

## How Creativity

1. *Review of Guilford's Components of Divergent Thinking: Fluency, Flexibility, Originality, Elaboration (FFOE)*
2. *Brainstorming*
3. *Practical Applications for FFOE and Brainstorming*

## Torrance Test of Creative Thinking

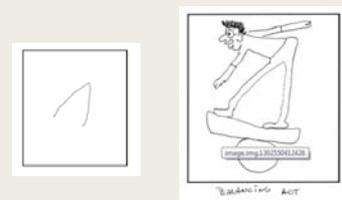
- Name all the uses for a brick:
  - A paperweight
  - A doorstep
  - A mock coffin at a Barbie funeral
  - To throw through a window
  - To use as a weapon
  - To hit my sister on the head with

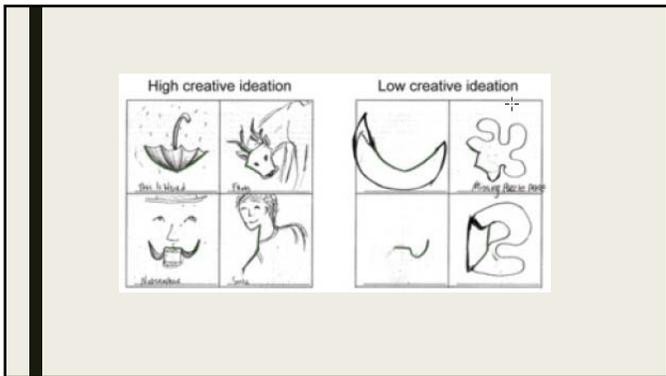
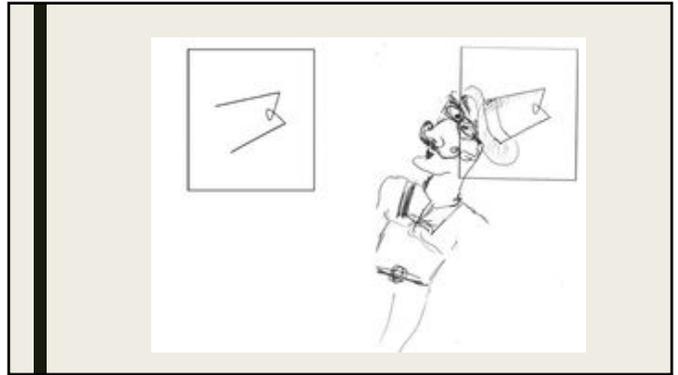
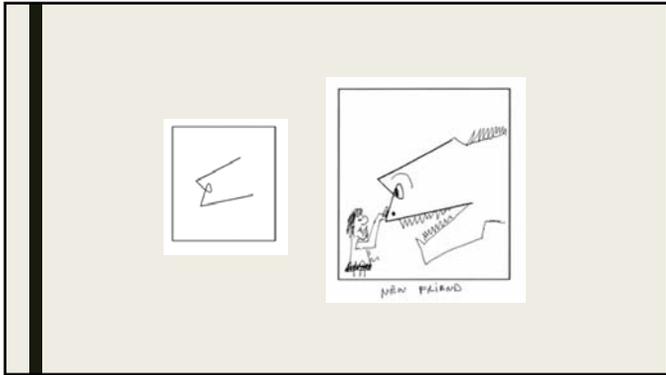
## FFOE

- **Fluency** – total number of uses found
- **Flexibility** – or different categories. In this case there are five different categories (weapon and hit sister are from the same general idea of weapon)
- **Originality** – how common is the use (vs. other people's responses). For brick: "doorstop" (common) vs. "A mock coffin at a Barbie funeral" (disturbingly original?)
- **Elaboration** – amount of detail (e.g. "a doorstep" vs. "a door stop to prevent a door slamming shut in a strong wind")

## Torrance Test of Creative Thinking

Complete the drawing:

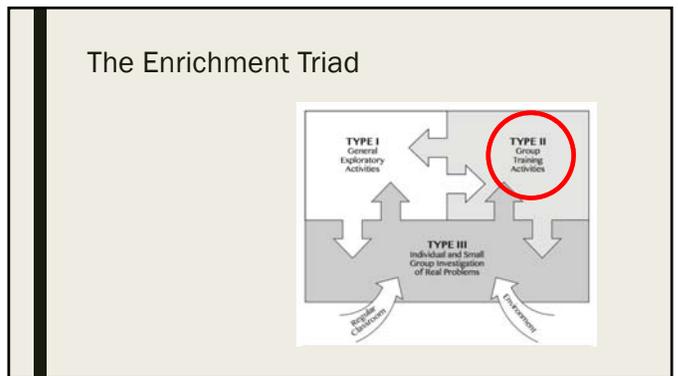
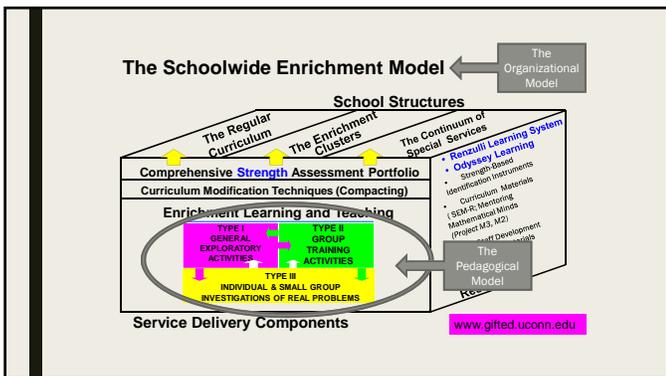




**Response to Prompt: Imagine History Had Taken a Different Path**

What if the ratification of the nineteenth amendment did not pass and women were never given the right to vote? What would life for women, like me, be like in the United States? For one thing, I probably would not be writing this essay. If women were not given their right to vote, I probably would stop going to school after this year and it would be unlikely that I would receive a college education. Without suffrage, my career options would be limited, if a career were a possibility at all. My accepted practices would be limited to staying home and taking care of the family. Rather than being equals, women would be subservient to men. I might not drive, I might not dress in the way in which I choose to, and I might not be able to live my life the way that I can in the twenty-first century.

If the Trojans had heeded Laocoon's advice and thrown Odysseus' wooden horse into the sea, they would have defeated the Greeks at Troy. Aeneas would then never have had reason to flee the city, and he would never have ventured to Italy to found Rome. Without Rome, neither the Roman Republic nor a Roman Empire would have existed. Concrete, the arch, plumbing, and the sauna might never have been invented. The modern implications of Rome never having existed are indeed drastic. Lacking even concrete floors, people would resort to sleeping in the mud, and, without plumbing or saunas, they would be perpetually filthy and, generally, quite chilly. France could not have built the base of the Eiffel Tower without arches, so tourists would be unable to purchase miniature collectible Towers in Parisian convenience stores.



## Type II Enrichment, the middle child



Happy Middle Child's Day! Oh, you didn't notice that it was Middle Child's Day? Don't worry, no one ever does.

MARCIA, MARCIA, MARCIA!

## The Type II Matrix

(Renzulli, 2001)

Cognitive Thinking Skills	Learning How-To Learn Skills
Creative Thinking Skills	Listening, Observing, & Perceiving
Creative Problem-Solving & Decision Making	Reading, Note-taking, & Outlining
Critical and Logical Thinking	Interviewing & Surveying
Using Advanced Research Skills & Reference Materials	Analyzing & Organizing Data
Preparing for Research & Investigative Projects	Character Development and Affective Process Skills
Library & Electronic Reference	Character Development
Finding & Using Community Resources	Interpersonal Skills
	Intrapersonal Skills
	Written, Oral, and Visual Communication Skills
	Written Communication Skills
	Oral Communication Skills
	Visual Communication Skills

## Brainstorming

Rules:

- Defer Judgment
  - No Complimenting
  - No Criticizing
- Avoid ownership of ideas
- Feel free to "hitchhike" on other ideas
- Wild ideas are encouraged

Think Time! No talking! No writing!

## Levels of Brainstorming

Level 1	Level 2
Name uses for...	What would happen if...
<ul style="list-style-type: none"> <li>a paper clip</li> <li>a tennis ball</li> <li>an ice cube</li> <li>a baseball cap</li> <li>a shoe</li> </ul>	<ul style="list-style-type: none"> <li>everyone looked exactly alike?</li> <li>no one ever smiled?</li> <li>there were no gravity in this room?</li> <li>no one told the truth?</li> <li>people never had to sleep?</li> </ul>

From:  
Marty Fligor, Brainstorming

## Points

- Fluency Points: 1 point for each word that you listed
- Flexibility Points: Make 4 or 5 Categories (miscellaneous is not an option). Place the words or generated solutions into the selected categories. Deduct 1 point for each word that does not fit.
- Originality: 1 point for each unique answer
- Elaboration: 1 point for each elaborate answer

## Example

- What would happen if people never had to sleep?
  - Mattress stores would go out of business
  - People would not need caffeine
  - People would not need pajamas
  - People would work 24/7
  - Electricity usage would increase
  - People would have more hobbies

CREATIVE STRENGTH IS ASSESSED  
IN TERMS OF NOVELTY, QUALITY,  
AND TASK APPROPRIATENESS;

Sternberg  
[http://www4.ncsu.edu/~jlnietfe/Creativity\\_&Critical\\_Thinking\\_Articles\\_files/Sternberg%20\(2012\).pdf](http://www4.ncsu.edu/~jlnietfe/Creativity_&Critical_Thinking_Articles_files/Sternberg%20(2012).pdf)

STORY TIME!

And now . . .

### Part 3: How Creativity

1. *Gullford's Components of Divergent Thinking: Fluency, Flexibility, Originality, Elaboration (FFOE)*
2. *Brainstorming*
3. *Practical Applications for FFOE and Brainstorming*

Teach  
Skills out  
of Context

Infuse  
Skills into  
Classroom  
Curriculum

Infuse  
Skills into  
Real- Life

### Cross-Curriculum Creativity Connection Fluency

Language Arts: List words to describe a rainy day

Math: Name ways to measure time

Social Studies: List things your family can do on the weekends

Science: List words that are related to space

### Cross-Curriculum Creativity Connection Flexibility

Language Arts: How many words can you list that would replace the word said?

Math: List things that can be measured

Science: List many terms related to space

Social Studies: List the many problems faced by a President of the United States

### Cross-Curriculum Creativity Connection Originality

Language Arts: Develop a new ending for a favorite story

Math: Pick your favorite number and describe it or illustrate it in an unusual way

Science: Describe a new animal. Decide the advantages or disadvantages to humans

Social Studies: Design an underwater home

### Cross-Curriculum Creativity Connection Elaboration

Language Arts: Create a tall tale

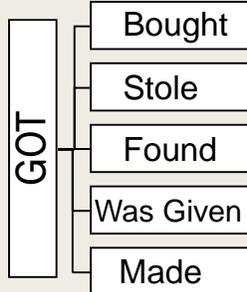
Math: Create different equations for the same number

Science: Create a list of words to elaborate on a concept, such as temperature

Social Studies: Elaborate on a familiar historical event

### Eliminating "GOT"

For example,  
"I 'got' a piece  
of candy."



Fluency and Flexibility  
Practical Classroom Applications

### Fluency: Brainstorm words that can be used in place of "got"

- acquired, gained, obtained, procured, secured, won, derived, drew, took, realized, recognized, deserved, earned, merited, captured, occupied, caught, secured, contacted, reached, developed, sickened, accepted, apprehended, comprehended, conceived, fathomed, grasped, saw, sensed, understood, learned, mastered

#### To come into possession of

- acquired
- gained
- obtained
- procured
- secured
- won

#### To acquire as a result of one's behavior

- deserved
- earned
- merited
- won

#### To perceive and recognize the meaning of

- accepted
- comprehended
- conceived
- fathomed
- grasped
- saw
- sensed
- understood
- realized
- recognized

### Mathematics

- How many different ways can you write the number 3?
- How many different ways can you make change for a dollar?
- How many equations can you construct that equal 64?
- How many ways can find the distance between two points?
- Name ways to find the area under a curve.



## Examples of Perceptual Blocks

Davis (1997)

- Consider this puzzle:

The police entered the gym containing five wrestlers just as the dying man looked at the ceiling and mumbled the words, "He did it!" They immediately arrested one of the wrestlers. How did they know which one?

## Debrief

- What is **Creativity**?
- What did you find fun?
- What did you find interesting?
- What will you use?
- Are there any questions?

*"I am enough of the artist to draw freely upon my imagination. Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world."*

~ Albert Einstein

## Your Three Obligations

- Develop you talents
- Pass on what you learn
- Leave the world better than you found it



Enjoyment

Engagement

Enthusiasm

## References

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- Reid, L. (1990). *Thinking skills resource book*. Mansfield, CT: Creative Learning Press.
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