

**Designing a toolbox to improve creative output:**

**A guide for cultivating critical, creative, and conceptual thinking skills in an increasingly distracted society**

**by CARA TUTTLE**

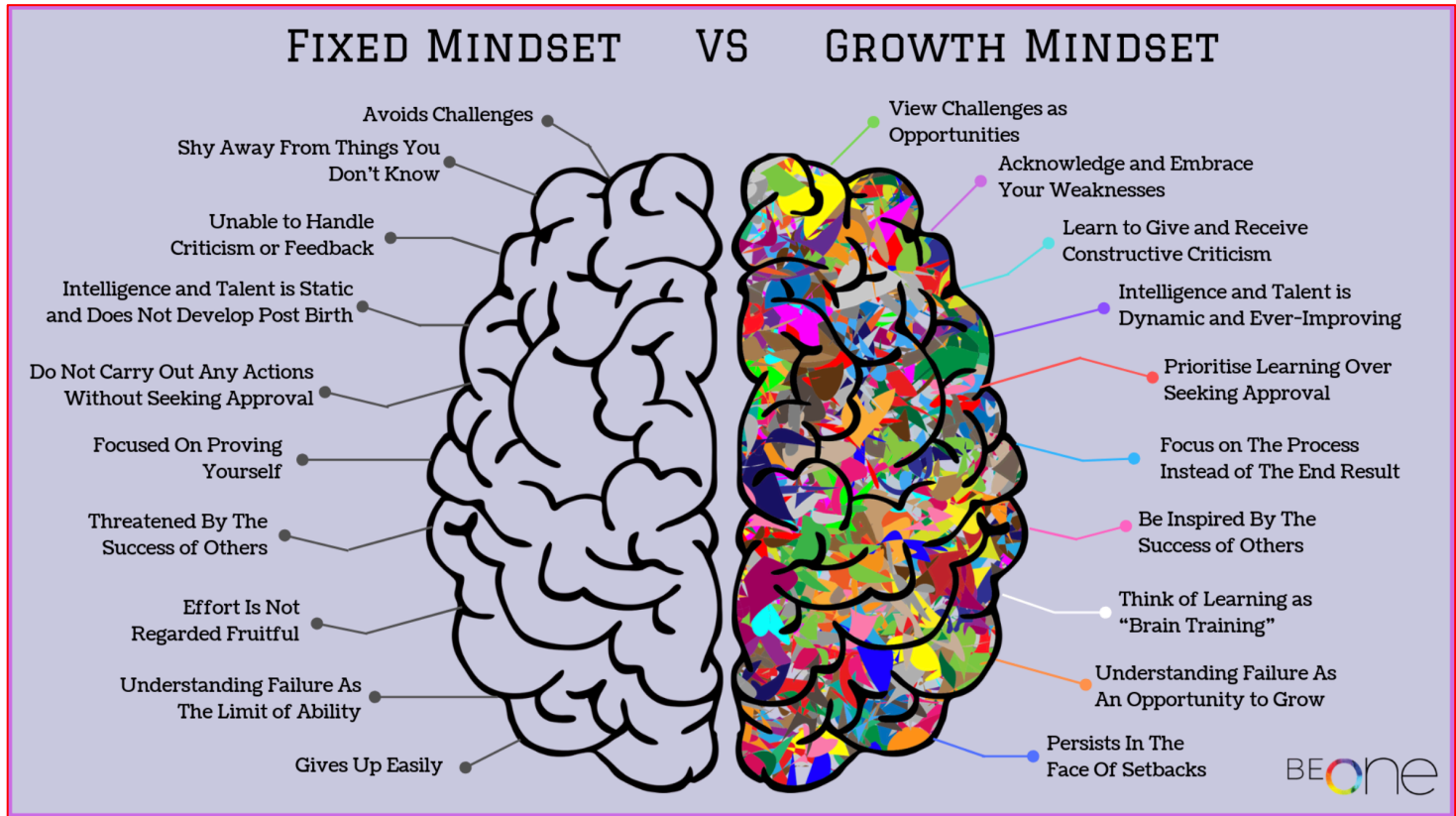
# DISTRACTED FROM ...

- Thinking/reflection
- Socializing
- Sleeping
- Boredom
- Problem solving
- Opportunities
- Acknowledgment
- Appreciation



# GROWTH MINDSET

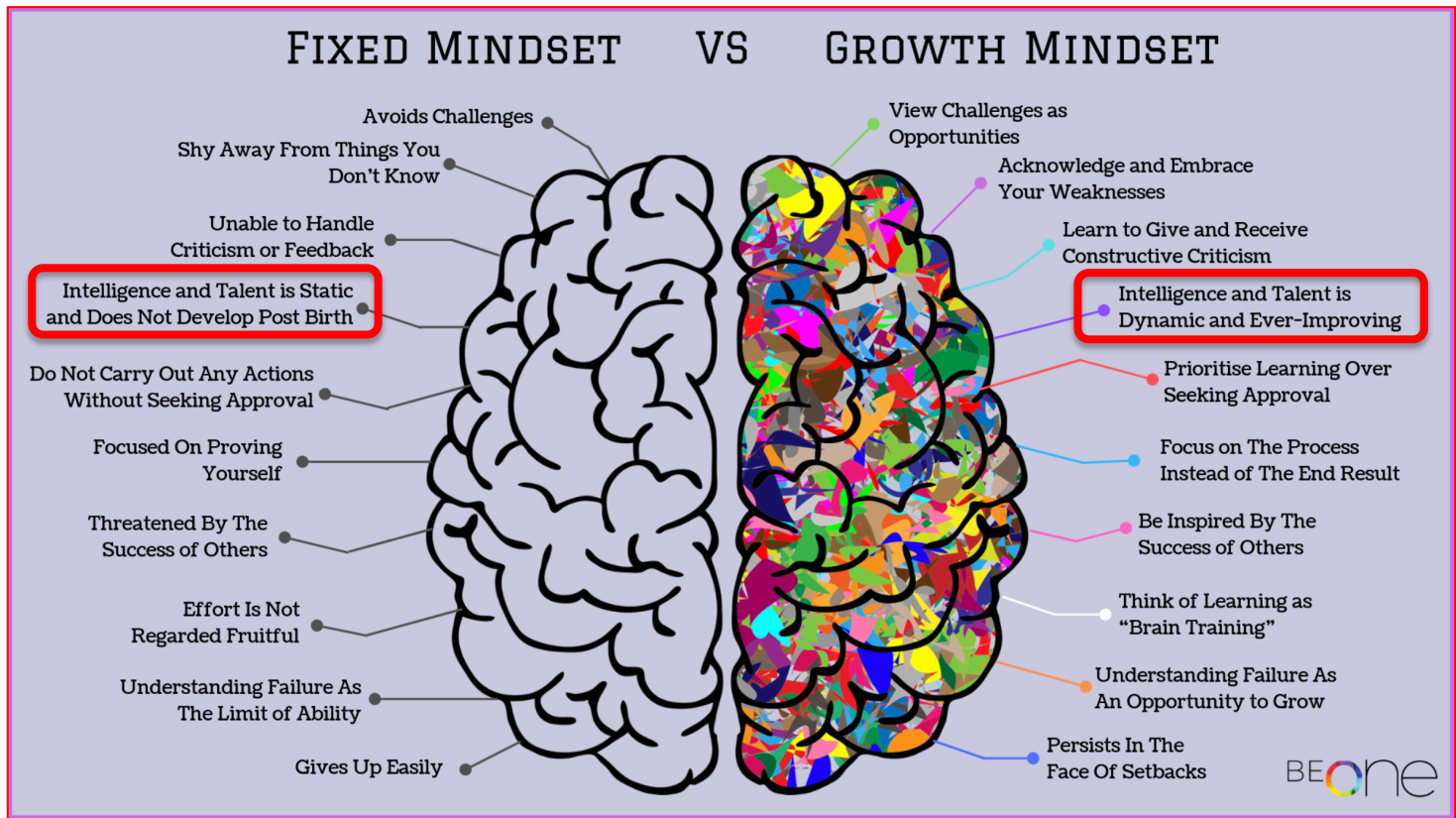
“In a fixed mindset students believe their basic abilities, their intelligence, their talents, are just fixed traits. They have a certain amount and that’s that. In a growth mindset students understand that their talents and abilities can be developed through effort, good teaching and persistence. They believe everyone can get smarter if they work at it.” - *Psychologist Carol Dweck*



Source: <https://www.thebeone.com/post/fixe-vs-growth-mindset>

# GROWTH MINDSET

Growth mindset can be applied to **creative output**.  
Like general intelligence, creative output isn't fixed.



Source: <https://www.thebeone.com/post/fixe-vs-growth-mindset>



**3 components that feed creative output . .**

# T H E 3 C S



- **Conceptual Thinking** - the ability to form new ideas by making connections or associations between seemingly disparate concepts .



- **Creative Thinking** - “refers to how people approach problems and solutions -- their capacity to put existing ideas together in new combinations” (Amabile, 1998).



- **Critical Thinking** – “reasonable reflective thinking focused on deciding what to believe or do” (Davies and Barnett, 2015).

# 3CS EQUATION

An equation for fueling more creative output in students and creative professionals.

*The 3Cs Equation:*

$$\begin{array}{r} \text{Critical Thinking} \\ + \text{Creative Thinking} \\ + \text{Conceptual Thinking} \\ \hline = \text{Creative Output} \end{array}$$

# CURATING TOOLS

**Effective tools for developing creative output can demonstrate to students that growth mindset works.**

“High creative self-efficacy and growth mindset, rather than fixed mindset, appear to be linked to desirable creative outcomes” (Intasao and Hao, 2018).



# CURATING TOOLS

**Tool #1**

**Tool #2**

**Tool #3**

**Tool #4**

**Tool #5**

**Tool #6**



# CURATING TOOLS

**Tool #1** – Mind Wandering

**Tool #2**

**Tool #3**

**Tool #4**

**Tool #5**

**Tool #6**



# CURATING TOOLS

**Tool #1** – Mind Wandering

**Tool #2** – SCAMPER

**Tool #3**

**Tool #4**

**Tool #5**

**Tool #6**



# CURATING TOOLS

**Tool #1** – Mind Wandering

**Tool #2** – SCAMPER

**Tool #3** – Plus/Delta Feedback

**Tool #4**

**Tool #5**

**Tool #6**

# CURATING TOOLS

**Tool #1** – Mind Wandering

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**Tool #4** – Metacognition

**Tool #5**

**Tool #6**

# CURATING TOOLS

**Tool #1** – Mind Wandering

**Tool #2** – SCAMPER

**Tool #3** – Plus/Delta Feedback

**Tool #4** – Metacognition

**Tool #5** – Conceptual Mind Mapping

**Tool #6**

# CURATING TOOLS

**Tool #1** – Mind Wandering

**Tool #2** – SCAMPER

**Tool #3** – Plus/Delta Feedback

**Tool #4** – Metacognition

**Tool #5** – Conceptual Mind Mapping

**Tool #6** – Visual Thinking Strategies (VTS)

## Mind wandering techniques for the classroom

*"[C]reativity is fostered by tasks that allow the mind to wander" (Kaplan, 2012).*



A selection of curated gadgets provided to MassArt students during a mind wandering exercise designed to promote creative output as part of a classroom activity. In 11 mind wandering studies conducted by Wilson, et al., many participants preferred to administer electric shocks to themselves instead of being left alone with their thoughts for 6-15 min. Most people seem to prefer doing something rather than nothing (Wilson et al., 2014).



## Mind wandering exercise - student survey responses

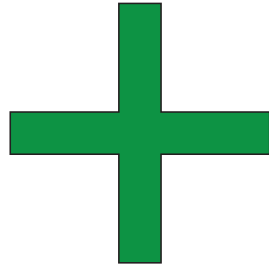
Question: Do you think the activity produced more creative results or helped with problem-solving?

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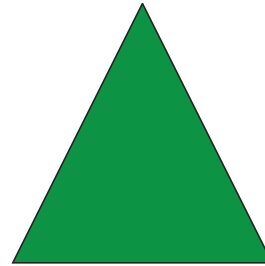
- *“I think it gave my mind space to think without feeling pressured to come up with ideas.”*
- *“Yes, it is because it’s kind of nice that I have 5 min to relax my brain to think what should I do next.”*
- *“The activity helped with problem solving by how I would implement putting the material onto dress form. The amount of stretch and pull I applied to the plushie toy helped me visualize it as being a trash bag as I continue to shape it.”*
- *“I’m not sure. I think weirdly enough the exercise gave my brain room to breathe.”*
- *“Yes because I stepped away from the piece and thought about the big picture instead of the details.”*

## Plus/delta feedback

*A feedback tool that collects ideas for future improvements*



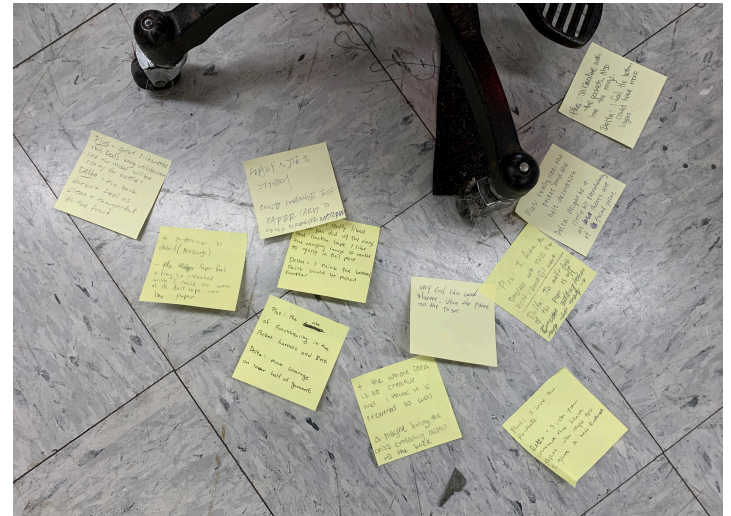
The **plus** identifies what is working well.



The **delta** identifies what might be improved to make something more successful.

# ADAPTING THE TOOLS

## Adapting plus/delta feedback for a studio critique



MassArt student work with plus/delta feedback generated by students. From left to right: Tyler Pongkham, Laiba Azhar, Rosa Lay, Dat Duong, Nina Wisch

## SCAMPER

-Alex Osborn and Bob Eberle

SCAMPER is a creative brainstorming tool used to create novel solutions to problems, ideas, existing designs, or products.

Substitute

Combine

Adapt

Modify

Put to other uses

Eliminate

Reverse

Inspired by SCAMPER, I set out to create a playful and accessible activity for students that generates new design ideas. I adapted the SCAMPER tool by combining it with...



# ADAPTING THE TOOLS

## RAD LIBS for DESIGNERS

- featuring the SCAMPER technique -

	NOUN (PARTS OF GARMENT OR BODY)	ADJECTIVE	RANDOM NOUN
1	shoulders	rounded	goat
2	waist	pointed	whiskers
3	chest	sloped	hair
4	hips	curvy	face
5	neckline	squared	cheese
6	cuffs	tall	candy
7	collar	tiny	hairbrush
8	sides	enormous	pig
9	armscyes	fluffy	dog
10	sleeves	smooth	eyelashes
11	belt	spiked	fan
12	buttons	vertical	gorilla
13	zipper	horizontal	vase
14	buckle	rough	bird
15	pockets	bumpy	insect
16	fly	open	swing
17	legs	invisible	sloth
18	calves	wide	tent
19	thighs	narrow	glacier
20	ankles	heavy	bannana
21	neck	light	rose
22	sleeves	reversed	cactus

The RAD LIBS word generator

### **Directions:**

Find the words that correspond to your numbers on this list.

Your 1<sup>st</sup> number corresponds with the noun column and your 2<sup>nd</sup> number corresponds with the adjective column.

# ADAPTING THE TOOLS

## RAD LIBS for DESIGNERS

- featuring the SCAMPER technique -

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## RAD LIBS for DESIGNERS

- featuring the SCAMPER technique -

Example 1: (C = combine, combine parts of the body/nouns with adjectives.)

Take the \_\_\_\_\_ and make it/them \_\_\_\_\_.

NOUN ADJECTIVE

Take the \_\_\_\_\_ and make it/them \_\_\_\_\_.

NOUN ADJECTIVE

Example 2: (S = substitute, substitute parts of the body or garment with random nouns.)

Substitute the \_\_\_\_\_ with a \_\_\_\_\_.

NOUN RANDOM NOUN\*

Substitute the \_\_\_\_\_ with a \_\_\_\_\_.

NOUN RANDOM NOUN\*

# ADAPTING THE TOOLS

## RAD LIBS for DESIGNERS

- featuring the SCAMPER technique -

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## RAD LIBS for DESIGNERS

- featuring the SCAMPER technique -

Example 1: (C = combine, combine parts of the body/nouns with adjectives.)

Take the shoulders and make it/them pointed.

NOUN

ADJECTIVE

(This could generate pointed sleeve caps on a garment.)

Take the neck and make it/them heavy.

NOUN

ADJECTIVE

(This could generate an oversized cable knit collar or cowl on a garment.)

Example 2: (S = substitute, substitute parts of the body or garment with random nouns.)

Substitute the hips with a goat.

NOUN

RANDOM NOUN\*

(This might generate the curved, spiraling shapes of a goat's horns at each hip, producing a sculptural garment with padding sewn into the hips to create an avant-garde silhouette.)

Substitute the sleeves with a gorilla.

NOUN

RANDOM NOUN\*

(This might generate elongated sleeves that are reminiscent of a gorilla's long arms. The sleeves might be scrunched up and secured at the wrists to create a heavily gathered effect or could be left long, hanging past the hands for a dramatic effect.)

\* If desired, the random nouns can be restricted to specific categories such as animals or plants, for example, to generate more controlled, cohesive, or themed results.



# ADAPTING THE TOOLS

**RAD LIBS for DESIGNERS**  
- featuring the SCAMPER technique -

	NOUN	ADJECTIVE	RANDOM NOUN
1			
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The RAD LIBS DIY word generator

Useful for many kinds of designers, artists, and other creative professionals. It can be adapted to different creative pursuits or even business ideas by replacing the body/garment parts with nouns related to industrial design, architecture, art, marketing, etc.

# CUSTOMIZED TOOLBOXES



Faculty can create a customized critical, creative, and conceptual thinking toolbox that can be adapted to their courses and pedagogy. Faculty can teach students how to create their own customized 3Cs toolbox.

# MANAGING DISTRACTIONS

Zoom Meeting ID: 408-718-1750

Turn on Original Sound

Total non-video participants: 13

00:00:49 Speaker View

Priscilla Bardol... Shari Clare, 3600... Simon Booth, 9... Jules Park, 9007 Alex Kim, 9005 Don Ly, 9008 Nash Moham...

Bark, 9006 Steven Crosby... Winston Twu, 900... Kacie Williams... Dan Roman, 9 Art Gilbreath, 9... Waylon Betz, 9...

Sadler, 9003 Shawn Lan, 900-1 Andy de Artola, 9... Raphael Villa... Joanna Jiang... Bernie Sertig Brett Lile, 900...

Brian Spragg... Andy Kim, 90 Bourne Ling, 90... Evan Eyerly... Alex Guerrero, 1... Brook Bajuh, 90... Eric Platt, 900-1...

David King, 9... Chris Gleave... Heather Goad... James Desmon... George Gubi... Jay Mohammed... Austin Stumpe...

Jeffrey Faulkner... James Woolidge... Janelle Spac... Dustin DeMayo... John Menik, 0... Katherine Sm... Katrina Tsai, 000

Mute Stop Video Invite Manage Participants Polls Share Screen Chat Record Closed Caption Breakout Rooms More

End Meeting



**Questions?**  
**Comments?**