

Helping Your Students Master Their Creativity

From accidental to intentional
creativity through deliberate practice

XXV

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Locating Creativity in 2025

Do/Discuss



Entrepreneurship Frameworks

What entrepreneurs think about:

The **process** of **creating** **value** by bringing
together a **unique combination** of **resources** to
pursue an **opportunity**.

Morris et al, 2002

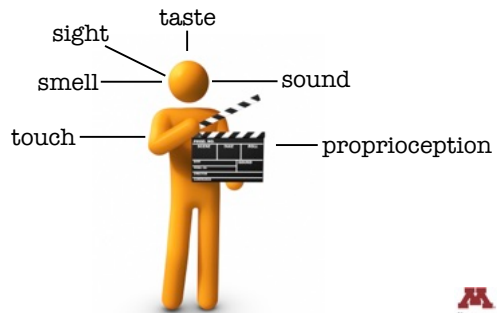


Why create?



Driven to Discover®

Because everyone can!



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Why create?



Defining PLAY

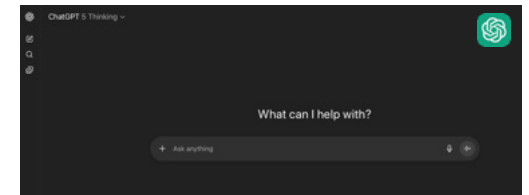
"Play is a form of combinatorial experimentation without regard to context."

Jeffrey Stamp

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The Creativity Challenge Then & Now

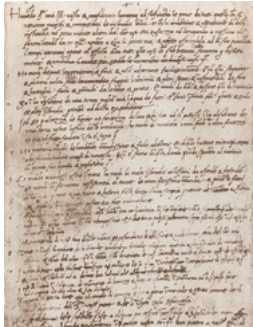
Assignment: In this class you need an idea for a new venture!



In a world of infinite information...
In a world of one-click creativity...



Being "Creative" is a new human paradigm



Leonardo Da Vinci's Resume to Ludovico il Moro, Duke of Milan 1482 (age 30)

- The word **creative** as a term to describe a human ability didn't appear until 1875
- Leonardo da Vinci was never called or identified himself as a "creative"
- Before 1950, there were zero books, research, or essays on creativity
- 1960's brought on the creativity generation



The Creativity Paradigm

Is creativity a domain specific activity
OR
a general thinking activity?



List as many uses as you
can think of for a brick

Torrance Test of Creativity, 1966



Creativity as a Practice



1960 - Dupont - Think Up (Brainstorming) 2-3 weeks

Creative thinking occurs when a problem solver invents a novel solution to a problem. - J.P. Guilford (1950)



1999 - IDEO - Human Centered Design 2-3 days

Creativity is the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context. - J.Plucker (2001)



2023 - Student - AI-generated Ideas 2-3 minutes

Creativity is all about the flow of ideas, using your imagination and trying new things. - Penn State Career Center

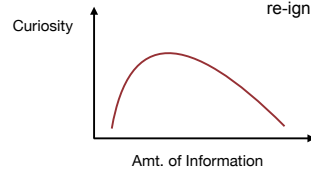
Creativity is an idea probability game - superior outcomes

~~ideation~~
problemation
asking questions
?

dramatic impact in the learning bandwidth available for many students

Curiosity

re-igniting the essential capacity for curiosity

Information Gap Theory
(Loewenstein, 1994)

dramatic impact in the learning bandwidth available for many students

Curiosity

a desire to know, typified by such traits and activities as inquisitiveness, the exploration of novelty, and questioning

Creativity

an exploratory endeavor involving the generation of original, useful, and valuable ideas, processes, products. (novel + utility)

Intention
Self-Efficacy

re-igniting the essential capacity for curiosity

*"I feel frustrated if I can't figure out the solution to a problem, so I work even harder to solve it."**"The smallest doubt can stop me from seeking out new experiences."**"Creating an adventure as I go is much more appealing than a planned adventure."*

seek out new sensations or experiences

Perceptual
Curiosity

be comfortable and curious in dealing with uncertainty, ambiguous situations, and unresolved problems

Curiosity
for
Ambiguity*"When talking to someone, I try to discover interesting details about them."*

curiosity about social interactions, relationships, and dynamics among individuals or groups

Social
Curiosity*"I view challenging situations as an opportunity to grow and learn."*

be motivated to acquire new knowledge and a willingness to invest effort in seeking information and understanding complex concepts

Epistemic
CuriosityEmpathic
Curiosity

understand and appreciate others' feelings, perspectives, and experiences

"When other people are having a conversation, I like to find out what it's about."

CURIO: Assess Your Curiosity! (5DCR)

By Jeffrey Stamp

See your curiosity profile across the five dimensions of curiosity and learn how to build and exercise your curiosity powers.

Take the curiosity
assessment!What is curiosity
and how do I
experience it...

Test my curiosity!



Curiosity leads to questions that lead to ideas...
now what?



#1

What do you see?

#2

What does it do?

#3

How is it like...

What do you see?



What do you see?



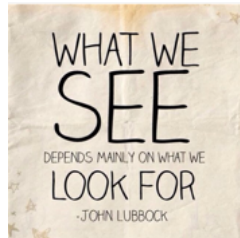
It depends.

Dependent on context driven by perception.



perspective

Awareness needs priming



What gets in the way of
your curiosity thinking?



Your memory



be comfortable and curious in dealing with uncertainty,
ambiguous situations, and unresolved problems

What do you see?



This isn't a puzzle

Is this glass:

- A. half-full
- B. half-empty
- C. 100% full

This is a data problem

Test Your Data



What does ChatGPT see?

I want to ask you a quiz question, do you want to play?

Absolutely, I'm ready for your quiz question! What do you have for me?



What do you see in this picture?

ChatGPT vs. Stamp

In the picture, there's a glass that appears to be half filled with water. Is there a specific question or topic you're thinking about in relation to this image?

Yes. Answer the following question: Is the glass in this picture A.) half full or B.) half empty?

The glass in the picture can be described as both A.) half full and B.) half empty, depending on the perspective one chooses to adopt. This often serves as a classic illustration of optimism (seeing the glass as half full) versus pessimism (seeing the glass as half empty). How would you describe it?

I see it as 100% full. Do you?

That's an interesting perspective! If you consider the glass as being 100% full—half with water and half with air—that's a thoughtful way to look at it, emphasizing that everything occupies space with some substance, even if it's invisible like air. It's a scientific and optimistic viewpoint, seeing full potential in every situation. What led you to see it this way?

I'm a scientist and I have an abundance of human curiosity.

Catalyzing Curiosity Collisions

Aha Moment

a point in time (experience) when one has a sudden insight or realization.



What do you see?

Memory Expectation - a chair
an office chair

Cognitive Dissonance - a 1-legged chair



What do you see?
What is this?

Chair Elements

- Seat • 4 Legs
- Arms • Back
- Wheels

Frame 1



Fixed vs Growth Mindset

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What do you see?

Memory Expectation - a 2-legged chair



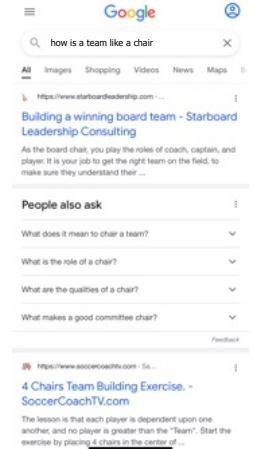
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Curiosity Exercises

(Ill-Defined Problem Space)

Questions you can't Google

How is a team like this chair?



Driven to Discover®

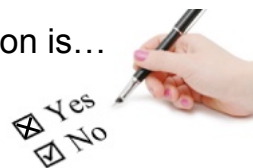
Feeding Curiosity

The answer to any question is...

It depends

**Dependent on context
driven by perception.**

Fueled by curiosity



Driven to Discover®



What do you see?



Stimulus \approx narrative data



What do you see?

Prompt: I have a picture I want to share with you. List 20 things that you see in this image.

Here's a detailed breakdown of 20 things visible in this image:



1. A hand gripping the body of an airplane model.
2. The airplane appears to be a toy glider or model plane.
3. The airplane is yellow with red detailing on its tail fin.
4. The hand is holding the airplane at the bottom, near the tail section.
5. The wings of the airplane are wide and extend towards the camera.
6. The sky in the background is a vivid, cloudless blue.
7. The photograph has a slight grainy or vintage effect, likely due to the image processing or medium.
8. The sunlight is bright, casting shadows on the hand and airplane.
9. The nose of the airplane is pointed, indicating it's likely a glider type.
10. The wings have a rectangular shape with sharp edges.
11. The tail section of the airplane has a red stripe or design.
12. The fingers of the hand seem to be well-defined, as they are gripping firmly.
13. The shadows of the airplane's parts are cast onto its wings, particularly noticeable due to the sunlight.
14. The overall image seems to convey a sense of flight or freedom.
15. The horizon or lower part of the image suggests some distant landscape, though it is not clearly visible.
16. The image has a minimalistic composition, focusing mainly on the hand and the airplane.
17. The plane's cockpit appears to be small and simple, likely non-functional in this model.
18. The contrast between the blue sky and the yellow plane makes both elements stand out.
19. The position of the airplane suggests that the person holding it is about to launch it.
20. There is a white rectangular box or area in the bottom right corner of the image, possibly for adding text or a title.

What do you see?

Prompt: Let your mind's eye be creative, list 20 more things that you see in this image from any perspective you choose.



Let's dive into a more creative interpretation, using imaginative perspectives to add depth and meaning to what's seen:

1. A sense of childhood nostalgia – The simplicity of a hand-held toy airplane evokes memories of carefree summer days.
2. The anticipation of flight – The slight upward tilt of the plane suggests the excitement before the launch, a moment suspended in time.
3. A metaphor for dreams taking off – The plane, small in a vast blue sky, could symbolize ambitions ready to soar.
4. The warm, golden glow of the sun – The way the light hits the plane and hand gives a feeling of warmth, like the late afternoon sun.
5. The hand of creativity – The act of holding and launching the plane symbolizes someone shaping or directing their ideas into the world.
6. A representation of human ingenuity – Even in its simplicity, the plane reflects mankind's desire to replicate nature, to defy gravity and touch the sky.
7. The blue sky as infinite possibility – The vastness of the sky could symbolize the endless opportunities and unknowns that lie ahead.
8. A gentle breeze – Though unseen, one could imagine a light breeze, perfect for gliding a paper or wooden plane on a long, effortless flight.
9. A snapshot of freedom – The scene captures a brief moment that feels liberated, with the open sky and the plane as a vessel of freedom.
10. The contrast between nature and invention – The natural expanse of the sky meets the human-made toy plane, showing the intersection of the organic and the artificial.
11. The feeling of curiosity and wonder – Like a child holding the plane, the image stirs curiosity about where the plane will go, much like life's uncertainties.
12. The simplicity of joy – There's no complexity, just pure, simple joy found in a playful interaction with a toy.
13. A rite of passage – The plane may represent the symbolic journey of growing up, launching from the safe ground into the unknown skies.
14. The fleeting nature of moments – The frozen moment suggests how quickly time can pass, much like the plane that will soon leave the hand.
15. Hands of experience – The hand could represent the hand of an adult, reliving a cherished memory from their youth.
16. Connection to the wind – Though not visible, one can imagine the feeling of air on the skin, a breeze that will carry the plane further.
17. The simplicity of invention – The toy itself is a marvel in its simplicity, designed to mimic flight without modern complexity.
18. A lesson in aerodynamics – The angle of the plane and hand implies a deeper understanding of how flight works, even in this toy form.
19. The fragility of ambitions – Just as a toy plane can crash or glide, the image could symbolize the delicate balance of dreams either soaring or falling.
20. A timeless metaphor for exploration – The plane points forward, hinting at the human desire to explore uncharted territories.

Stimulus-Response Method

Curiosity Lab: Perceptual Association Step-by-Step

- Step 1: Perceive** Ask: "What do you see (sense)?" On your sticky notes, write down as many observations, feelings, and thoughts as you can—one thought per note. Don't filter anything. Capture both the literal (what you see) and the abstract (what you feel or what it reminds you of).
- Step 2: Cluster** Ask: "What are possible themes here?" Group sticky notes into related themes or clusters. You don't need to name the clusters yet, just group the notes that feel like they belong together. When clustered, interpret themes by analogy or association. There are no right or wrong themes. They can also be literal or perceptual. Naming a cluster with a theme is an essential sense-giving step that produces memes.
- Step 3: Bridge** Our goal is to create (insert product/service goal here). Select one cluster from the board. Now, use curiosity to connect those concepts to our product. Ask "How might...?" or "What if...?" questions.
- Step 4: Respond** Pitch your new concept out loud. Tell us the name, a marketing tag line, its core function, key ingredients, and target audience, making sure to explain how your ideas were sparked by the airplane image.

Stimulus-Response Method

Human Curiosity Prompt Engineering

Step 3: Bridge Example Creative Objective: A healthy energy drink

"If our beverage was inspired by **[Cluster Theme]**, what would its primary function be?"

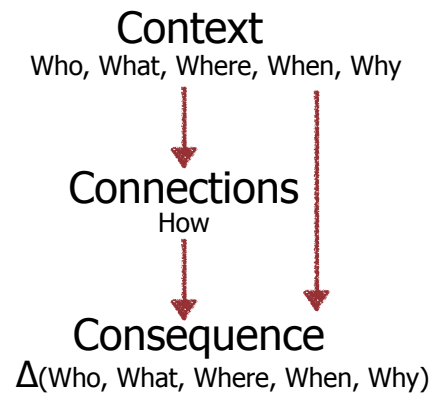
"What ingredients would make you *feel* **[Cluster Theme]**?"

"Who is the target customer that deeply desires the feeling of **[Cluster Theme]**?"

"What would we name a beverage that delivers the benefit of **[Cluster Theme]**?"

"How would the packaging or branding reflect **[Cluster Theme]**?"

The Keys to Asking Bridge Questions



Stimulus-Response Method

Curiosity Lab: Perceptual Association

Creative Target: A new beverage



?



Stimulus-Response Method

Themes:

- Uplift
- Fear of the Crash
- Smooth Landing
- Simplicity
- Launch



Ascend

Your Daily Mental Liftoff

Tired of the midday slump? Ascend is the natural nootropic beverage crafted for clarity and sustained focus, not jitters. Our "Clear Sky" Blueberry & Mint drink, with Lion's Mane and L-Theanine, provides a smooth, upward mental trajectory, designed for creative professionals and ambitious minds. Experience clean, all-natural energy in every sleek, sky-blue bottle. Elevate your day, naturally.

Packaging: Clear glass bottle, minimalist label with a brain-and-wings logo, gradient blue reflecting a clear sky.

Pricing: \$3.99 per 12oz bottle.

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Concepts Created with the Stimulus-Response Method



Bovi-Vet is a mobile app designed to meet cattle veterinary needs, enabling farmers to treat their cattle without needing a veterinarian's visit, while still having access to veterinary advice from anywhere in the U.S.

The Bovi-Vet smartphone app offers access to treatment protocols for common cattle illnesses, a 24/7 chat function with licensed veterinary staff, and an in-app storefront for purchasing medications, vaccinations, and farm supplies.

Haley Beukema, F'2023



The Pollinator Pod is a sustainable bamboo-based pollinator hotel designed to shelter and encourage native pollinator bee species. It is designed to attract native species such as Orchard Mason and Leaf-cutter bees to your garden or yard. Each pod also comes with a packet of native flower seeds to grow nearby, enhancing biodiversity and attracting native bees.

Empowering gardeners to improve their biodiversity, this product will grab consumer interest by allowing them to add sustainability to their gardening practices.

Sam Spaulding S'2024



Driven to Discover®

Concepts Created with the Stimulus-Response Method



Crater's Custom Baits is an online bait manufacturer that sells personalized fishing lures. We give anglers the option to create their own customized fishing lures through our website. All you have to do is answer a few simple questions, and based on your preferences, we recommend certain variations of fishing lures to fit the way you fish. With Crater's Custom Baits, you won't have to buy generic lures that all look and act the same; instead, buy a lure that is handcrafted to your exact specifications.

Alec Olson S'2022



The Mealtime Munchies is 100% vegan (contains no animal products) dog food alternative offered in a monthly or biweekly subscription box format, providing dog owners, especially those with a busy schedule, a sustainable alternative to dog food that is both convenient and nutritional. This product is also catered to dog owners who are vegan and interested in choosing a similar diet for their companion. By making the product 100% vegan, the team at Petticious works towards addressing the headache of dog parents about choosing the proper diet for their dogs, as well as connecting the issue of sustainability in the pet food industry.

Julie Van S'2024



Driven to Discover®

Concepts Created with the Stimulus-Response Method



LifeSaverLink addresses the critical need for swift and informed first-response care during medical emergencies for both humans and pets. Our solution involves QR code technology embedded in emergency alert jewelry, providing instant access to comprehensive medical profiles, and a 24/7 phone line ready to help medical personnel and call emergency contacts for customers in a crisis.

Veronica Nowakowski F'2023



Babe Beer is a bold, health-conscious beer tailored to women who want to embrace their social and wellness goals simultaneously. It contains only 80 calories, 2.5 grams of carbs, and 4% ABV, ensuring every sip is as enjoyable as it is mindful. Served in sleek 12-ounce cans, Babe Beer offers a light yet flavorful option for those who want to enjoy social gatherings without compromising their wellness goals. The lineup starts with three irresistible flavors: Natural Raspberry (flagship), Citrus (bright and refreshing), and Mixed Berries (a bold medley).

Natalie Beckendorf F'2024



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What do you see?



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What do you see?



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What do you see?

ChatGPT vs. Stamp “Surfer catching the wave tube.”



Driven to Discover®

“Surfer catching the wave tube.”

ChatGPT vs. Stamp



Driven to Discover®

CURIO: Curiosity Understanding and Reflective Improvement Orientation



CURIO: Assess Your Curiosity! (5DCR)

By Jeffrey Stamp &

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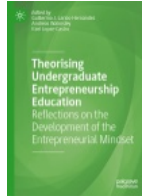
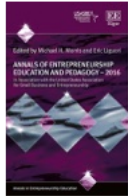


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Resources

stamp013@umn.edu

boldthinking.com/creativeclassroom



The Customer Experience Canvas

[Download Worksheet](#)

[Watch Video](#)



"Word Hack"

[Watch Video](#)



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Stay Curious!



"The key to being creative isn't about how much you know, it's about how much you're willing to forget in order to make a new connection."
- Jeffrey Stangor

stamp013@umn.edu

