Teaching with Imagination

Enhancing Your Creativity & the Creative Thinking Skills of Your Students

GSR 989: Philosophy & Practice of University Teaching

The Creative Thinker's Toolkit

- Tool #1: **What** is creativity? How does it differ from critical thinking?
- Tool #2: **Why** is creative thinking an essential skill to learn in higher education?
- Tool #3: **How** does one teach creative thinking?
- Tool #4: **So What** can teachers do to become more creative?

- **cre·a·tiv·i·ty** *n.* the ability to use imagination to transcend traditional ideas, rules, patterns, relationships, or the like, and to create meaningful new ideas, forms (Ruger n.d.)

What is Creativity?

- **Originality:** imagining or inventing something new
- **Synthesis**: generating new ideas by combining, changing, or reapplying existing ideas
- **Flexibility**: accepting change and new ideas, embracing possibilities

From Harris, R. (1998). *Introduction to creative thinking.* Retrieved from http://www.virtualsalt.com/crebook1.htm

Critical Thinking	Creative Thinking
Analytic	Generative
Convergent	Divergent
Vertical	Lateral
One Answer	Many Answers
Objective	Subjectives
Expected (results)	Unexpected (possibilities)
Left Brain	Right Brain
Verbal	Visual
Linear	Associative
Yes but…	Yes and…

Harris, R. (1998). *Introduction to creative thinking.* Retrieved from http://www.virtualsalt.com/crebook1.htm

- What does it mean to be a creative person?
- Can you name a few famous creative people?

What is Creativity?

- What are the traits, skills, and attributes of a creative person?

Creativity

Creativity may be broadly examined as:

1. **Level of creativity** – e.g. how much creativity a person has
2. **Style of creativity** – people's ways of expressing and/or engaging in creativity may be different

Adaptors vs Innovators

Adaptor vs Innovator (AI theory) developed by Michael Kirton:

- Looks at how people express their creativity (style)
- All people fall along this style continuum, independent of their level of creativity:

Adaptors vs Innovators

Adaptors	Innovators
Precise, efficient, methodical	Undisciplined, thinking tangentially
Seeks solutions to problems in tried and understood ways	Challenges assumptions, may create dissonance
Seen as sound, conforming, safe	Seen as unsound, impractical, often shocking
Maintains high accuracy for long periods of time	Capable of detailed routine for short bursts
Challenges rules rarely or cautiously	Often challenges rules

From: Kirton, M.J. (1989). *Adaptors and innovators: Styles of creativity and problem-solving* (pp.8-9). London & New York: Routledge.

Adaptors vs Innovators

- There are prevailing creative climates in organizations and academic disciplines
- In society, we tend to favor innovators over adaptors (e.g. thinking outside the box)
- Sometimes we need to think adaptively; sometimes we need to think innovatively
- Adaptors **improve** practices and innovators **change** practices

Why Creativity?

- How Schools Kill Creativity, TED Talk by Sir Ken Robinson
  http://www.ted.com/talks/ken_robinson_says_schools_kill_creativity
- While you are viewing the video, please use the PMI framework to make notes

PMI

PMI – Plus Minus Interesting (de Bono 1982):

- *Positives*: why it works
- *Minuses*: why it doesn't work
- *Interesting*: reflecting on this topic makes me think further about...

5 min- think pair share on your PMI with your neighbour

"Anyone can be creative. You just have to know how to think creatively, which involves taking a more imaginative approach to the challenges we all face, whether at work or at home."

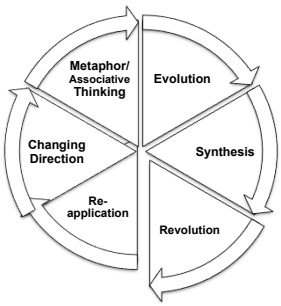
-Professor Gerard Puccio

Creativity & Bloom's Taxonomy

There is a greater focus on creativity in the newly revised Bloom's Taxonomy:

From: http://blogs.wsd1.org/etr/?tag=blooms-revised-taxonomy

How to Teach Creative Thinking



From Harris, R. (1998). *Introduction to creative thinking.* Retrieved from http://www.virtualsalt.com/crebook1.htm

How to Teach Creative Thinking

Methods	Strategies
Evolution	Brainstorming
Synthesis	Attribute Listing
Revolution	Six Hats (de Bono, 1982)
Reapplication	PMI
Changing Direction	Creative Problem-Solving
Metaphorical /Associative Thinking	Concept Mapping; Analogies

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Brainstorming

Evolution- incremental improvement
- How can you build upon the design of…?

Ask questions that seek to build **associative** networks, patterns, or relationships (e.g.):
- How many unusual and uncommon uses can you come up with for a brick and a knife?
- How many uses can you make of a toothpick?

Brainstorming Variations

Some ideas from DeHaan, R.L. (2011). Teaching creative science thinking. *Science*, 334(16): 1495-1496:

- **Think-pair-share-create**: pose an open-ended problem or question, think of as many solutions as you can
- **Peer instruction**: pose a question, then list solutions, then justify the best answer in pairs, record a consensus
- **Think-aloud - pair- problem-solving:**

1. Instructor poses problem from previous readings
2. Students form pairs, with one member the "explainer," the other the "questioner"
3. The explainers are given 2 min to reconfigure the original problem into a new configuration with a different solution
4. The questioner should ask for clarification or provide hints when needed
5. Repeat the exercise with a different problem later in the lecture so students can reverse roles

Attribute Listing

Synthesis: two or more ideas combined into a third new idea

- Attribute listing helps you focus on as many attributes of a problem as possible
  - Physical
  - Social
  - Process
  - Psychological
- Example: http://members.optusnet.com.au/charles57/Creative/Techniques/attributes.htm

Six Hats

Six Hats Activity by de Bono (1982) to help create parallel thinking in groups (also may support the growth of new **revolutionary** ideas if set up that way):

Blue
White
Red
Green
Yellow
Black

From http://www.storyboardthat.com/articles/business/brain-storming/six-thinking-hats and de Bono, E. (1982). *de Bono's thinking course.* London: BBC.

Creative Problem-Solving

Find a creative solution to this problem (Weisberg 2006):

- Our basketball team won last night, 74-55, and yet not one man on the team scored so much as a single point. How is that possible?

From: Weisberg, R.W. (2006). *Creativity: Understanding innovation in problem-solving, science, invention, and the arts.* Hoboken, NJ: John Wiley & Sons, Inc.

Metaphoric/Associative Thinking

Concept Mapping:

From: http://www.cryptomundo.com/cryptozoo-news/xmikex/

So What?

How do teachers demonstrate creativity?

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So What?

How can you become more creative as a teacher? Come up with a question to ask yourself on this topic using the method outlined below:

- **Evolution** (e.g. "How can I make my lectures better and better?")
- **Synthesis** (e.g. "How can I combine lecture with another teaching strategy?"
- **Revolution** (e.g. "Why not stop lecturing and have the students teach each other?")
- **Reapplication** (e.g. How can I repurpose the content of this lecture into something that is authentically me and works for my students?)
- **Changing Direction** (e.g. "Reducing my expectations around content will give me greater flexibility in the classroom to try learner-centred methods.")

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References

de Bono, E. (1982). *de Bono's thinking course*. London: BBC.

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