Infusing Creativity in SCHOOLS and Classrooms

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Day 1
What is creativity?

Original and Task Appropriate
What is Creativity?

“Building universes out of nothing.”
Lisa Barone

“Copying smarter.”

Daniel Pink

“Giving the world something it didn’t know it was missing.”

“Seeing something that doesn’t exist and then making it so.”
Hugh Howey

“Going to unexpected places.”
Shane Snow

“Seeing the intersection of seemingly unrelated topics and combining them into something new.”

Brian Clark

“Tapping into your soul and your intuition and allowing them to guide what you make.”
Bernadette Jiwa

“It’s our brains doing what they do.”
Michael Grybko

“Interpreting something you saw or experienced and processing it so it comes out different than how it went in.”
Henry Rollins

“One part inspiration, one part motivation.”
Ann Handley

“Living in possibility and abundance rather than limitation and scarcity.”
CJ Lyons

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https://www.copyblogger.com/define-creativity/
“Taking what’s in front of you and everybody else and making something new out of it.”

Austin Kleon

“Seeing patterns that others don’t and effectively communicating them.”

David Meerman Scott

“Creativity (n): a word people use when they want to sound smart talking about a really abstract subject. Me? I prefer to avoid abstractions.”

Jon Morrow

“Creativity is expressing your ideas in a full-contact, full-color way.”

Pam Slim

“The strange partnership between a human being’s labor and the mystery of inspiration.”

Elizabeth Gilbert

What is Creativity?

“Just making something. It might be something crummy or awkward or not ready for prime time. If you make something, you are creative.”

Sonia Simone

“Seeing and communicating ideas in ways that are unique, compelling, and unexpected.”

Lee Odden

“Creativity brings good things in the world that otherwise would not exist. It’s a noble act of pushing back darkness and giving hope to despair.”

Jeff Goins

“The ability to connect the seemingly unconnected and meld existing knowledge into new insight…”

Maria Popova

“This might not work.”

Seth Godin

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**Mini-c**

Novel and personally meaningful interpretations of experiences

**Little-c**

Everyday creativity

**Pro-c**

Creative acumen in a professional field

**Big-C**

Legendary creative accomplishments

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Mihaly Csikszentmihalyi

Ron Beghetto and James Kaufman
What about creativity and giftedness...

...a way to be gifted
...separate from intelligence (sort of)
Why teach creativity?

* Increases options for communication
* Develops better problem solvers
* Students learn the material better
* It is fun
“Learn the rules like a pro, so you can break them like an artist.”

-Pablo Picasso
Transformations

MODIFY INTO SOMETHING DIFFERENT
Personality

- Openness
- Neuroticism
- Agreeableness
- Extraversion
- Conscientiousness
Creativity is an Attitude
The first step in being more creative is to give yourself permission to be more creative.
Guilford's Components of Divergent Production

Fluency (Many)
The production of a great number of ideas.

Flexibility (Varied)
The production of ideas or products that show a variety of possibilities or realms of thought.

Originality (Unusual)
The production of ideas that are unique or unusual.

Elaboration (Add to)
The production of ideas that display intensive detail or enrichment.
To solve: First determine the letter each sketch resembles. Then think of a word suggested by the picture or pictures that fits the blanks. In the example, the scales represent the letter T, and suggest the word Justice.
Make Your Own
Native Americans

Determine the letter each picture represents. Then think of a word that is similar to the pictures that will fill in the rest of the blanks.

Example: N \( \rightarrow \) N i v e
\( \rightarrow \) m e c i c n s

1. __ O __

2. __ __ __ __ __

3. __ __ __ __ __

4. __ __ __ O __

5. __ __ __ __ __ __ __

6. __ __

7. __ __ __ __ __

8. __ O M __ M
State Creature
Alphabet word
Sailboat Made of Rubber Sandal and Plastic Bag
by Thomas Akimat Ekiru
Age 5
Kenya
Wheeled Coconut-Shell Boat
by Abdul Rosit
Age 11
Indonesia
Guitar Made of Cooking-Oil Tin
by Oscar Miguel
Age 13
Brazil
Dolls
by Emily Wanjiku,
Age 6, Kenya

Yamileth Fabiola Castaneda,
Age 4,
Guatemala

Carolyn Wanjiru,
Age 6 Kenya
Oil Tanker Made of Pesticide Cans
by Fall Amath Yaya
Age 14
Senegal
Pull Toy Made of Plastic Oil Bottle
by Tonny Sekibengo
Age 7
Uganda
Push Toy Made of Scrap Wire and Bottle Caps
by Ian Kinuthia
Age 6
Kenya
Soccer Ball Made of Twine and Plastic Bags
by David Mbugua
Age 7
Kenya
Wood-and-Bamboo Gymnast
by Prabakti Wiyoso
Age 11
Indonesia
Sardine-Can Pull Toy
by Kislon Eusebe
Age 9
Dominica
Will the real Swiss Cow please sit down?
There are lots of ways to squirt water.
Day 2
Quick Review
creativity?

Original and Task Appropriate
Novel and personally meaningful interpretations of experiences

Everyday creativity

Creative acumen in a professional field

Legendary creative accomplishments

Ron Beghetto and James Kaufman
Fluency (Many)
The production of a great number of ideas.

Flexibility (Varied)
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Originality (Unusual)
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The production of ideas that display intensive detail or enrichment.
Transformations

MODIFY INTO SOMETHING DIFFERENT
Getzels’ Categorization of Problems

**Type 1 Problem:**
Presented problem with known method of solution

Find the area of this rectangle by multiplying the length times the width.

**Type 2 Problem:**
Presented problem, but the method of solution is not known to the problem solver

Develop a strategy to calculate the area of this rectangle.

**Type 3 Problem:**
No presented problem

Propose an important question about this rectangle and solve it.
1. Creative individuals have a great deal of **physical energy**, but they are also often **quiet and at rest**.

2. Creative individuals tend to be **smart**, yet also **naive** at the same time.

3. Creative individuals have a combination of **playfulness** and **discipline**, or responsibility and irresponsibility.

4. Creative individuals alternate between imagination and **fantasy** at one end, and a rooted sense of **reality** at the other.

5. Creative people seem to harbor opposite tendencies on the continuum between **extroversion** and **introversion**.

6. Creative individuals are also remarkably **humble** and **proud** at the same time.

7. Creative individuals to a certain extent escape rigid gender role stereotyping and able to express both **masculine** and **feminine** dimensions of their personalities.

8. Generally, creative people are thought to be **rebellious** and **independent**. Yet it is impossible to be creative without having first internalized a domain of culture. And a person must believe in the importance of such a domain in order to learn its rules; hence, he or she must be to a certain extent a traditionalist. So it is difficult to see how a person can be creative without being both traditional and conservative and at the same time rebellious and iconoclastic.

9. Most creative persons are very **passionate** about their work, yet they can be extremely **objective** about it as well.

10. The openness and sensitivity of creative individuals often exposes them to **suffering** and pain yet also a great deal of **enjoyment**.

Csikszentmihalyi (1996)
Tips for the classroom to see your students differently...

- For one week, pay attention to students causing disturbances. Do you see evident of creativity in their behavior? Perhaps that originality can be channeled in other ways.

- Try giving two assignments: one requiring accuracy (e.g., timeline of key events in Civil War) and one requiring originality (e.g., Describe our lives if the South had won). Where there differences in how students performed.

- Try giving two assignments, one that must be completed immediately and one for which there is incubation time. Did you see differences?

- Create a grid with creative characteristics in each box. Over a week, put the names of students who exhibit the characteristic listed in the box.

(Starko, 2010)
Metaphorical Thinking
(an Attribute Transferring technique)

...combining two unlike things into something new
Create a cartoon that combines the Enron Tragedy with Geometry.
Make Your Own
I'm tired of playing army, Christopher Robin. Can we go home now?
Hurricane Katrina claims another victim....
YES WOODSTOCK THERE IS A HEAVEN FOR ASTRONAUTS....
Day 3
Each of the illustrations below is the lighthearted, literal drawing of the name of a common thing. For instance, a star firing a squirt gun would be a SHOOTING STAR. How many of the words below can you identify?

1. bulldog
2. earthworm
3. catfish
4. funnybone
5. cupcake
6. butterfly
7. firecrackers
8. goldfish
Make Your Own
Roger von Oech’s

10 Mental Blocks to Creativity

• The Right Answer
• That’s Not Logical
• Follow the Rules
• Be Practical
• Avoid Ambiguity

• Don’t Make Mistakes
• Play is Foolish
• That’s Not My Area
• Don’t Be Foolish
• I’m Not Creative

Taken from A Whack on the Side of the Head
Idea Squelchers

We’ve never done it before.
We’ve already tried that.
We’ve always done it this way.
It can’t be done.
It won’t work.
It’s a waste of time.
What will people think?
Someone would have suggested it before if it were any good.
Too modern.
Too old-fashioned.
Let’s discuss it at some other time.
This is the last try.

You ask too many questions
You’ve got to be kidding.
Let’s not fight city hall.
Don’t forget the chain of command.
You’ll never be able to see it to others.
Let’s form a committee.
It’s all right in theory, but it will never work in practice.
It’s not in our budget.
It’s silly
We’re not ready for it yet.
It will take too long.
We’re doing it the way it’s supposed to be done.
Pict-Analogies

In an analogy problem, the solver must find a relationship between two sets of pictures. For example, given "Rock is to.coin as horse is to..." a suitable answer would be "horse" (the relationship here being a part/part of analogy of each other). Analogies are often written in the abbreviated form: Rock:Coin :: Horse:... The eight analogies on these pages work in the usual way, except that pictures have been substituted for words. For each set of pictures, first identify the relationship between the items shown, and then solve one of the choices (A-J) at the bottom of the next page to solve the analogy. Two of the labeled pictures will not be used.

1. A.  
2. B.  
3. C.  
4. D.  
5. E.  
6. F.  
7. G.  
8. H.  

CHOICES

A.  
B.  
C.  
D.  
E.  
F.  
G.  
H.  

1. 2

By Emily Cox and Henry Rathvon
“Sometimes you get a brainstorm sometimes you only get the clouds.”
Deferred judgment--evaluation is ruled out (both criticism and praise).

Freewheeling is welcomed (Wild ideas are encouraged…You are more likely to find a creative idea by being wild first and “taming down” the idea second).

Quantity is wanted (Typically the later ideas are more imaginative).

Combination and improvement are sought (hitch-hiking / piggy backing).
Variations

- Stop-and-Go
- Phillips 66
- Reverse Brainstorming
- Brainwriting
Tour the campus and find something that...

...is larger than life
...is not where you would expect it
...is shaped like the letter of the alphabet that begins the word
...hasn’t changed in 100 years
...changes every day
...Picasso would have painted
...would be a good idea for a song
...no one thinks is beautiful
...is essential but seldom noticed
...is used in a way that you wouldn’t expect it to be used
...professors love and students hate
Day 4
Hold It!

Imagine that the 16 items below were smeared with ink. What prints would appear on your hand after you used each one? To solve, match the objects (numbered 1-16) with the prints they'd leave (A-F, at right), based on the way most people commonly grasp or use the items. Southpaws should mentally reverse the prints. "Hands-on" experimentation while you solve is allowed.
Attribute Listing
List attributes of countries.

Complete an attribute grid for several countries.

Create an ideal country using your attribute grid.

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Political System</th>
<th>Resources</th>
<th>Geographic Location</th>
<th>Flag</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Characters</th>
<th>Goals</th>
<th>Obstacles</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Animals or objects)</td>
<td>(What characters want to become, to achieve, to happen)</td>
<td>(Things, personal characteristics)</td>
<td>(Reach goal, change goal, change personalities, getting shot or caught)</td>
</tr>
</tbody>
</table>
Morphological Synthesis
Combine two attributes from the grid

<table>
<thead>
<tr>
<th>Animal Head</th>
<th>Frog</th>
<th>Squirrel</th>
<th>Cat</th>
<th>Robin</th>
<th>Pig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Bear</td>
<td></td>
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</tr>
<tr>
<td>Elephant</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Goldfish</td>
<td></td>
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</tr>
</tbody>
</table>
Synectics

Greek “syn” and “ektos” - fusion of diverse ideas

“making the strange familiar” – combine something familiar with a new problem or situation to solve a problem

“making the familiar strange” – combine something new or strange with something familiar to gain new insights into or perspectives on the already familiar idea.

Valuable for two reasons:
1. Students process content at complex levels of thinking
2. Teachers gain insight into students’ understanding of key ideas
Direct Analogies – look for parallels between one idea, object, or situations and another (i.e., How is a comb like a rake? What things are like a comb? What animal is like democracy? How is the cardiovascular system like a superhighway?)

Personal Analogies – students are asked to be the thing (though not physically act out the object or situation)
Four types: (1) first-person description of facts, (2) first-person identification with emotion, (3) empathetic identification with a living thing, and (4) empathetic identification with a nonliving object
(i.e., What is it like to be a sedimentary rock? Describe life from the perspective of an electron? Sound wave? Letter in the mail? What does it feel like to be a blood cell travelling through the body?)

Compressed Conflicts (Symbolic Analogies) – bring together words that express dramatically opposed ideas (i.e., shameful hero. “Which force in physics could be considered powerfully weak?”

Fantasy Analogies - using imagination without reference to objective reality (i.e., How can we move a sleeping cow from a barn?)
The procedure for “creating something new” is:

Phase I: Students Describe the Present Condition
Phase II: Students Suggest Direct Analogies
Phase III: Students Become One of the Analogies (Personal Analogy)
Phase IV: Students Created Compressed Conflict
Phase V: Students Create Another Direct Analogy (based on the compressed conflict from Phase IV)
Phase VI: Students Use the Last Analogy to Re-examine the Original Task

The procedure for “making the strange familiar” consists of seven phases:

Phase I: Substantive Input (The teacher presents the new topic)
Phase II: Direct Analogy (The teacher suggests an analogy and asks students to explain it)
Phase III: Personal Analogy
Phase IV: Comparing Analogies (Students point out the similarities between the new material and the direct analogy)
Phase V: Explaining Differences (Students recognize where the analogy breaks down)
Phase VI: Exploration (Students re-explore the original material)
Phase VII: Generating Analogy (Students repeat the analogy process in small groups, this time creating their own analogies)
Imagine that Mr. Lopez’s class has been studying Martin Luther King’s march in Selma, Alabama.

Mr. Lopez: Today we are going to talk again about Dr. King’s march in Selma, but we are going to think about it in a new way. What do you remember about the march?

Sam: It reminds me of mosquitoes. There are a lot of mosquitoes in Alabama—huge ones. I bet the marchers got bit a lot.

Mr. Lopez: That could be true, but we are not trying to think about animals that actually were on the march, but animals that are like the march in some way. One way to do that is to think about one of the characteristics of the march and see if there is an animal that also has that characteristic.

Gina: Well, it could be like corn. Corn has lots of little parts, and the march had lots of people.

Jared: Yeah, but corn’s dead. The marchers weren’t!

Mr. Lopez: When we make analogies, there often are some characteristics that fit and some that don’t. We’ll think of several alternatives until we find one we can agree on.

Deb: It probably matched like a giant snake down the road.

Diane: I think it was more like an army of fire ants. Each ant alone isn’t very strong, but an army of ants can be strong and dangerous. The march was strong because there were so many people.

Ben: Yes, but the people weren’t violent like fire ants. They were more like a bunch of sheep, or ...

Maria: Wolves! I read that wolves are really gentle animals; they only kill for food when they need it. They work together in packs to kill much bigger animals.

[The class decides to work with the idea of wolves.]

Mr. Lopez: All right. Wolves. What does it feel like to be a wolf?

Bob: Furry!

Mr. Lopez: Bob, what kind of feeling might a wolf have? How does it feel to be a wolf?

Bob: Confident. I know I have any wolf brothers around me.

Katie: Nervous. I don’t like killing, but sometimes I have to. I wish I could eat grass and be a peaceful animal.

Bruce: I’d rather be a lone wolf if I could.

Wendy: It’s weird. There could be a lot of fear. A wolf would feel strong, but it would be scary to try to kill a moose or some big thing.

[The class continues to talk about the feelings a wolf might have. Mr. Lopez continues to record their responses.]

Mr. Lopez: Looking at the things you’ve said about wolves, do you see any words that conflict, words that are opposite or don’t seem to go together?

[The class makes several suggestions, including confident-nervous, peaceful-killing, lone-brothers, strong-scared. They choose strong-feared as the most interesting conflict.]

Mr. Lopez: Okay, can you think of another analogy for strong-feared? You may think of another animal or some type of machine.

Diane: A burglar alarm. It is strong, but you wouldn’t have it if you didn’t have fear.

Bob: A bird. Birds are really strong for their size, but they fly away at the slightest disturbance.

Wendy: A soldier. It’s not exactly an animal, but a soldier is strong even though he might be afraid.

Deb: Salmon swimming upstream. They have to be really strong, but they don’t know where they’re going. They must be afraid.

Ben: How about a building being bombed? It’s strong, but afraid it won’t be strong enough.

At this point Mr. Lopez may either help the class select one of these analogies or let individual students select their own. They go back to the original topic: the march on Selma, and write about how the march is like the analogy selected. Deb might write about salmon willing to battle the stream for the sake of the next generation, and Bob might write about how flocks of birds stick together in times of danger. Each analogy has the potential to bring insight into the strength, motivation, and courage of the marchers.
Opening Moves

Solving this puzzle should be an open-and-shut case. Each of the ten keys pictured at the bottom of the page fits one (and only one) of the ten locks; the puzzle is to match lock to key by examining their distinctive shapes and sizes. If you have trouble picking the locks, you'll find the key to solving in the Answer Drawer, page 60.
The SCAMPER list is a modification by Bob Eberle of the work of Alex Osborn. SCAMPER is an acronym for idea-spurring verbs to improve objects or generate ideas.
Substitute

What can you use instead of the ingredients, materials, objects, places, or methods now used? Vegetarian hot dogs are examples of products which illustrate substitution.
Which parts or ideas can you blend together?

Combine

Today’s cell phone combine phones, with cameras, with browsers, with alarm clocks…. 
What else is like this, what can be copied or imitated?

Air fresheners that resemble shells and children's beds that look like race cars illustrate adapting.
Modify: Can you change an attribute such as color, sound, taste, odor, form, or shape or perhaps add a new twist? Scented markers illustrate modifying.

Magnify: Can it be stronger, larger, higher, exaggerated, or more frequent? Extra-strength medicines as well as over-sized and larger cell phone are examples of magnify.

Minify: Can it be smaller, lighter, less frequent or divided? The wrist-band iWatch is an example of minify.
Can it be used in a way other than how it was intended to be used?

Old tires used for fences, swings, and bird feeders, and the development of snowboards illustrate "put to other uses."
Europameisterschaft 2003
im Ju Jutsu Fighting und Duo
am 07.-08.06.2003 in Hanau - August-Schértner-Halle
Alle Infos und das VIP-Karten Gewinneaspekt unter:
www.EM2003.de

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What can you take away or remove?

Sodium-free and fat-free foods and tubeless tires are examples of eliminating something.
Rearrange: Can you interchange parts or change the pattern, layout, sequence, or schedule?

Front wheel drive cars are examples of rearranging.

Reverse: Can you turn parts backwards, inside out, upside down, or around?

Reversible clothing is a classic example of reversing something.
Make Your Own
The six doodles below are in fact bird's-eye views—funny little scenes observed from directly overhead. Trouble is, we can't decide exactly what any of them are. For example, we had figured that picture 1 was an overhead view of a ski school for snowmen. We had, that is, until we showed it to some friends. One said it was a rabbit scrimmage; another thought it was hamburger popsicles; and a lifeguard we know saw pregnant women dangling their feet in a pool. What do you think these pictures represent?
To solve: First determine the letter each sketch resembles. Then think of a word suggested by the picture or pictures that fits the blanks. In the example, the scales represent the letter T, and suggest the word JUSTICE.

Ex. JUS TICE

1. _ _ _
2. _ _ _
3. _ _ _
4. _ _ _
5. _ _ _
6. _ _ _
7. _ _ _
8. _ _ _
9. _ _ _
10. _ _ _
11. _ _ _
12. _ _ _
13. _ _ _
14. _ _ _
15. _ _ _
16. _ _ _
Each of the illustrations below is the lighthearted, literal drawing of the name of a common thing. For instance, a star firing a squirt gun would be a SHOOTING STAR. How many of the words below can you identify?

1. FIDO
2. CNN
3. seeing
4. Things
5. GAMES JUNIOR FEB/MAR 1990
6. 24K
7. D2O
8. C2H2
Pict- Analogies

In an analogy problem, the solver must find parallels between relationships. For example, given "Rock is to cork as horse is to __," a suitable answer would be "shore" (the relationship here being words that are anagrams of each other). Analogies are often written in this abbreviated form: ROCK : CORK :: HORSE : SHORE. The eight analogies on these pages work in the usual way, except that pictures have been substituted for words. For each set of pictures, first identify the relationship between the items shown, and then select one of the choices (A-J) at the bottom of the next page to complete the analogy. Two of the lettered pictures will not be used.

1. T ea _ C up _ Grass _ ?

2. _ B a seball _ _ D iamond _ _ V oll eyball _ ?

3. _ Tuba _ ? _ _ ?

4. _ Mediterranean _ _ Bear _ _ ?

5. _ Peas _ _ ? _ _ ?
Hold It!

Image that the 16 items below were smeared with ink. What print would appear on your hand after you used each one? To solve, match the objects (numbered 1-16) with the prints they'd leave (A-P, at right), based on the way most people commonly grasp or use the items. Southpaws should mentally reverse the prints. “Hands-on” experimentation while you solve is allowed.
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by Mark Mazut
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