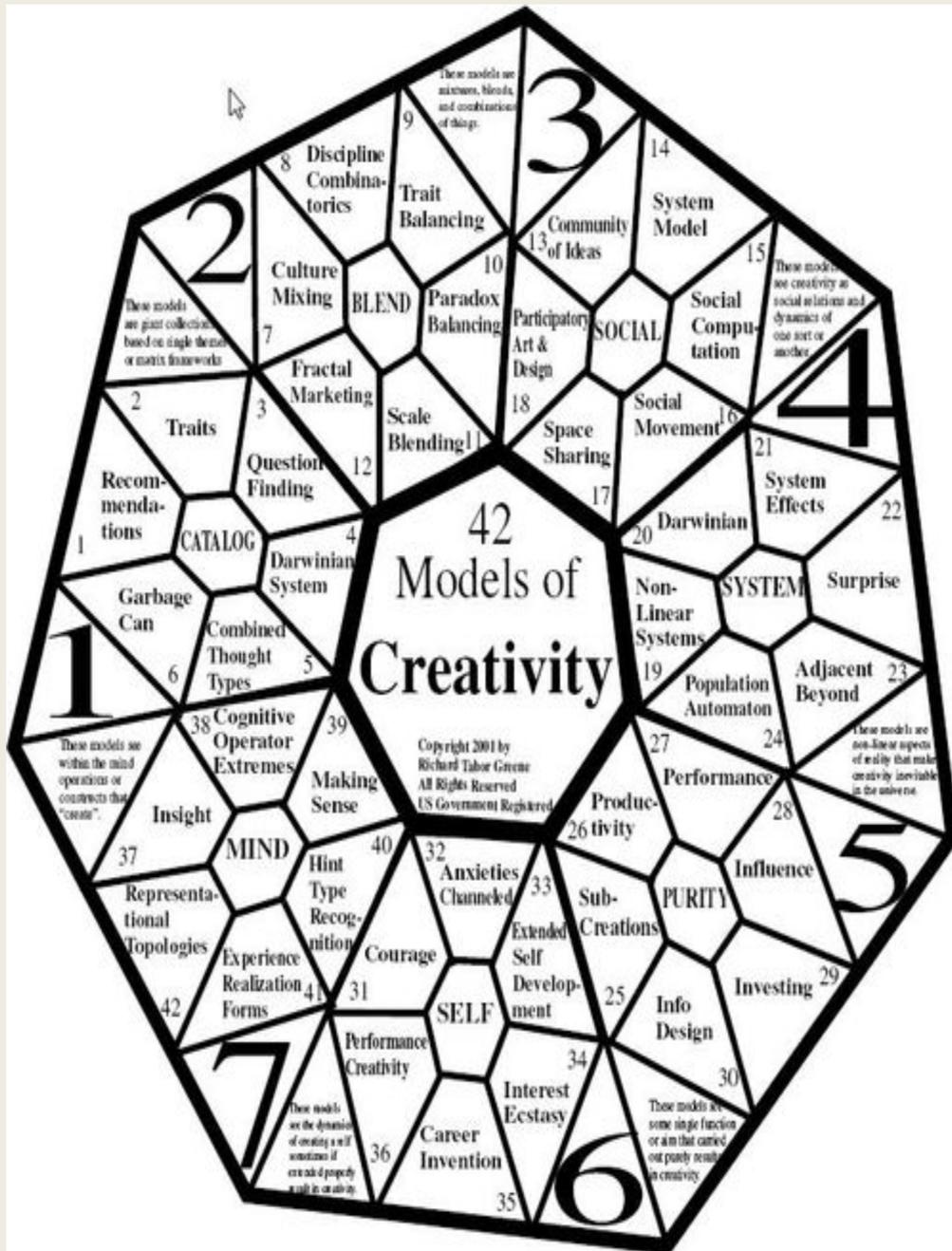




That was wishy-washy.
Here's what I think we really
want—students with
creative DNA.

To get students with creative DNA, use a creativity model to clarify objectives and transform instruction.

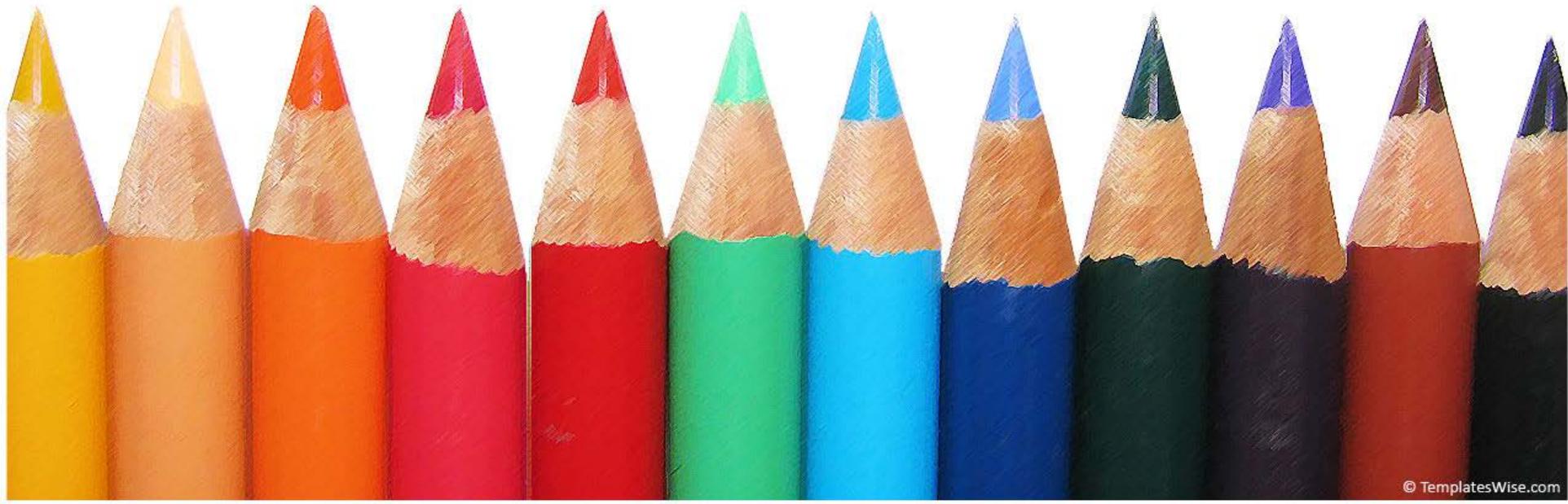




I have no idea what this chart is trying to say about creativity....

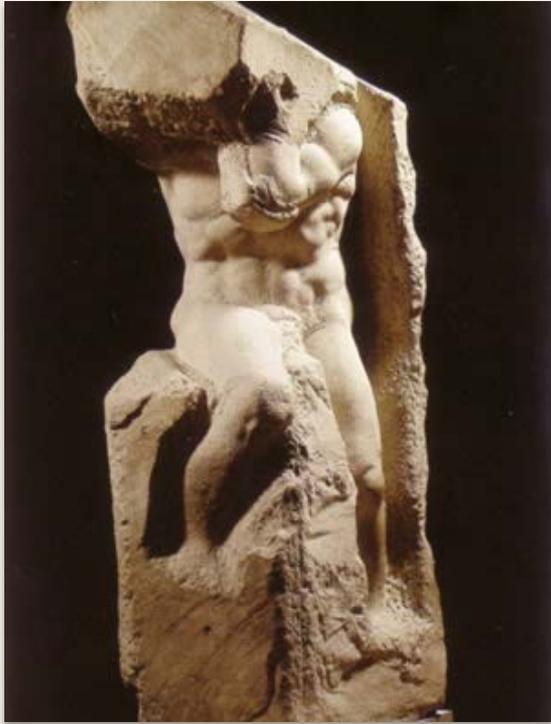
-Melissa's Miscellaneous Musings

Creativity training is most successful
when guided by a creativity model.

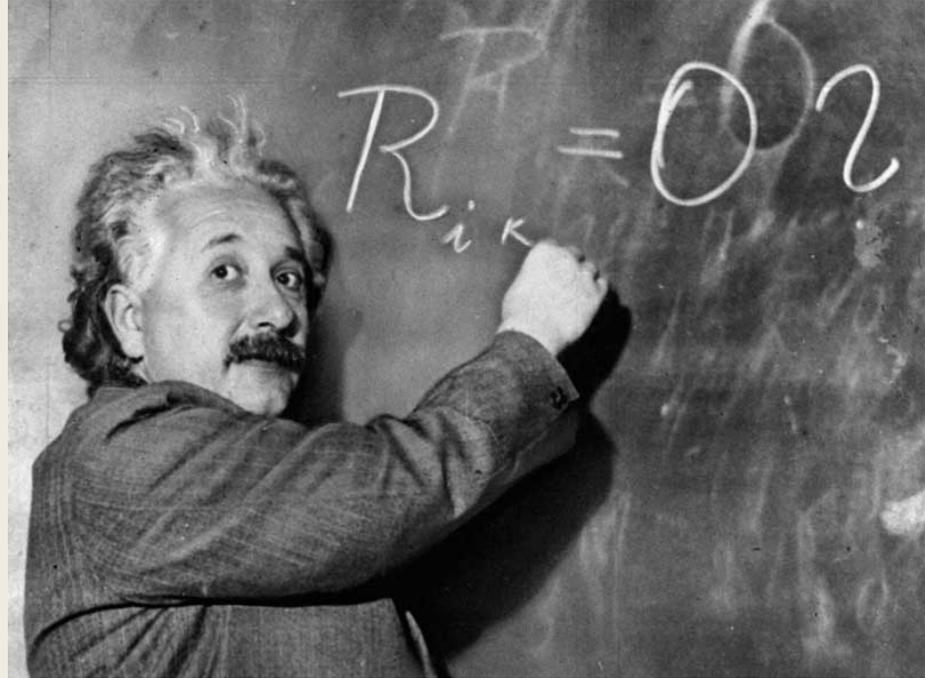




A model defines what we mean by creativity and points to a common goal.



We use the term “creativity” to refer to a vast array of human behavior.



Domain Change Creativity is beyond the scope of K-12 education, which focuses on individual and peer creativity



Why aim for
the Big C?

**Role models
are crucial:
Even if they
can't achieve
at this level,
they can learn
how to act like
Big C creators.**

**(L. Milbrandt;
H. Gardner)**



A model provides a working definition that targets the cognitive and emotional skills needed for creativity.

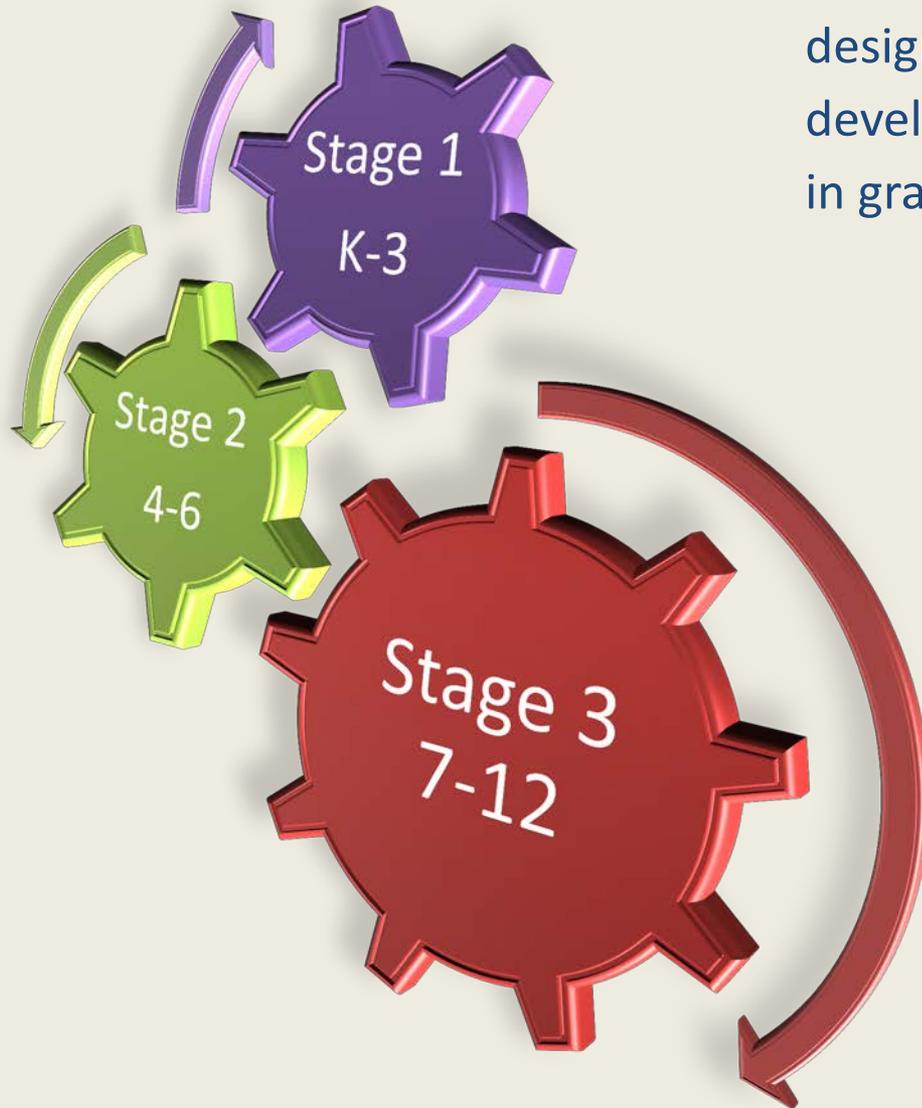


Research on creativity training shows that using a model improves results.

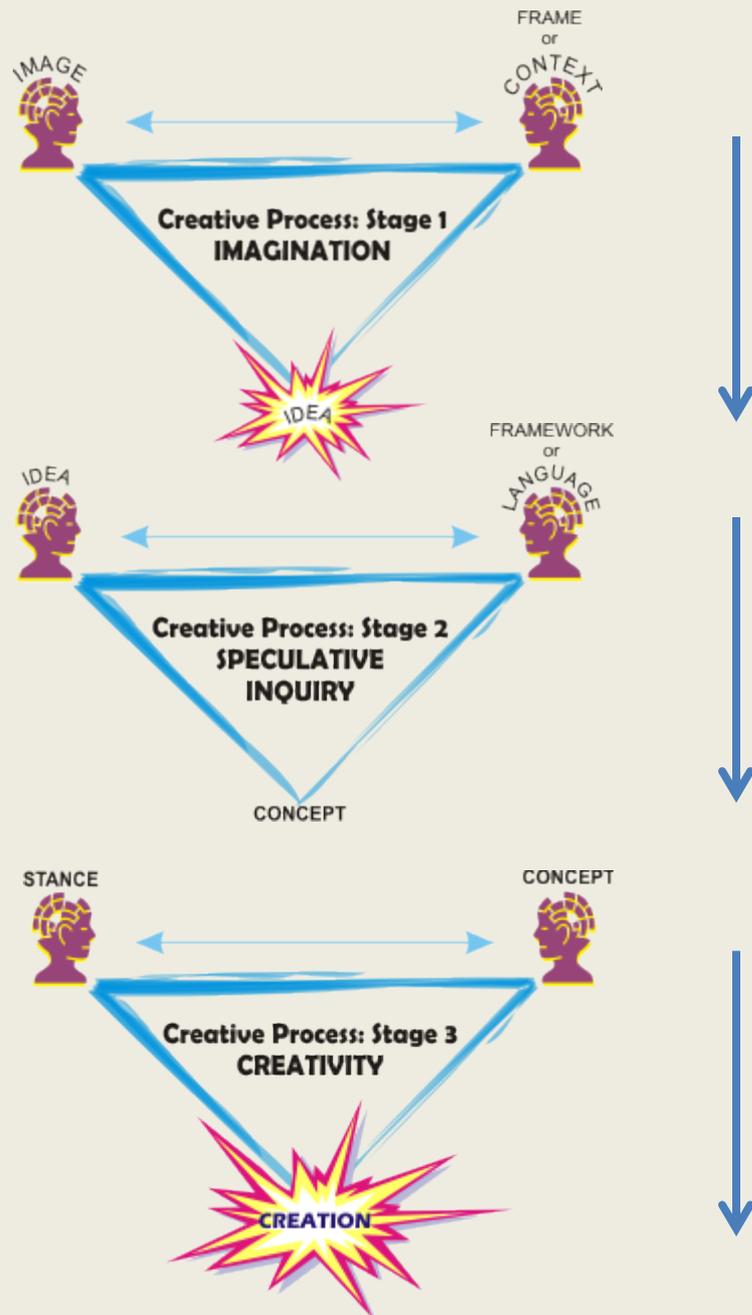
A relatively unambiguous conclusion: creativity training works.

Scott et. al. 2004

- quantitative meta-analysis
- based on 70 prior studies meeting high internal and external validity standards
- well-designed creativity training programs induce gains in performance that generalize across criteria, settings, and target populations.
- more successful programs were likely to focus on development of component cognitive skills ($r = .15$, $\beta = .05$) and the heuristics involved in skill application, using realistic exercises appropriate to the domain at hand
- such cognitively based programs produced the only sizable positive correlation ($r = .31$) and regression weight ($\beta = .24$)
- Those programs that were based on an explicit model of creativity produced greater benefits ($r = .39$; $\beta = .46$) overall and in the criterion specific analysis than those which relied on a collection of theory-independent techniques.
- training should be lengthy and relatively challenging with various discrete cognitive skills and heuristics being described, in turn, with respect to their effects on creative efforts
- suggests that creativity training is effecting the critical manifestation of creative thought—the generation of original, or surprising, new ideas (Besemer & O'Quin, 1999).

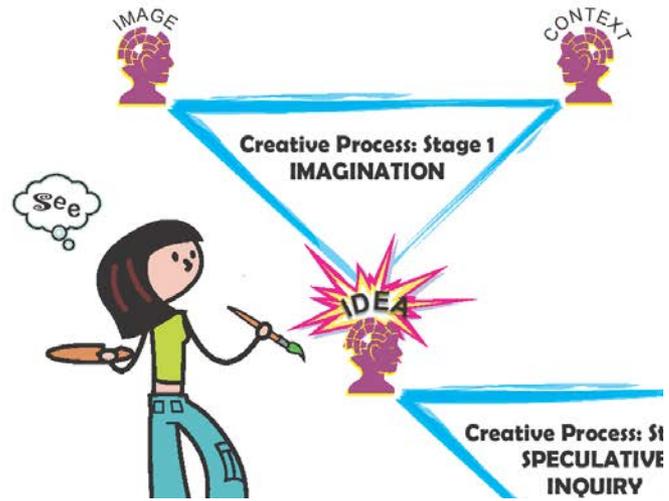


Our 3-stage model is designed to sequentially develop a creative mindset in grades K-12.



The model allows for differentiation; even with older students, start with stage 1 and allow them to progress at their own rate.

The Creative Process



Based on Arne Ludvigsen, 1980

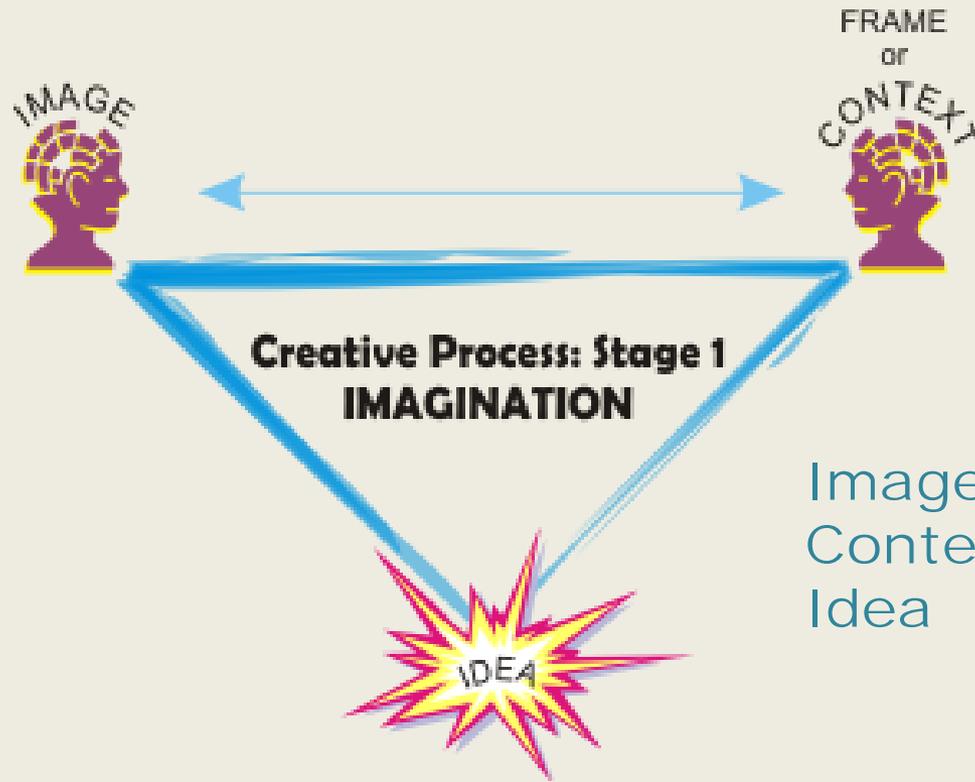


Image +
Context/Frame =
Idea

In Stage 1, the model shows how to generate and develop ideas through imagination.



Change the image =
change the idea

Change the frame =
change the idea

Natural way our mind
works

Ex: Freedom



A different point of view is simply the view
from a place where you're not.

yourpointofview.com

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pleasure



pain



pleasure



pain

Open minds are welcome here.

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leader



follower



follower



leader



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Notice the values being transmitted:

- “Truth” depends on your perspective; respect for multiple points of view
- Not all cultures or political systems tolerate such values
- Tacit (via witty format): Imagination as a value...for whom and why? (Medium is message)
- Double-edged: Pleases individual ego of consumer while promoting business goals

Idea-formation is at the root of Visual Thinking Strategies.

Take a minute to Look at this picture.

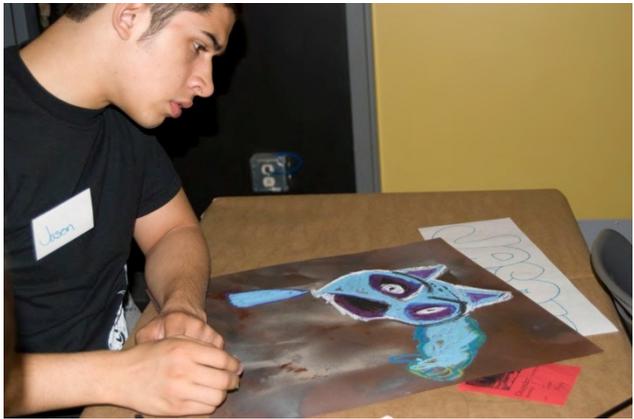
What's going on in this picture?*

What do you see that makes you say that?

What more can we find?

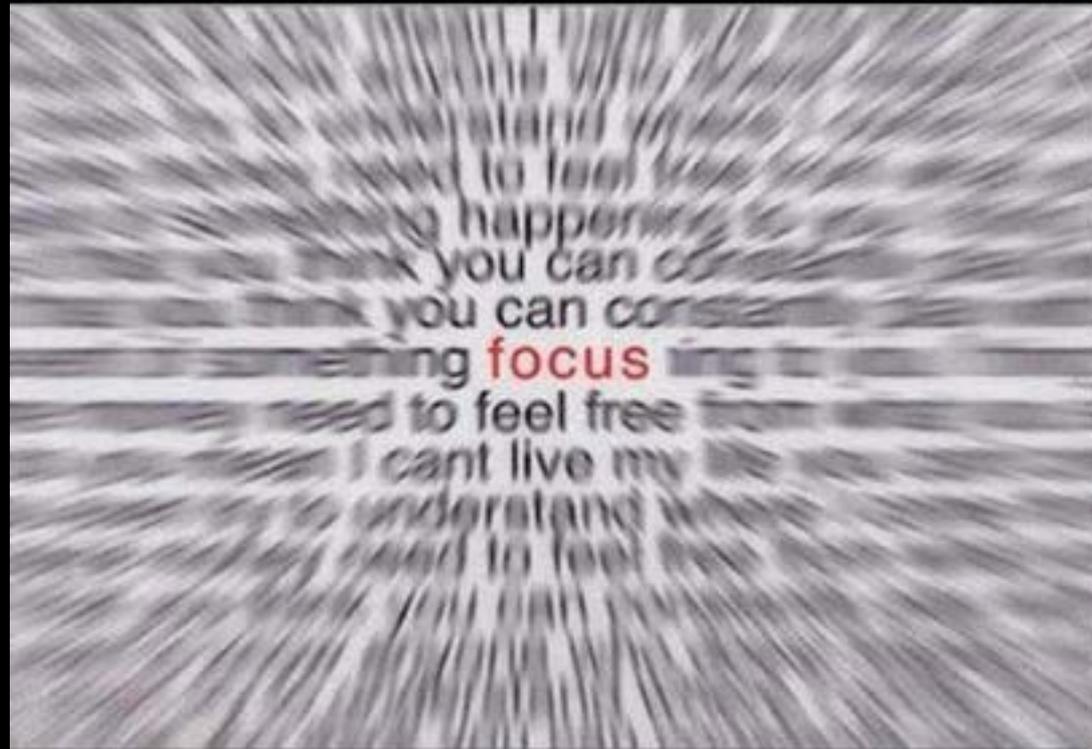
Paraphrase.
Point.
Link.





Stage 1: Risk and Reframe

- Reframing what we know and do so that we re-encounter it in new ways
- Reframing is built into the study of art
- Learning to draw/paint reframes our understanding of space and what we see
 - 3d to 2d surface



Assessment: A creativity model tells you what to focus on.

Assessment for Creativity

- **Purpose should be to guide instruction, not “grade” students**
- **“Mom, I got a B in Creativity this week!”**
- **Assessment should feel like a natural part of the creative process, not a separate “test”**
- **Should yield useful, constructive information for the student that motivates future endeavors**

Stage 1 Assessment: An automobile made of postage stamps

Criteria: Does it ask the student to risk or reframe experience?

- **Are we assessing process or product? Our model helps!**
- **Different standards**
 - **Process—degree of exploration**
 - **Product—degree of resolution, novelty, etc.**
- **Are we assessing image transformation, context transformation, or idea generation (image + context)?**
- **Question of emphasis – Our model helps us decide**
- **Is the focus on the transforming and combining the visual structure of cars and stamps, or on the meaning cars/stamps have for us (context), or both (idea)?**
- **Action research: class sets standards of exploration, resolution, novelty**

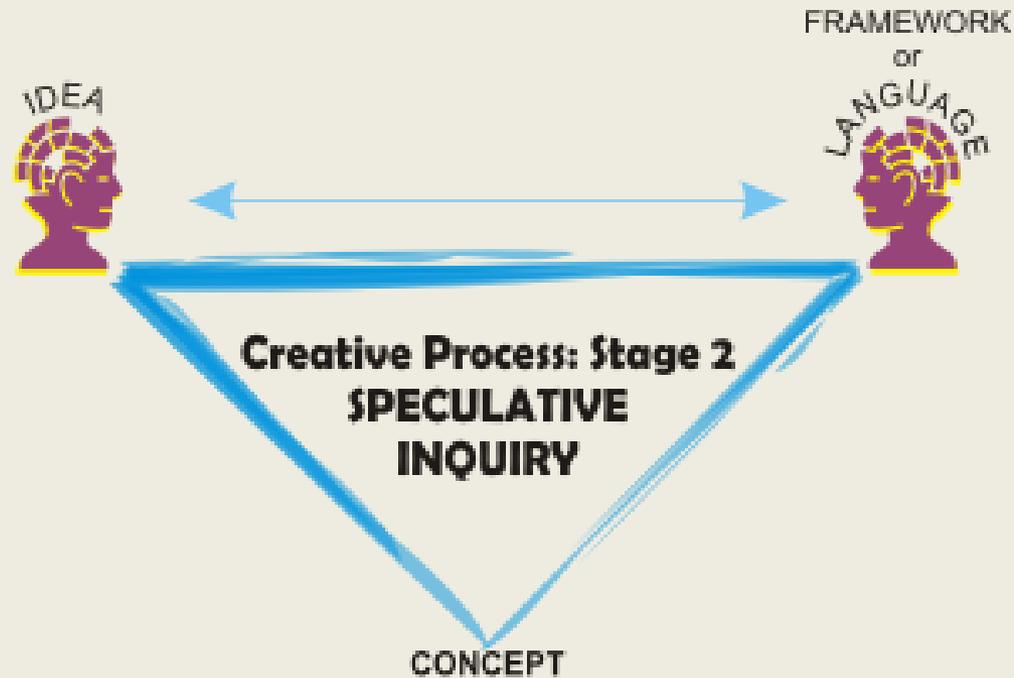
Stage 1 Assessment: How do we set criteria based on a cohort?

Criteria: Does it ask the student to risk or reframe experience?

- **The model tells what to look for**
- **Construct rubric that measures imagery or context on a continuum ranging from unique to cliché**
- **What standard?**
- **As compared to a cohort, i.e. a class, grade level**
- **What are the types and range of images produced by students a) in class as part of lessons, b) at home/alone, c) with peers**
- **Image Bank: Kids sort and arrange images on a continuum of familiar to unique to “out of this world.” Time passes; repeat or have kids arrange own work on a continuum; compare and look for patterns; express in terms of image qualities**

Ideas do not know what
discipline they are in.

They need a language or framework...

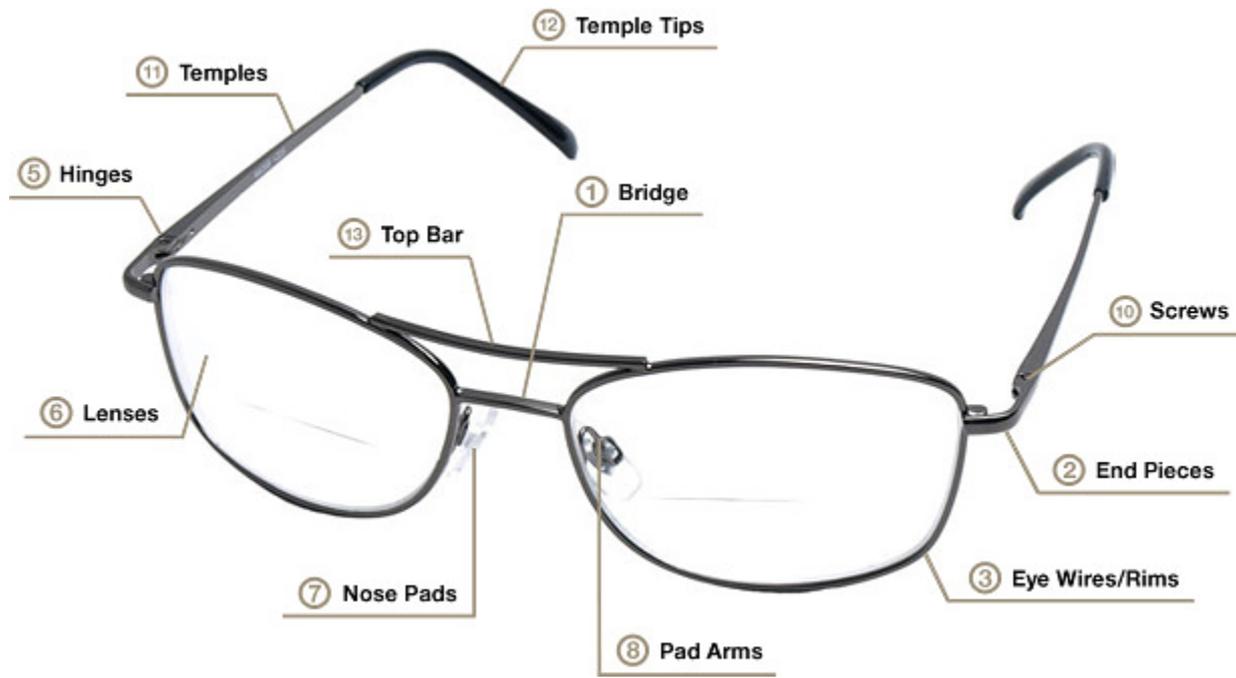


In Stage 2, the model shows how connecting alternate hierarchies of value and logic lead to new concepts

Difference between context/frame and language/framework



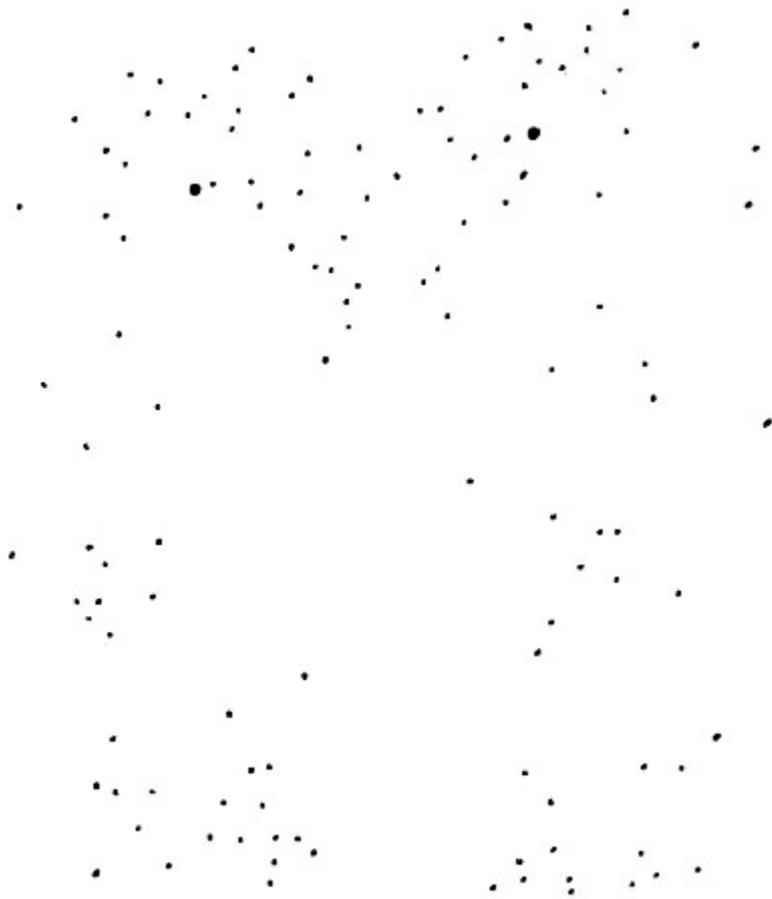
Difference between context/frame and language/framework





Connecting ideas by asking students to...

- Reflect on and critique assumptions about the systems of value and logic they are familiar with
- Reason speculatively

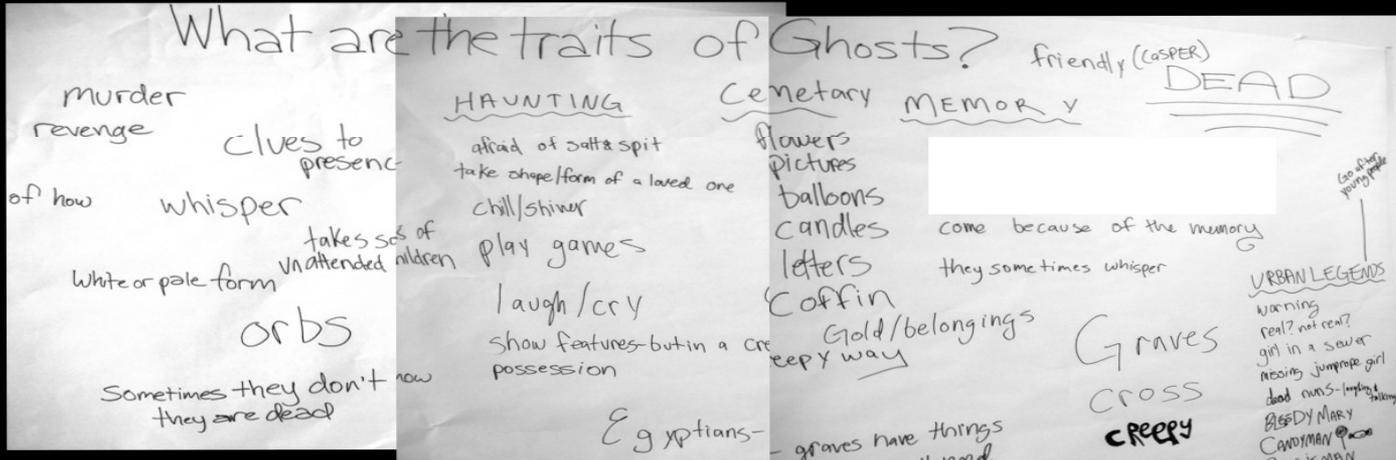


Reasoning framework--criteria

- It has to be appropriate to the idea—the ‘test’ of this is whether it is adequate for extending the idea—you can’t graft any system on to any idea—suitability—does it result in extending this idea...example...

Thinking about Ghosts

based on a group discussion about belief in ghosts
 Apparitions: Painting group, Spiral Workshop 2008



The Iroquois people say that decision makers should consider the effect of their decisions on seven generations into the future.
 Do you think that this is good or necessary advice?

Can you think of any decisions being made today that will affect people in seven generations? (Figure 25 years for a generation.)

Does being afraid help people to avert disaster?

(dis)ORDER

Name _____

Apocalypse

Spiral Workshop

List movies that you have seen that are based on apocalyptic scenarios.

Do your friends ever jokingly plan what to do in case of a disaster?
 What's the disaster? What's the plan?

Does your family ever talk about disaster plans?
 What disasters? What are the plans?

Do any of the things people have or do in dystopian movies seem cool? Describe.

Artist As Medium

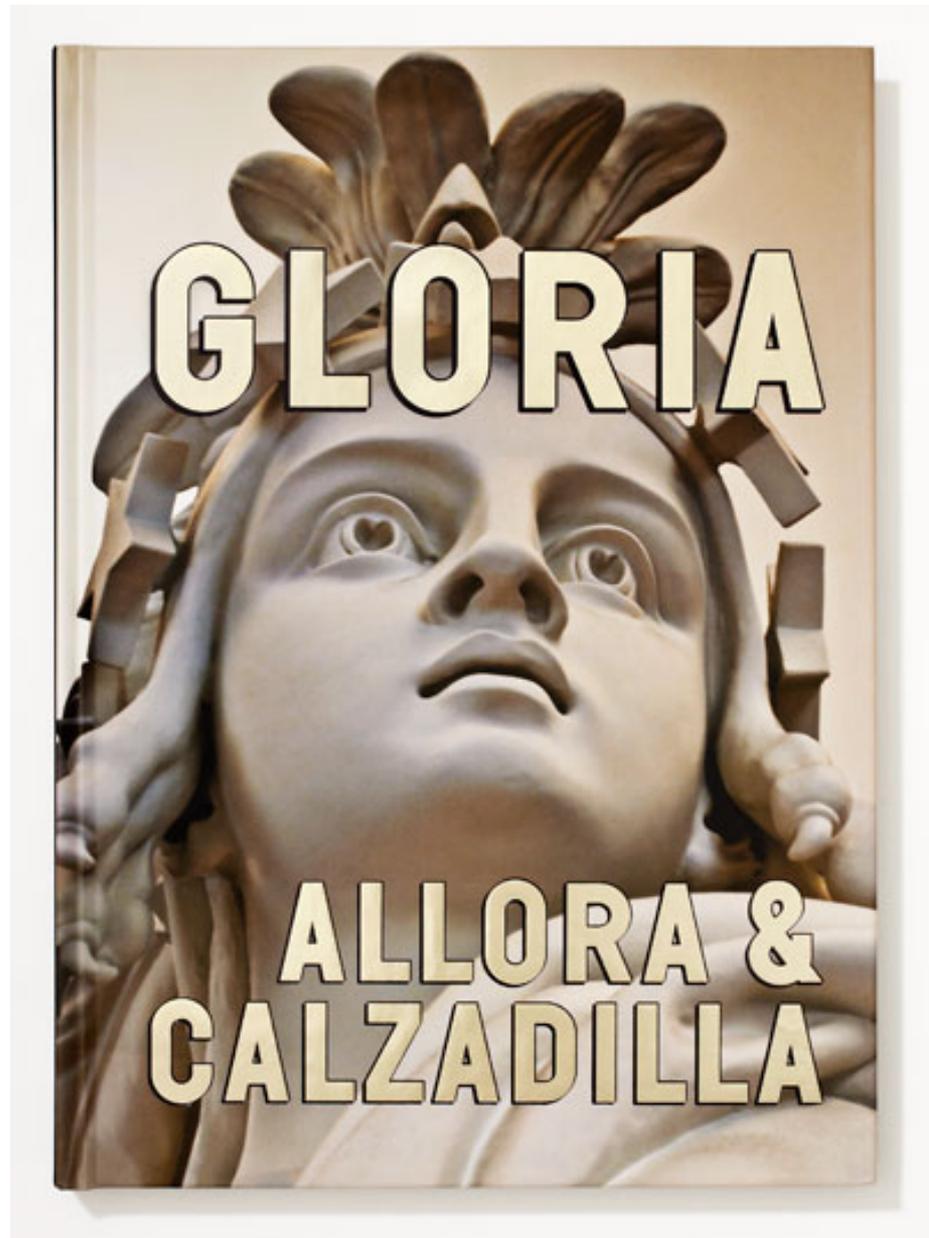
self-portrait as medium, using posed photography and projection
 Apparitions: Painting group, Spiral Workshop 2008

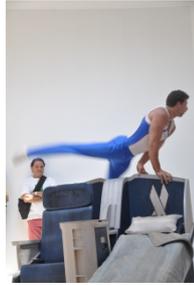


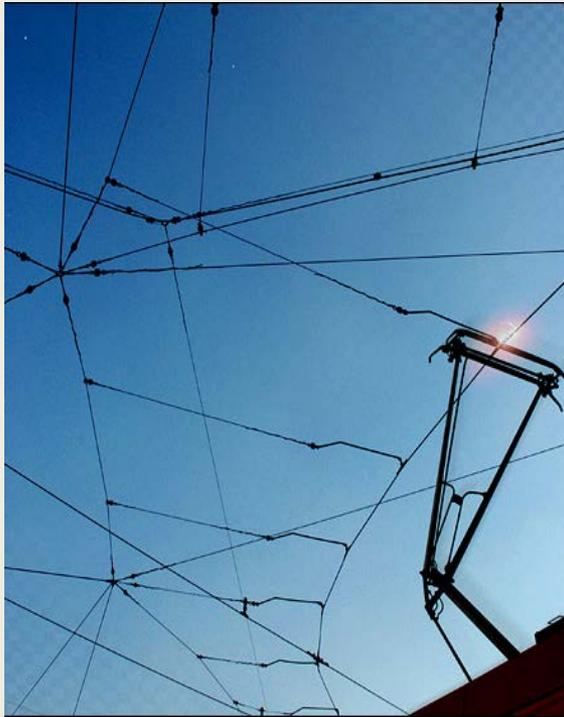
Equipping students with a framework for thinking and an expressive language From The Spiral Workshop

**Contemporary artists
craft their own
languages**

The “Elements and Principles” in
contemporary art are dynamic







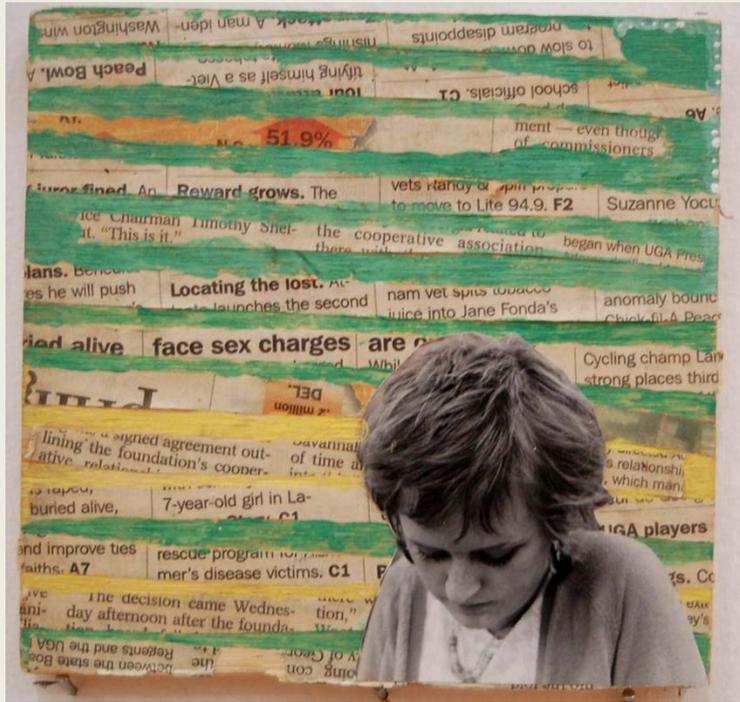
Idea + Thinking
Framework
(Language) =
Concept



Establish new
connections.



Connect, intersect, and
explore points of
tension between ideas.



In Stage 2, students connect ideas by revealing points of tension or...



Intersect systems of value and logic to reveal unexpected connections.

Stage 2 Assessment: Update the Icarus Myth

Criteria: Does it ask the student to connect and critique? To explore and exploit points of tension?

- **LESSON:** Update the myth of Icarus. Is there a dangerous dream of progress in the modern era that can be used as a cautionary tale? Use elements from both the ancient myth and its modern parallel in your product.
 - Source material: Myth
 - Strategy: Reframing narratives and issues
- Hint: Perhaps the dream of nuclear energy or some other modern panacea might be used.

Underlying Formula: Using abstract qualities (*adjectives and adverbs*) to describe intangible processes (*verbs*) and abstract entities (*nouns*) in unusual ways

Use existing contextual frames as source material

Historical, Emotional, Social/sociological, Psychological, Educational, Economic, Cultural, Familial, Mythic, Scientific, Phenomenological/Experiential, Vices, Virtues, "Isms"

These are the systems of value and logic that are connected and critiqued

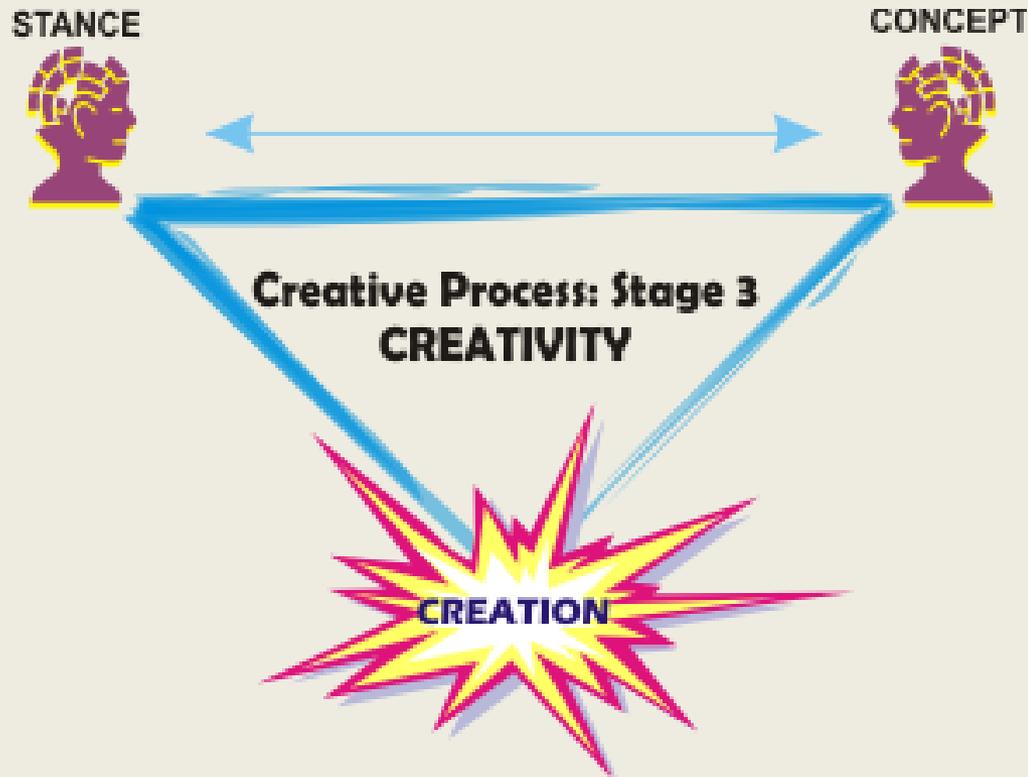
Use strategies to expand, alter, explore, transform or generate new contexts

Anthropomorphizing, Psychological projection, Empathy, Narratives, Reframing familiar stories, Reframing issues and historical events, Presenting arresting juxtapositions, Binary oppositions

Stage 2 Assessment: Update the Icarus Myth

Criteria: Does it ask the student to connect and critique? To explore and exploit points of tension?

- **Is the focus of assessment:**
 - **Connecting**
 - **Critiquing**
 - **Exploring points of tension**
 - **Exploiting points of tension (problem finding)**
 - **The concept of the work**
- **What standard? As compared to a cohort, i.e. a class, grade level.**
- **Action Research: Determine range of student understanding and ability**



In Stage 3, the model maps how the 5 elements of a creative stance work together to generate new knowledge.



“When stereotypes attempt to take control of their own bodies, they can only do what they are made of and they are made of the pathological attitudes of the Old South.



Therefore, racist stereotypes occurring in my art can only partake of psychotic activities.”

-Kara Walker



1. Personal Objectives



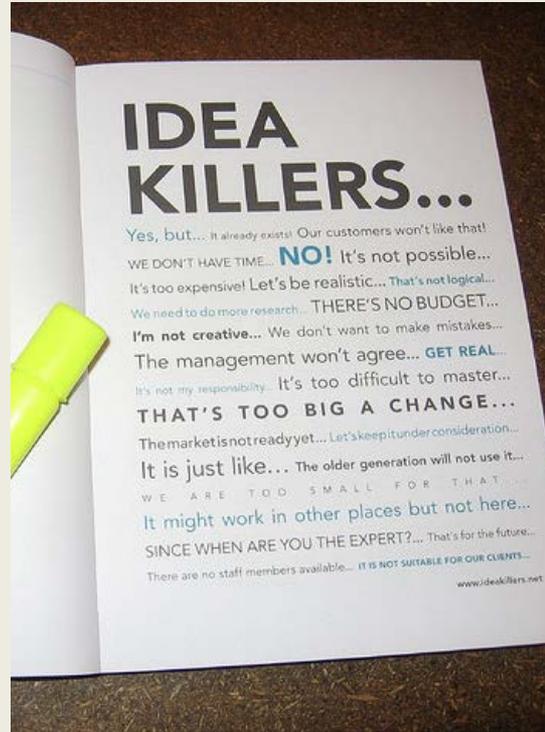
2. Personal Rationale,
Passion, Core Interest



3. Personal Viewpoint



4. Preferred Working Method



5. Personal Standards

Stage 3 Assessment:

Criteria:

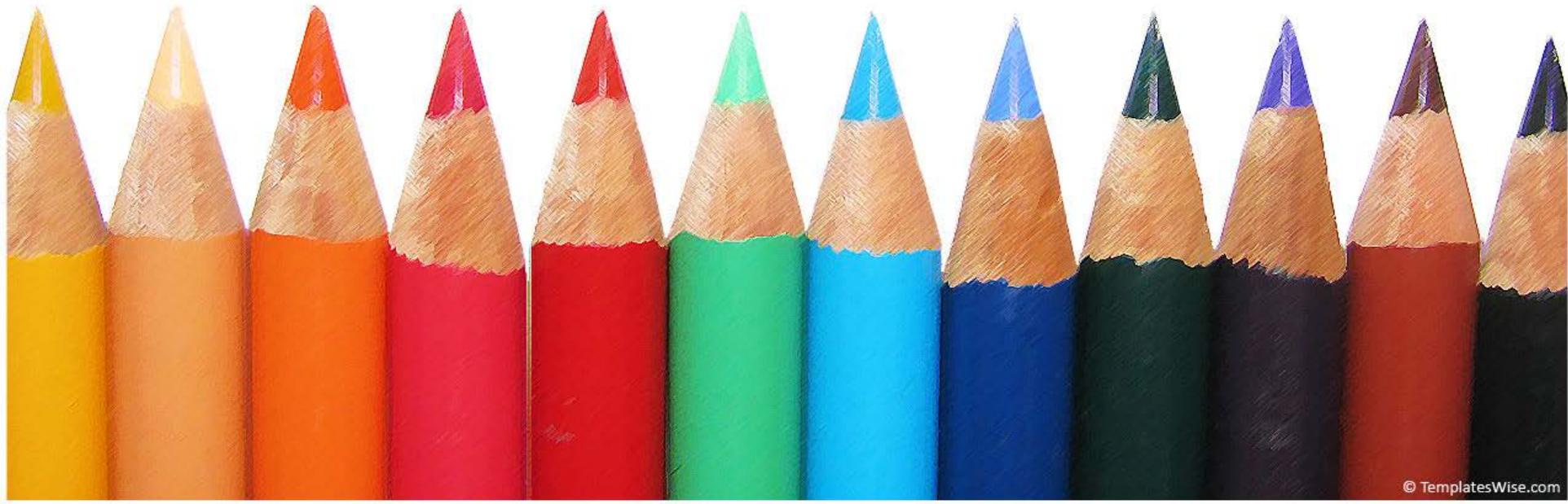




Rafael, Grady High School



Our model shows us where to aim so that student creativity increases.





It provides instructional objectives so teachers can help students generate open-ended ideas.



It points mindsets to the unknown, intangible, and unpredictable—and provides a rational, educationally viable means of discussing them.

Synthesizer vs. Creator

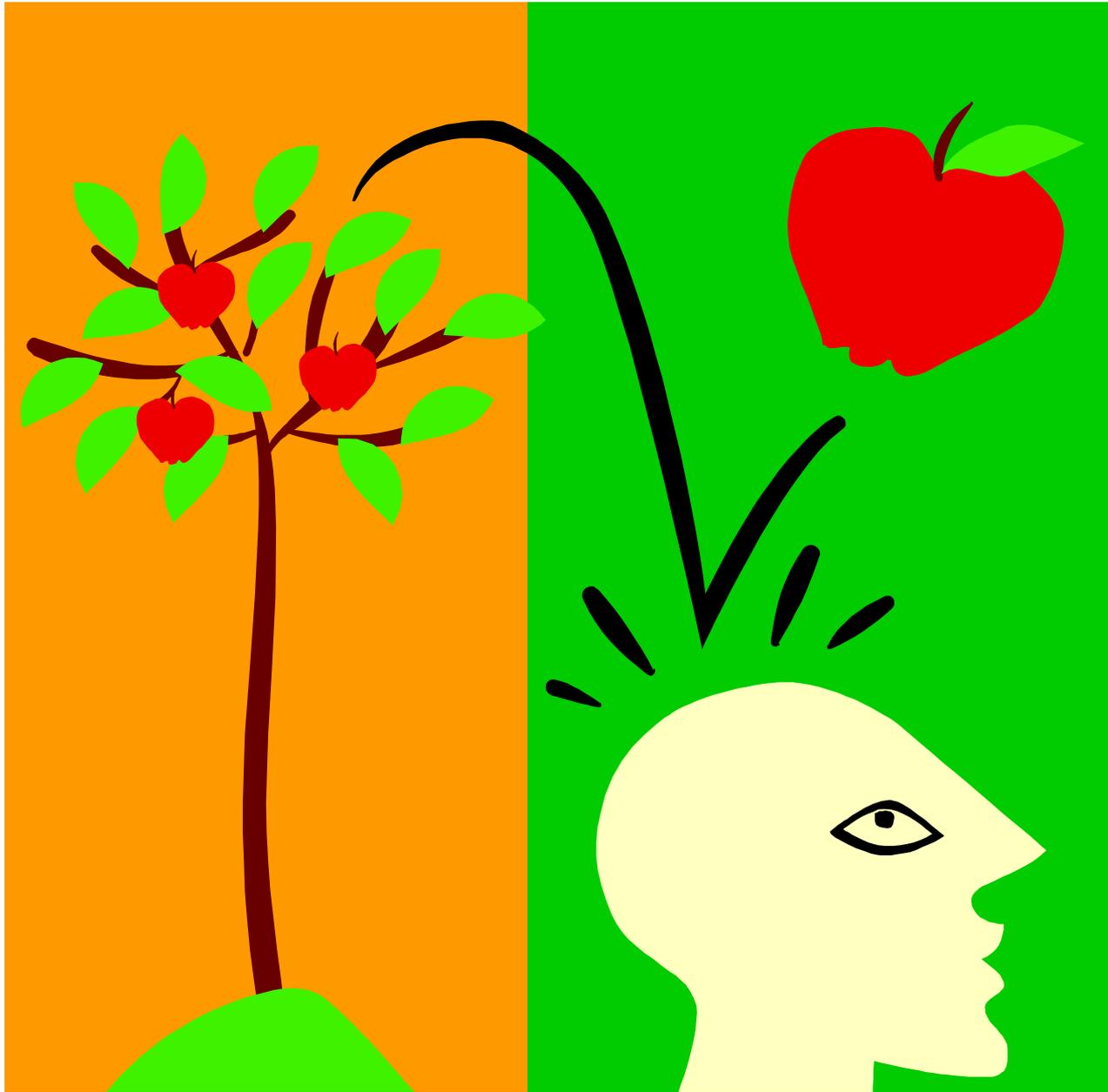
“The synthesizer’s goal is to place what has already been established in as useful and illuminating a form as possible. The creator’s goal, on the other hand, is to extend knowledge, to ruffle the contours of a genre, to guide a set of practices along new and hitherto unanticipated directions.”

Howard Gardner, *Five Minds for the Future*, page 98



Xenophilia

Love of the Unknown
(George Herms Exhibit)



How to talk about the unknown in terms that parents and principals can understand...



Constants
Parameters
Variables



Parameters: What is the arena—what are the walls—within which we act or react?





Creativity and Structure

- Constants and parameters determined by one or more of the following:
 - Final product/end state
 - Procedures, processes or standards
 - Initial problem statement
- To what extent are these “open” ?



Open-ended = Constants, Parameters, Constraints not pre-determined

- Final product/end state predetermined
 - Problem statement or process could be “open”
- Predetermined procedures, processes or standards
 - End state or problem statement could be “open”
- Initial problem statement predetermined
 - Process or end state could be “open”



The objectives empower students to reframe experience so that they reconsider what they know and do from many angles.



shocked



delighted

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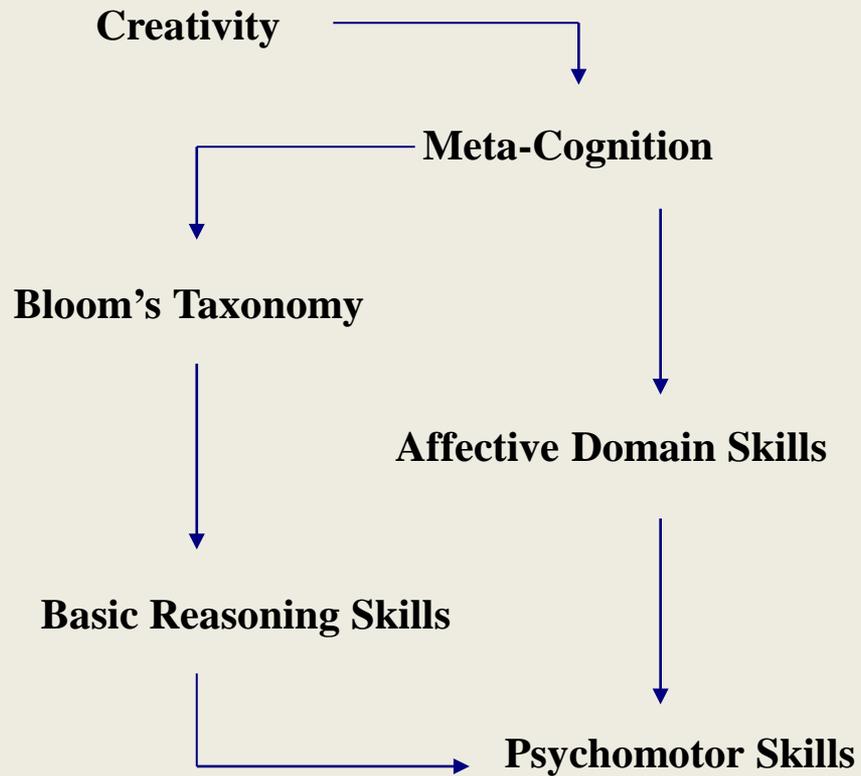


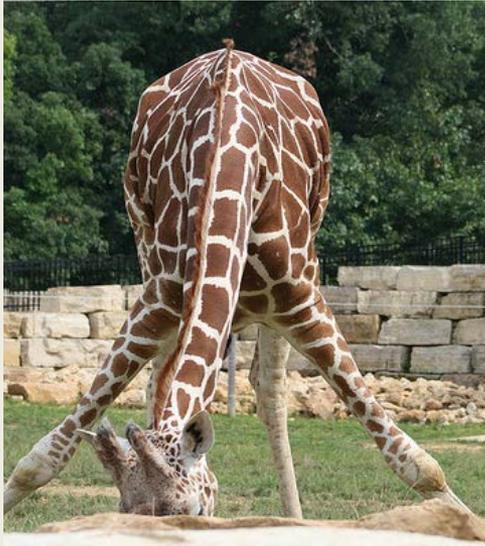


It provides objectives that encourage fun, open-ended inquiry, and an iterative mindset.



It shows how creativity is an executive-level cognitive process—not just a whacky way of producing zany ideas





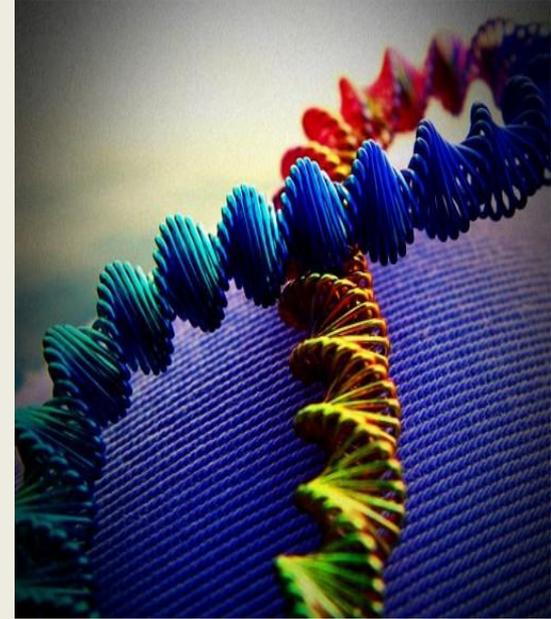
It takes the mental flexibility of Stage 1 into new, alternate ways of reasoning about systems of skill, value, and logic (Stage 2).

The model identifies instructional objectives for developing a creative stance.





It encourages reflection and perspicacity.



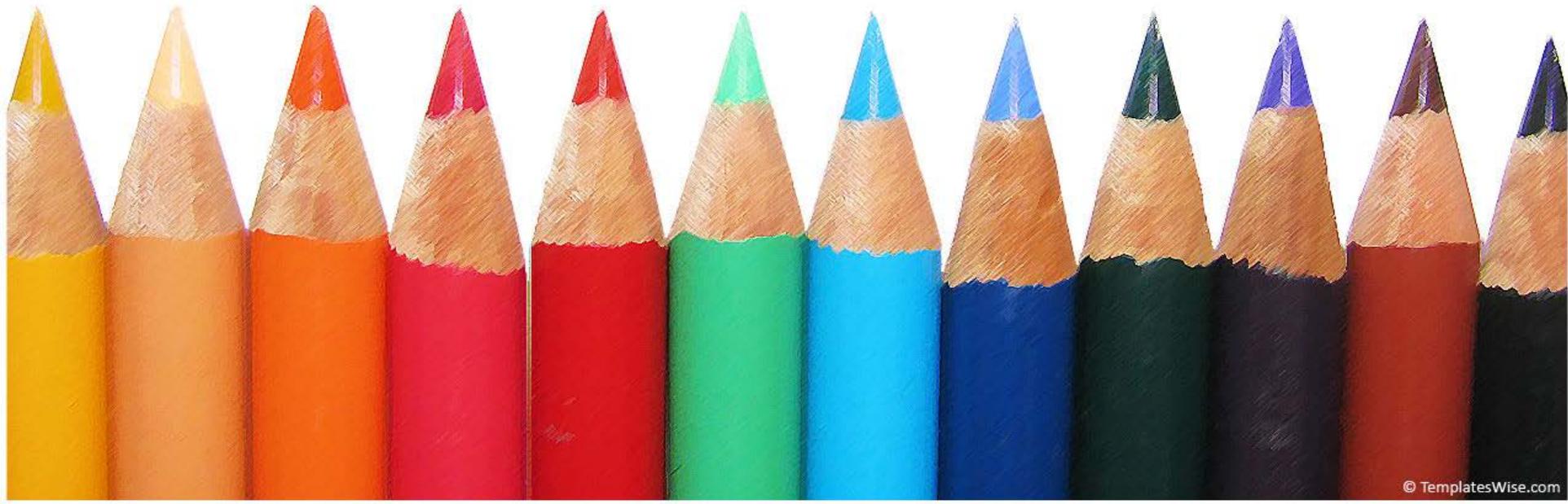
It shows how the feeling of rigor, coherence, and consistency we get from sustained artistic effort guides us as we chart unknown territory and start to form our own creative DNA.



Stage 3: Creation within stipulated boundaries based on a creative stance.



Our model tells us how we'll know if students are successfully developing a creative mindset.



So easy a wookiee can do it.



It takes a “can-do” instead of a “can’t do” attitude towards assessment.

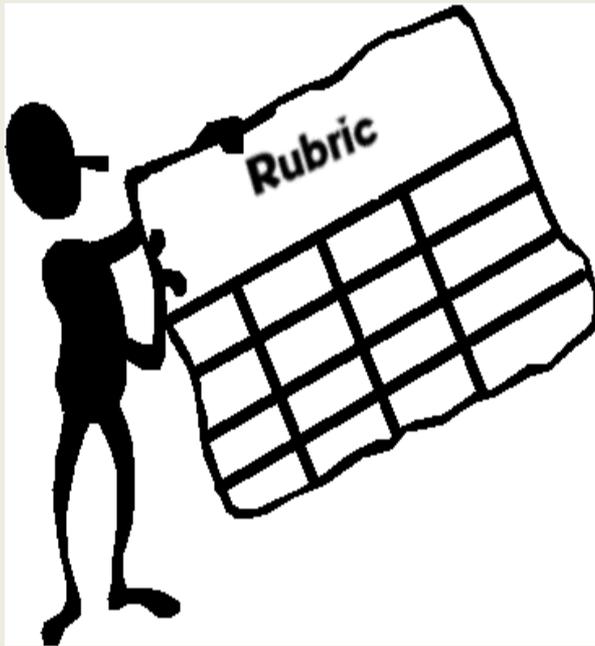


Qualitative assessment
is hard—but do-able.

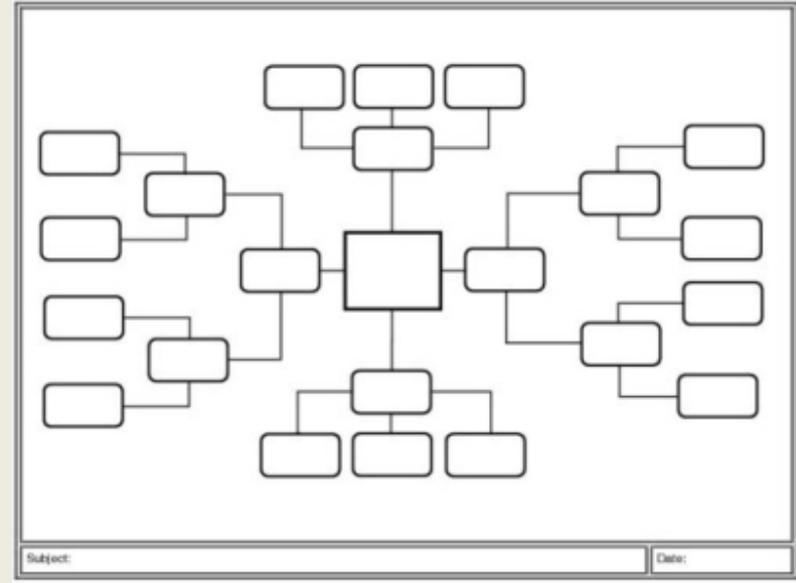


The model enables us to reject the self-fulfilling prophecy that productive, authentic assessment can't be done.

We start with local standards and exemplars.



Model-based rubrics diagnose where students are and point to the next step on their creative path.



It provides the conceptual tools for constructing assessments.



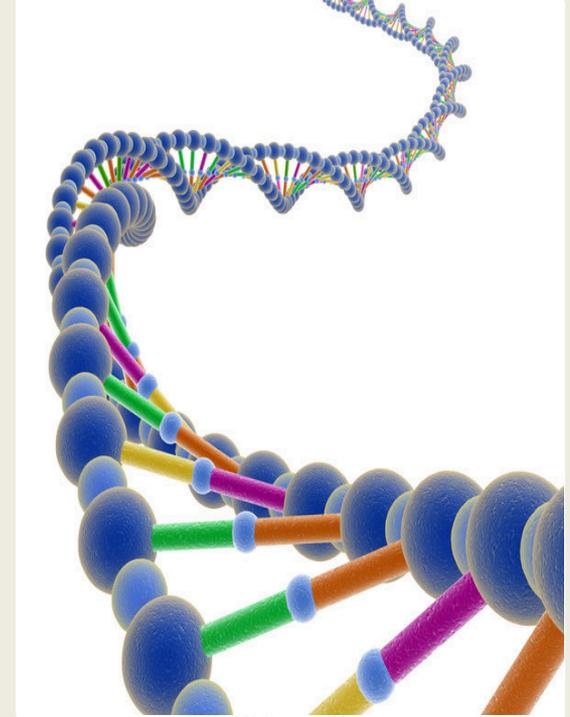
Stage 1 Assessment

Did you Risk and Reframe?



Stage 2 Assessment

Did you question, intersect, and connect? Did you explore and exploit points of tension?



Stage 3 Assessment

How does this come out of your own creative stance—your personal, creative DNA?



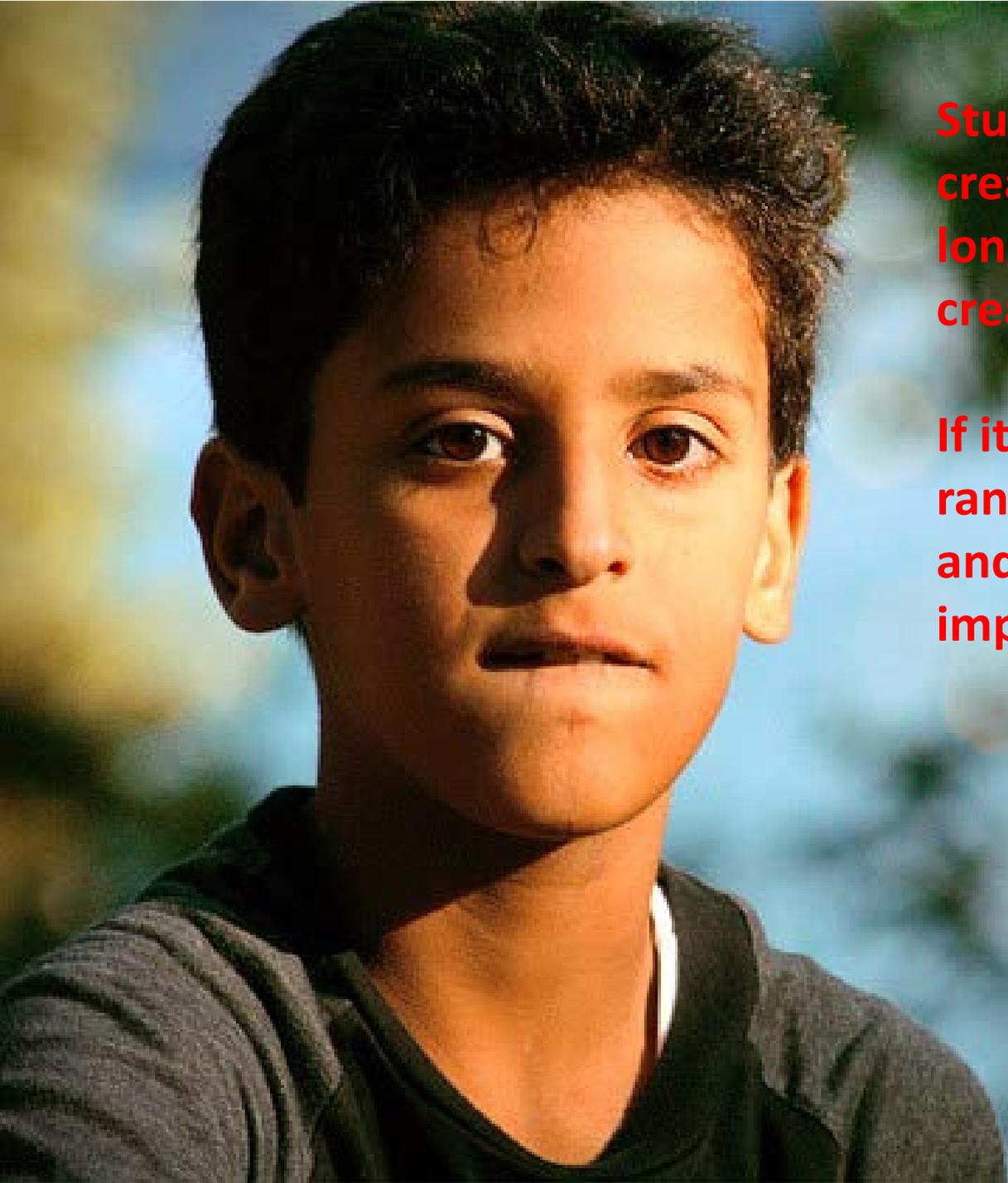
It provides a framework for justifying our assessments.











Students need a long term creative agenda to see the long term benefits of creativity training.

If it is sporadic and random, they look back and see it as frivolous and impractical.

Capture Queen



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<http://igniteart.weebly.com/naea-2011.html>

Raymond E. Veon