



# 7 Tools for Enhancing Creativity in the Classroom

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One Teacher's Journey

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A project for *CEP 818: Creativity in Teaching & Learning*

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## Executive Summary

Francis T. Evans once stated, “You cannot teach creativity, but you can kill it.”<sup>1</sup> It is a shocking statement but echoes what some educational policy makers and others have lamented about what they see as the lack of creativity and innovative thinking in today’s students and schools’ roles in that decline. Sir Ken Robinson, whose 2006 TED Talk “Do Schools Kill Creativity” has been widely watched, states, “Creativity now is as important in education as literacy, and we should treat it with the same status.”<sup>2</sup> In “Why Education Without Creativity Isn’t Enough” Anya Kamenetz discusses the need for a creative workforce and states, “Workers at every level benefit from an education that emphasizes creative thinking, communication, and teamwork.”<sup>3</sup>

It is clear that nurturing creativity and innovation is a renewed focus in education. Bloom’s Taxonomy was revised in 2000 to include “Creating” as one of the higher order domains of learning and the recent emphasis on STEM and Project-Based Learning show the value being placed on creativity in the classroom. Educators want to be more creative and seek ways to encourage creative thinking in our students. However, what does it really mean to be creative? I’ve come to realize, most importantly, that *creativity is not trait, but a skill*. This is a fact that has power to change teaching and how students learn.

Creativity can be taught. In Sparks of Genius: The 13 Thinking Tools of the World’s Most Creative People, authors Robert and Michèle Root-Bernstein advocate for the application of thirteen tools of the mind to expand creative potential in individuals. By combining similar tools, we arrive at seven that are applicable in all domains of knowledge and can be explored and taught in a learning setting. **They are Perceiving, Patterning, Abstracting, Embodied Thinking, Modeling, Playing, and Synthesizing.**

This paper describes each of these thinking tools and shares examples from my own experiences as a fifth grade Language Arts teacher in using these tools. Over the past three months, I have explored each of the seven tools through the framework of a specific subject area domain, in my case, the idea of genre. I applied the tools to my lesson planning and also to the work I expected from my students.

What I found is that these tools can be taught and used in all learning situations. Additionally, the benefit of teaching them is that students can learn to apply them across disciplines. I advocate for the adoption of these “thinking tools” by more educators to help students create a common language for connecting ideas across subject areas and deepening their understanding. As the Root-Bernsteins state, “to reach the widest range of minds, ideas in every discipline should be presented in many forms.”<sup>4</sup> By learning to look at and experience content in different ways, learners can broaden the scope of what they truly know.

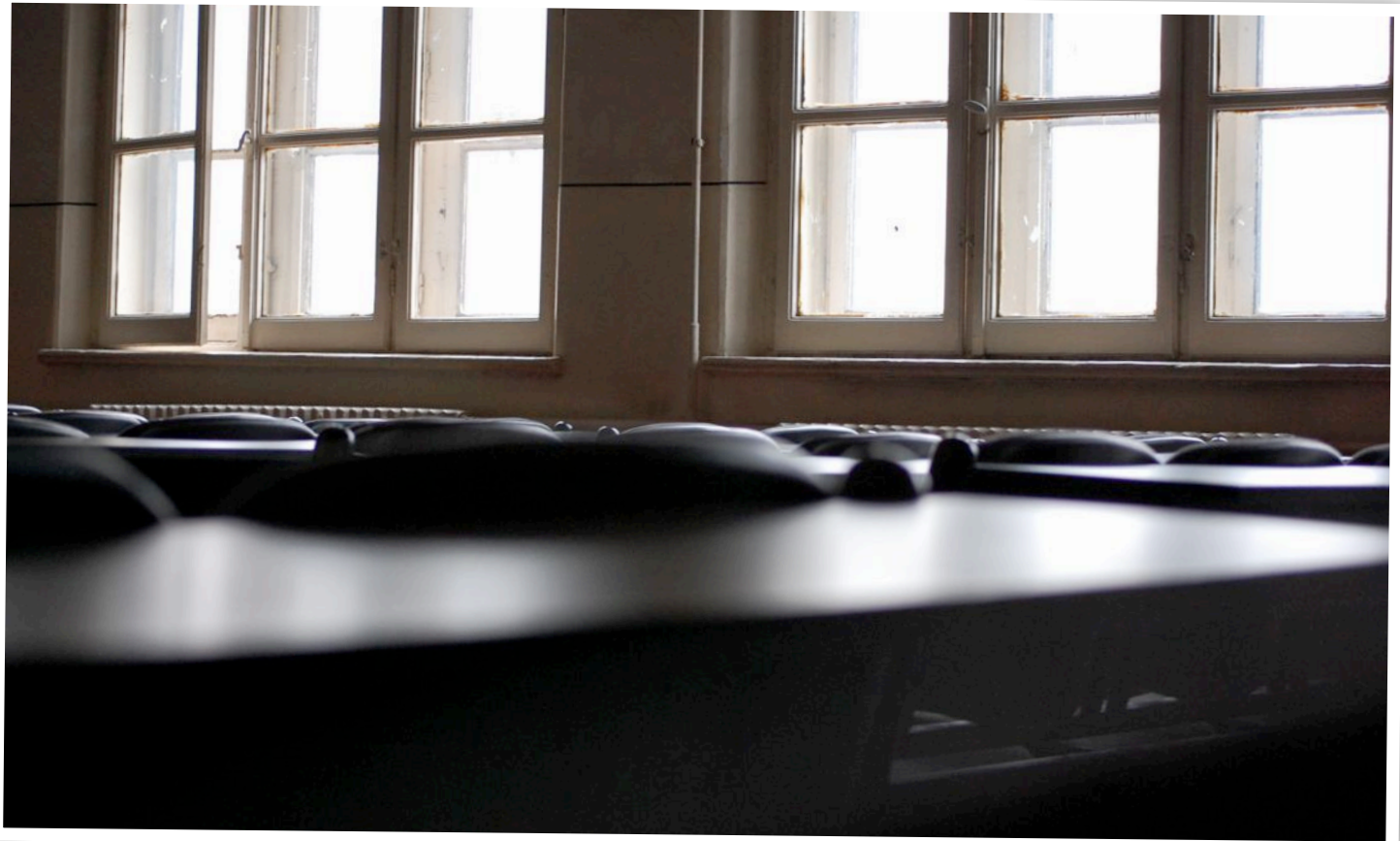
1. Evans, F. T., in Tornkvist, 1998, p. 5

2. “Ken Robinson Says Schools Kill Creativity.” TED: *Ideas worth Spreading*. N.p., n.d. Web. 09 Dec. 2012.

3. Kamenetz, Anya. “Why Education Without Creativity Isn’t Enough.” *Fast Company*.

4. Root-Bernstein, Robert Scott., and Michèle Root-Bernstein. *Sparks of Genius: The Thirteen Thinking Tools of the World’s Most Creative People*. (Boston, MA: Houghton Mifflin, 1999) p. 318.

# The Case for Creativity



## Background

I recently attended a conference session on teaching creative thinking that I found a bit disappointing. I wanted tools for improving the creative process in students, but the session focused more on how students that are naturally creative think and how assignment structures can sometimes limit creativity. Having that information is useful, but practical tools are what most teachers are looking for and need to make change in their teaching.

I have taught middle school Language Arts for 19 years and am constantly looking for ways to improve my practice. I am currently working on my Masters of Education with a focus in Literacy and Technology through Michigan State University's MAED program. In the fall, I began my coursework for CEP 818: Creativity in Teaching & Learning and have used the seven tools outlined above in my teaching.

Throughout this white paper, examples of my own experiences and those of my fifth grade students relating to the application of these thinking tools will be shared. I've also provided links to examples in content areas beyond Language Arts to inspire further thinking.



# Rethinking Thinking

## Perceiving

Perceiving is not just about seeing, but taking note of and understanding what you see. We live such busy lives that it is easy for us to miss the details in the things we see every day. Perception is about slowing down and using our minds to guide our eyes to notice what is present and then using that information to think about what is not or how it could be different.

Students today are used to looking at knowledge from different content areas as separate and teaching the skill of perceiving can help to bring down walls between knowing and applying information. Albert Einstein enjoyed sailing and took his son Hans with him on outings. He was disappointed on finding that his son could not apply the knowledge he acquired in physics class to the manipulation and understanding of the mechanics of their boat. He saw it as a failure of his son's education that he could not connect his book work to experiences in the real world.<sup>5</sup>

Perceiving starts with active observing. Mathematicians, writers, scientists, and artists all use observation. Yet, observing involves not just seeing but knowing what to look for. The Root-Bernsteins state, "Observing is a form of thinking, and thinking is a form of observing."<sup>6</sup>

The next step is using what we observe to imagine the subject differently. Developing the ability to re-imagine is a critical skill in creative

problem-solving. By helping students to use all of their senses, not just visual, they can learn to experience and more importantly apply knowledge in multi-modal ways.

### My Experience with Perceiving

In exploring perception, I chose an artifact that I felt would be a familiar representation of genre, a list.

Genre is a way of categorizing literature by its common elements. Each genre has its own set of constructs that help us better understand the story because we have certain expectations based on the category we apply to the text. Having an understanding of the basic elements of each genre helps us know what to look for in the text, an important part of observation.

In re-imagining genre, I created a video based on the ideas in my list. It captured the essence of what I want students to understand about genre. As I researched ideas and looked at images, I thought of new ways of looking at genre. For example, genre is subjective and in many ways it is a social construct. There are many types of genre besides literature, such as musical genres, and they can change over time.

As I arranged the images in the video, a narrative developed. I ended up deleting about half of the images I originally imported and saved the ones that I felt had the most impact. At times, I went back to search for an image when a new thought occurred. The final video may be viewed [here](#).

### Examples of Perceiving

- **Found Functions** in the real world

## Patterning

Patterning is the identification of common or repeating elements in a work and the recombination of those basic elements into a different and often more complex piece. Often, recognizing a pattern is the first step in creating a new one.

Patterning is important because it allows us to make predications and have expectations. It helps us make sense of the world. Recognizing how patterns in different mediums, such as poetry or music, are related leads to recognizing meta-patterns.

Understanding patterns and patterns of relationships is also important in mathematics and science and can be likened to looking at a puzzle. As embryologist Christiane Nüsslein-Volhard stated, "The most important thing is not any one particular piece, but finding enough pieces and enough connections between them to recognize the whole picture."<sup>7</sup>

Helping students see the "big picture" is important. Teaching them to recognize types of problems can help them understand how to apply various problem-solving patterns.

### My Experience with Patterning

In thinking about how patterning applies to genre, I thought about what various genres have in common. Most books my students read are fiction and

5. Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 16.

6. Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 43.

7. Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 104.

# New Ways of Seeing

the most basic element of fiction is plot. In teaching plot elements, a tool I often use to help students see the parts of a story is a plot chart or story arc.

In considering other patterns in fiction, I thought about how the plot chart focuses on what is the same. When discussing genre, I really want students to understand what is different.

Genres exist as groupings of books with common elements and features. Those patterns allow us to know what to expect in particular kinds of stories. We instantly recognize a mystery by identifying an inciting event that must be solved. Historical novels are recognized by the time period of the setting. Even though these novels can be parsed using a plot chart, one kind of pattern, it only shows us how a mystery or historical novel is like all other books. To understand how a mystery is like other mysteries takes recognizing a different kind of pattern.

I began to imagine a series of questions that students could ask themselves to help them decide into what genre a book fit. Like a "choose your own adventure" book, I pictured a sort of flow chart they could follow leading them to the category that fit. As mentioned in *Sparks of Genius*, "Questions...are also patterns."<sup>8</sup>

For my re-patterning, I thought an infographic might help me visualize this process. I looked back over some articles I had bookmarked about tools for creating infographics and decided to

try **Piktochart**. The infographic may be viewed [here](#).

The infographic is a useful tool for my students. If they can follow the questioning process, it not only helps them determine the genre of a piece of literature, but the questions also help them identify the elements that distinguish the various genres from each other.

## Examples of Patterning

- **Stop Motion Drum & Piano** by a man with no musical knowledge

## Abstracting

Abstracting is boiling down an idea to its most important or recognizable parts. When you reduce an idea to its most stripped down and pure form, this is the essence of abstracting. Physicist Werner Heisenberg stated, "The essence of abstraction consists in singling out one feature, which, in contrast to other properties, is considered to be particularly important."<sup>9</sup>

The interesting thing about an abstraction is that even though it is part of a whole, or one representation of it, the original idea can still be seen in the abstraction. The simplification often can reveal connections to other ideas that were not immediately apparent. By drawing analogies to other ideas, often times an abstraction can be more powerful than the original concept. The discovery of scientific principles, mathematical theorems, and even the act of writing is the process of

abstracting, taking a whole and reducing it to its most important elements.

## My Experience with Abstracting

In thinking about genre, I needed to first identify the most recognizable element. What struck me as most important was the image of a book. Genres are forms of literature and books are the way we most typically access that information. I began thinking about how to abstract a book.

My abstraction is based on the image of an open book. When I look at an open book, the silhouette reminds me of a bird. I began to envision the image of an open book in the sky like a bird in flight.

I am the first to admit that my artistic ability does not often match my artistic vision. To accomplish this image, I first looked for free vector images of open books and found several. I then looked for images of open sky on Flickr. I used Photoshop to arrange my books in flight and then saved the jpg to my Mac Photostream. On my iPad I used an app called **SketchMee HD** to manipulate the image. You may view my genre abstraction image [here](#).

The image of a book in flight can have many connotations. The sky can represent an openness to the ideas in the books. Flight also has a feeling of freedom and recognizing genre is about choice for readers.

Abstraction is a difficult tool to use. My greatest challenge was in how to translate what was in my imagination to

8. Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 106.

9. Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 72.

# Body Thinking

a form. If I had musical talent, I might have tried to express what different genres might sound like. Despite the difficulties, the tool of abstracting has great value. In teaching, I find I make comparisons often when trying to help students that might be struggling with a concept.

I have been developing a genre passport component to my classes' reading requirement this year and I decided to use a badge system to recognize when students have completed the requirements for a particular genre. It was a challenge to come up with the badges because I had to decide for each genre what was the

most recognizable visual aspect or related object. Developing those was an act of abstraction and I feel the badges will help my students recognize the important elements of their genre choices.

## Examples of Abstracting

- **Math Poetry** challenge

## Embodied Thinking

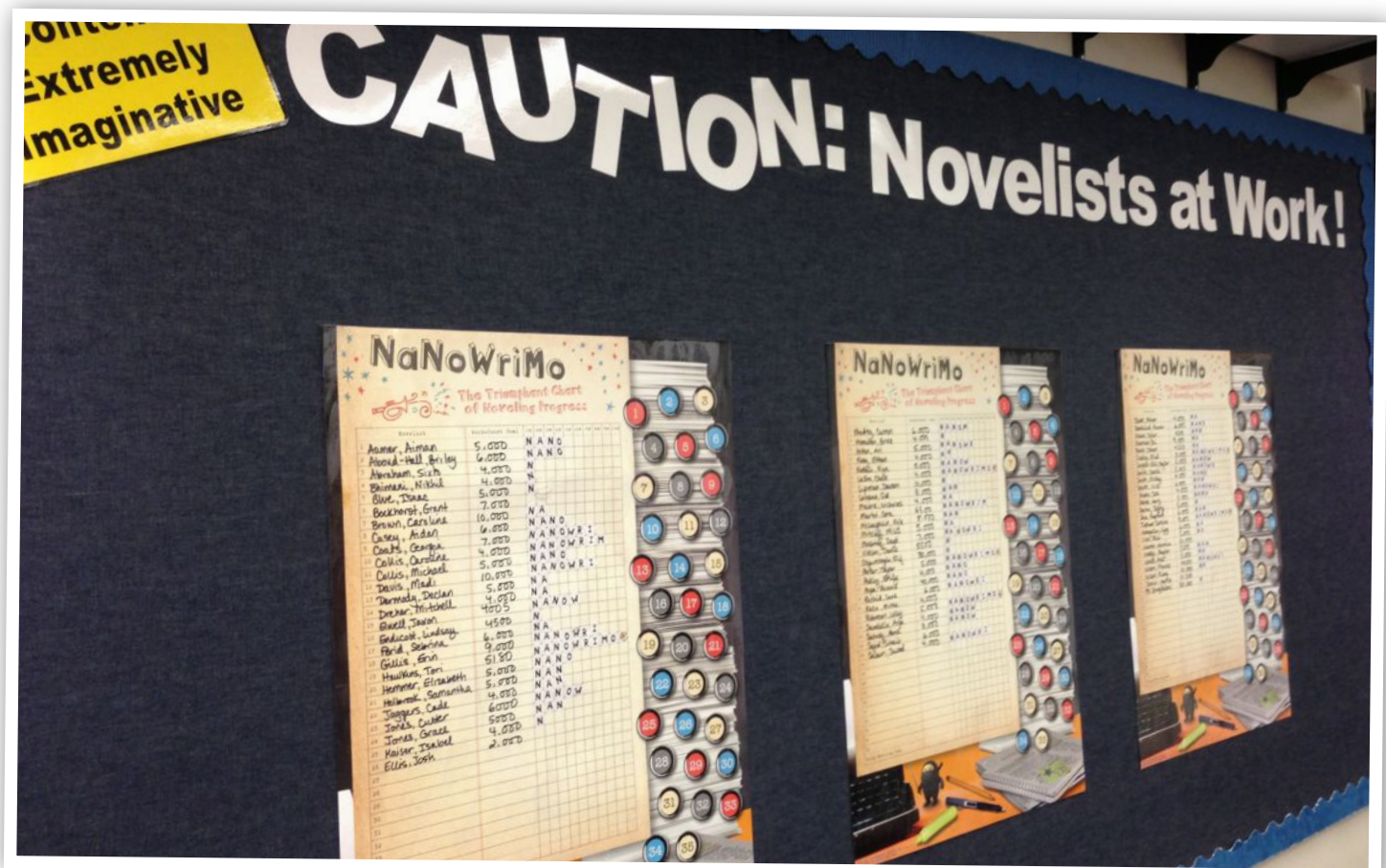
Embodied thinking involves developing an awareness of a subject through physical and empathetic interactions, manipulations, and representations. It involves not just kinesthetic movement and interactions,

but developing a deeper mental understanding of a subject.

Brain research has shown that movement is linked to learning and that signals triggered by movement affect memory, attention, and spatial perception.<sup>10</sup>

True "body thinking" though involves using your physical body not only to gain knowledge but also to tap into related moods and emotions. In learning any physical skill, like riding a bike, our body has its own memory that can be activated when needed.

Empathetic thinking is attempting to put ourselves in another position. The Root-Bernsteins state, "Practitioners of



10. Jensen, Eric. "Teaching with the Brain in Mind, 2nd Edition, Chapter 4. Movement and Learning." ASCD. N.p., n.d. Web. 09 Dec. 2012.



# Models for Learning

every art, science, and humanistic profession use empathy as a primary tool, for it permits a kind of understanding that is not attainable by any other means.”<sup>11</sup> Whether students play simulation games, participate in history re-enactments, or pretend they are an animal being studied, embodied thinking has the ability to open new avenues for learning.

## My Experience with Embodied Thinking

I thought quite a bit about how to embody the topic of genre and tried to look at the idea from the reverse perspective. Throughout my explorations I had looked at genre from the perspective of a reader. In thinking about the tool of embodied thinking, I began to look at it from the perspective of a writer. To truly understand how a story fits into a particular genre, I felt it would be interesting to explore the process of creating a story within a particular genre.

So I decided to take on the challenge of writing a novel. November is **National Novel Writing Month**, also known as **NaNoWriMo**. Would-be novelists commit to writing a 50,000 word novel in 30 days (writing can only take place between November 1st and November 30th). On November 1st, I started that challenge and I also led my students through the **Young Writers Program** of NaNoWriMo. We were truly a classroom of novelists!

I quickly developed an understanding of story development that I don't think I could have had any

other way. In October, my students began thinking about their characters and we discussed that characters truly are what motivate us to read.

It's interesting because when you ask a person about a book, you usually say, "What's that book about?" not "Who's that book about?" Plot would seem to be the most important element, but when you start to plan a story, you realize the events can change, but the character is with you throughout the story. If you don't care about the character, who will care about what happens to them?

Yet, plot is important. I found myself with a wispy idea of a story that wouldn't solidify up until the last moments before NaNoWrimo began. I knew I wanted to write a fantasy and wanted it to be a fairy tale, but was unsure of the details. I imagined writing a retelling of a classic fairy tale, like Cinderella. I also toyed with the idea of writing a sequel to a fairy tale, something that would take place years after the original story, maybe even involving ancestors of the original characters. The problem was that I couldn't find a fairy tale that I wanted to retell or re-envision. I eventually decided I would need to create my own fairy tale.

In my novel there are plot holes, timeline problems, and probably even grammar mistakes, but a guiding tenant of NaNoWriMo is to silence our "inner editors" for the month. Revision can begin later. This idea gives a certain amount of freedom and ultimately

enhances creativity. My story doesn't have to be perfect and I am learning much about the fantasy genre by creating within the form. A story that is fantasy couldn't really happen, but it is my job as a writer to make readers believe it could. I need to help them suspend disbelief and find ways to help them picture the characters and places that are in my imagination.

My students also were able to “think like writers” and wrote amazing stories within a variety of genres. Our experiences are shared on our [class blog](#).

## Examples of Embodied Thinking

- **Embodied Math** using technology
- **Storytelling using Minecraft**

## Modeling

Modeling is transforming our understanding of an object from one level of conception to another by representing an idea in a form that can be experienced by the user.

One aspect of this tool is dimensional thinking or translating a subject from one dimension into another. When we take a photograph, we are translating what we see from three-dimensions into two-dimensions. Scaling a concept in size or time, like creating an interactive timeline, is another way to think dimensionally.

Models themselves can be created to serve many purposes. A *representational* or *physical* model can be made to observe real objects, *functional* models can be made to study

11. J Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 187.

# Playful Exploration

operations, *theoretical* models can be used to explore processes, and *imaginary* models can be invented to hypothesize about concepts that can't be seen directly.<sup>12</sup>

Modeling is a higher-order thinking skill because to create one students must have a deep understanding of their subject and the ability to observe and correct errors that become apparent. It combines the tools of perceiving, abstracting, and even embodied thinking and is truly a multi-faceted tool.

## My Experience with Modeling

I wanted to explore the digital story and how different technologies allow the possibility for readers to have a more immersive experience than simply reading text on a page. I have made book trailers with my students to have them share their content knowledge, but wanted to explore the idea of character as a building block for a narrative.

Something I had not explored previously was the use of 3D virtual worlds as a tool for digital storytelling. I find it quite interesting that web platforms like *Second Life* were actually inspired by literature and storytelling. In the 1992 novel *Snow Crash* by Neal Stephenson, the author was the first to coin the term "avatar" and describe a world called the "Metaverse" that people entered via a computer.

I decided to explore a virtual world building application that I already had access to, *The Sims*. I used *The Sims 3* to

model the protagonist of my NaNoWriMo novel. As I focused on character development, I thought making a model of my character would be a useful tool in writing. Characters live in our imaginations, but by creating a virtual version of my character I could gain a stronger understanding that would be helpful in story generation. I could also give the Sim traits of my character and watch how she interacts with others if I desired.

Virtual tools such as these are not out of the reach of students but perhaps they have not thought to use them in this way. I had a few students who based their NaNoWriMo novels on virtual worlds like Minecraft or worlds of their own creation. For projects like those, actually playing the game might be a great generator of new ideas for their stories.

## Examples of Modeling

- Explore the [Scale of Universe](#)
- 3D explorations in [Geometer's Sketchpad](#)

## Playing

Playing is activity done for the joy and curiosity of the exploration without regard for success, failure, or achievement.

That doesn't mean play can't be purposeful. Play is a great way for students to ask and answer questions. What happens when you mix this and that? When students have learned enough to know the "rules" of their

content area, then they can explore what might happen when one tries to bend or break the rules. Often, that is how new discoveries are made.

There are three types of play. *Practice* play can strengthen various mental skills. Looking for geometric patterns in the real-world, solving crossword puzzles, playing with a musical instrument are all examples of skill-building play. Another form of play is *symbolic* play in which students can use one thing to stand for another. Role-playing and modeling are examples of this type of play. Finally there is *game* play. Simulations, board games, and made-up games are all ways students can enhance their playful thinking.

Physicist Richard Feynman is noted for his playful attitude in life and towards his subject area. At one point in his career, he lost interest in physics and had a realization that revitalized him. "Physics disgusts me a little bit now, but I used to enjoy doing physics. Why did I enjoy it? I used to play with it. I used to do whatever I felt like doing -- it didn't have to do with whether it was important for the development of nuclear physics, but whether it was interesting and amusing for me to play with....So I got this new attitude....I'm going to play with physics whenever I want to, without worrying about any importance whatsoever."<sup>13</sup>

Play is another form of thinking that brings fun and engagement to the process of acquiring knowledge.

12. J Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 229.

13. J Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 250.

# Bringing It All Together

## My Experience with Playing

The activities I developed around embodied thinking and modeling were where I experienced the greatest sense of play. In exploring the topic of genre from the domain of a writer instead of a reader, I moved from consumer to creator of words. That change gave me a lot of freedom.

My work on the modeling project was particularly enjoyable because it involved playing a game. By creating a model of my character using *The Sims 3*, I not only had a visual representation, but I could experiment and control the character in the Game mode. Although I created my model to help illustrate elements of my story, someone could certainly do the opposite by creating a character and then using his or her virtual life as the basis for writing.

I often use games with students as a way to review the material learned, but in trying to apply the tool of play differently, I thought of using a game to introduce a topic. I developed a playful activity to introduce genre using a relay race, ala *The Amazing Race*, and will use it to kick off my **Genre Passport** project for next year.

Each group will start with an empty bag and one envelope leading them to a backpack full of books from my classroom library. The envelope will also give them a clue to which genre they are looking for in that backpack. Each time they think they have found a book of the correct genre, they will need to come back to me to get the next clue.

When all the genres are found, we can make comparisons between books students identified within the same genre and come up with a list of common traits.

I think this activity will be playful and meaningful for my students. The relay element should be a lot of fun and the activity could lead to a fruitful discussion of the elements of genre and how some books may even fit in multiple genres.

## Examples of Playing

- **History of the Super Soaker**
- **Portmanteaus**

## Synthesizing

Synthesizing is thinking that unifies knowledge, emotions, and sensory impressions to transform understanding. It is a multimodal process that involves looking at information in a variety of ways.

Some individuals have the true ability to perceive sensory inputs through multiple paths. For example, when listening to music, they might visualize colors and patterns. Another individual may associate sound with taste. Associational or learned synesthesia can come from conscious awareness of multiple sensory impressions. Research suggests that about half of all young children have this ability, but only 5 to 15 percent of adults continue to experience it.<sup>14</sup> This suggests that something in our educative process causes us to narrow our perceptions and view the world in fewer dimensions.

To know and to understand are very different experiences and both are central to synthetic thinking. It is an active process that integrates what we perceive with what we know intellectually. This is the heart of creativity and innovation.

## Examples of Synthesizing

- **3D Street Art**

## A Synthesizing Education

In *Sparks of Genius*, the Root-Bernsteins state, “We desperately need synthetic minds. No major problem facing the world today can be boxed neatly within a single discipline or approached effectively by analysis, emotion, or tradition alone. Innovation is always transdisciplinary and multimodal. The future will depend upon our ability to create synthetic understanding by integrating all ways of knowing.”<sup>14</sup>

This is a call to action for education. It is not that we need to change *what* we teach, but we should change *how* we teach.

## 8 Goals for a Synthetic Education.

1. *Emphasize universal processes of invention rather than acquisition of facts.* Focus on developing an active understanding rather than just passive knowing.
2. *Teach intuitive and imaginative skills.* All students should learn to abstract, empathize, transform and recreate their learning into other forms.
3. *Implement a multidisciplinary education that gives equal weight to arts*

14. Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 301.

15. Root-Bernstein, Robert Scott., and Michèle Root-Bernstein, p. 314.

# A Pioneering Education

and sciences. The imaginative tools used in the arts are needed just as much in mathematics, humanities and the sciences.

4. *Integrate curriculum by using a common language for innovative thinking.* Using the tools for thinking in all disciplines will allow students to move away from a fragmented learning experience.

5. *Emphasize transdisciplinary applications of disciplinary learning.* We should help our students think as artists and engineers rather than artificially boxing disciplines.

6. *Share models of creative thinkers.* Make examples of innovative thinkers and problem-solvers visible in the classroom.

7. *Present ideas in multiple forms in all disciplines.* By providing multiple ways of knowing, students may grasp ideas in deeper ways.

8. *Create a “pioneering education” intent on creating imaginative generalists.* Giving students the skills and tools to be innovative thinkers, will equip them to pioneer new ideas and develop outcomes previously unimagined.

These are lofty goals but it is possible to implement change even at the classroom level. As part of my recent experiments in creativity, I have kept a creativity journal to record my experiments with trying to expand my

thinking. In Creativity: Flow and the Psychology of Discovery and Invention, Mihaly Csikszentmihalyi describes several ways to enhance personal creativity that are concrete and executable.

For example, an exercise in divergent thinking would be to “produce as many ideas as possible.” In a classroom, this is an activity that could be applied to any discipline from writing to physics. By combining

Csikszentmihalyi’s creativity tasks with the seven tools advocated in this white paper, an environment of innovation can be fostered in the classroom.

In looking ahead, I am inspired by teachers such as Josh Stumpenhorst who uses “**Innovation Days**”

with his students to foster creative thinking. This is a great way to begin to model creativity in the classroom. In my class, I plan to tell students that they will have some time (a class period or perhaps more) to work on something related to our subject but they will need to share with me and the class a product. Will they choose to write a story or poem? Build a web page on a favorite book? Who knows, but I’m curious to see what will happen. When people are allowed to pursue their interests and talents, sometimes interesting and unexpected things can happen.

“We must forge a pioneering education, whose purpose is to produce the imaginative generalists who can take us into the uncharted future.”



## Conclusion

The seven tools for creative thinking presented in this white paper have great potential for changing how our students learn and for preparing them to be innovator thinkers. The tool of **Perceiving, Patterning, Abstracting, Embodied Thinking, Modeling, Playing, and Synthesizing** can be taught and practiced by learners of all ages. Although the importance of fostering creativity in children is understood, not many concrete examples for how to do this exist. I have argued that creativity is not simply a trait, but it is a skill that can be enhanced by practicing thinking in multimodal and divergent ways. As teachers and parents, we can encourage children to broaden their minds by exposing them to multiple forms of knowing. Using the seven tools for creative thinking in the classroom is a step towards making that a reality.

Almost as important as teaching student how to learn is providing ample time for exploration and contemplation. Thinking can't be rushed and sometimes connections are made when least expected. It is important that teachers allow students time to explore and play in their learning. The Root-Bernsteins advocate that parents give toys to children that allow them to create rather than play in a set or predetermined way. "Such prefabricated experiences stunt the poetic and artistic imagination. They also crimp the inventive mind, for the child who never has to make or make do will never perceive the possibilities of materials or the purposes in objects originally designed for some other use. Only when we see things for what they *might be* and not just for what they are can we begin to use them in novel ways." (p. 156) The "creative resources" addendum gives a few suggestions on toys and websites that may provide that open-ended play that can enhance creativity.

In conclusion, I have spent a great deal of time in the past few months exploring the creative tools modeled in [Sparks of Genius](#), but I can truly say that my journey is just beginning. Now that I know the tools, I can move towards truly *understanding* them through further application in my teaching. It has been an eye-opening journey so far, but I am looking forward to seeing where it can take me and my students.

## Creative Resources

### About Creativity

**Bloom's Digital Taxonomy**

**Bloom's Revised Taxonomy** image by Kathy Schrock

**Chapter 14: Enhancing Personal Creativity** from [Creativity: Flow & the Psychology of Discovery & Invention](#) by Mihaly Csikszentmihalyi

**Seeing the Future Synesthetic** by Laura Seargeant Richardson

**RSA Animate - Drive: The Surprising Truth about What Motivates Us** by Daniel Pink

**Everything is a Remix** - Blog about web video series

### Tools for Creative Thinking

**One Word** - Daily creative writing prompts

**SCAMPER** - Tool for creative problem-solving

**See If You Can Draw (A Drawing Game)** - KinderArt lesson plan on creative thinking and art

**Synesthesia Experiment** - *Neuroscience for Kids* website

### Making

**Child's Own Studio** - Order custom stuffed animals based on your child's art

**Kerpoof** - Web-based art and digital story maker

**Makey Makey: An Invention Kit for Everyone**

**Scratch** - Programming language for kids by MIT Media Lab

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