



Inspiring a Generation to Create: Critical Components of Creativity in Children

Executive Summary



Center for
Childhood Creativity
at the Bay Area Discovery Museum

“This wondering and openness is something all of us recognize as the birthplace of creativity...You have to be curious—and take the risk of learning things you never anticipated.”¹

There have been many conversations about whether or not creativity can be taught—is it a fixed trait or a renewable resource, capable of being cultivated and replenished?

What is certain is that creativity is increasingly recognized as a key to success in our rapidly changing world. It allows us to recognize needs, to see challenges in new light and to problem-solve with fresh approaches.

Fortunately, research is showing that there is a path to becoming creative. Creativity can, indeed, be cultivated.

So, how do we get there? What can we do to support our children to reach their creative potential?

Our latest white paper, *Inspiring a Generation to Create: Critical Components of Creativity in Children*,

published in partnership with Disney Citizenship, presents a new framework for stimulating creativity in children ages 6–14. We reviewed over 100 academic studies from the past fifty years,² examining data from the fields of cognitive and developmental psychology, neuroscience, education and business management to identify the pathways to boosting creativity in children.

Our paper sought to answer two questions: *What are the processes or skills that are developing in children that contribute to their creativity? and, What environments, opportunities and types of adult and peer interactions foster the development of these skills?*

A Roadmap to Building Creativity

What emerged from our analysis is a new framework and set of influences to guide how

¹ Carol Dweck, <http://nilofermerchant.com/2013/09/27/do-you-trust-in-your-ability-to-grow/>

² Please refer to page 57 in *Inspiring a Generation to Create* for our reference list.

parents, educators and researchers think about and promote creativity. We propose seven critical components of creativity organized across three childhood developmental areas—cognitive; social and emotional; and physical. Below, we summarize our findings about these key developmental characteristics—**imagination & originality; flexibility; decision making; communication & self-expression; motivation; collaboration; and action & movement**—and invite you to review the full chart on page four.

An Open State of Mind

Research tells us that all children have creative potential but are heavily influenced and persuaded by outside environmental factors which can encourage or disrupt this development. The space and time for creative exploration, as well as the introduction of new ideas and novel experiences, need to be protected and cultivated through reinforcement by peers, parents and teachers. This is especially important before and during the “fourth grade slump” when children begin to experience more social pressure. Around this age, the ability to be spontaneous, flexible and confident enough to take risks may diminish.

Children are innately creative as manifested by the prevalence of **imaginary** playmates in the early years. Pretend play predicts later capacity for divergent thinking—generating many possible solutions—and original thinking. Similarly, children’s ability to be **flexible** in their thinking helps them to be open to different perspectives. This allows children to learn to synthesize new and old experiences to generate insight and build complex understanding.

One area of child development that has received little attention, but which is also a strong indicator of creative potential, is **decision making**. The decision-making process, which involves both divergent and convergent thinking—focusing on a finite number of solutions—is an expression of creativity as children demonstrate the ability to make evaluations and judgments. This independent and original thinking needs to be encouraged during the ages of 9 and 10 (the fourth grade slump), and studies have shown that

explicit instructions by adults can stimulate children to be intentionally creative, making wise choices about when and how to follow conventions.

A Supportive Environment

Inspiring a Generation to Create proposes that creativity is not an elusive talent but can be intentional, and therefore learned, especially if the environment supports its growth. Our paper shares research on the connection between creativity and self-efficacy, the belief in one’s ability to achieve a goal. Several studies point to positive feedback from authority figures, especially teachers, as a strong predictor of creative



“Creativity constitutes one of the highest forms of human expression. Innovativeness largely involves restructuring and synthesizing knowledge into new ways of thinking and of doing things...But above all, innovativeness requires an unshakeable sense of efficacy to persist in creative endeavors.”

(Bandura, 1997, p. 239)

Creativity is not a fixed quantity, but rather a renewable resource that can be improved and nurtured by optimizing the environment that allows an individual's creative potential to blossom.

self-efficacy, confidence and academic success. This self-determination is one of the catalysts of intrinsic **motivation**: if children are motivated to learn for the sake of learning and self-improvement, this growth mindset will allow them to be open to new possibilities and help them bounce back quicker from set-backs. Parents and teachers who support risk-taking and allow for autonomy will help children retain their intrinsic motivation for learning.

The growth of creativity is not limited to the classroom. Exercise, especially walking, has been connected to a burst in creative performance in adults. **Physical activity** has been linked to enhanced memory and positive academic performance by improving self-esteem. Interestingly enough, recent research suggests that creative individuals split their time between organized and unstructured sports as children. This is a reminder that direct instruction and open-ended exploration should be balanced across all developmental areas for children. Regardless, group activities and **collaboration** are an invaluable area where children can exercise empathy and perspective-taking to synthesize alternative viewpoints. Teamwork is a learned skill, one that adults should cultivate intentionally.

The **expression** of authentic, original ideas and feelings can only happen if there is room for creative exploration. The mind indeed acts like a muscle and needs to be flexed. To encourage this development, in our paper we provide research-based strategies and activities to foster ingenuity and inventiveness specifically for children ages 6–14, although these practical applications might appeal to all ages.



We encourage parents, teachers and others invested in positive child development to follow this framework and have fun with children using our suggested hands-on activities. If we want to raise the next generation of entrepreneurs, inventors and problem-solvers, we need to cultivate these critical components of creativity now.

For more information or to download the full paper, please refer to: www.centerforchildhoodcreativity.org

Our Mission

to ignite and advance creative thinking for all children.

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Components	Description
 <p>Imagination & Originality Imagine and explore original ideas</p>	<p>Creativity involves producing original ideas that are unusual or novel, and it sometimes involves combining two or more different concepts to create a new, synthesized idea. Children express their imagination and original ideas through pretend play and the creation of imaginary companions and make-believe worlds.</p>
 <p>Flexibility Maintain openness to unique and novel experiences</p>	<p>The interaction of intelligence and creativity often begins with the flexible combination and modification of prior concepts or strategies to produce new representations. Children can experience flexibility by seeing from different perspectives, remaining open to new and challenging experiences, or (especially as they become older) gaining awareness of how only seeing from a single perspective can limit their creativity.</p>
 <p>Decision Making Make thoughtful choices that support creative efforts</p>	<p>Discretion, judgment, and decision making play an important role in the development and expression of creativity for children. Decision-making skills require convergent thinking, which is critical to creativity because it allows individuals to refine ideas and to select the best possible answer from the ideas generated to solve a problem.</p>
 <p>Communication & Self-Expression Communicate ideas and true self with confidence</p>	<p>Communicating one's unique perspective plays a vital role in creativity by allowing individuals to express their feelings, ideas, and desires through language, art, and physical movement. A sense of confidence and connection to authentic feelings allows children to express their unique insights and thoughts with others.</p>
 <p>Motivation Demonstrate internal motivation to achieve a meaningful goal</p>	<p>Motivation is at the core of the developmental experience and inspires children to explore and satisfy their curiosity. When individuals are internally motivated, acting without the promise of a reward, they are more creative.</p>
 <p>Collaboration Develop social skills that foster creative teamwork</p>	<p>Collaboration allows for the exchange of ideas among children as they work to find a solution for a problem or project. Working together towards a shared goal fosters perspective-taking and provides a chance for children to explain and expand their thinking in new ways.</p>
 <p>Action & Movement Boost creative potential through physical activity</p>	<p>Exercise and physical activity are associated with better focus, enhanced memory, and greater ability to learn. Action and movement stimulate the building blocks of learning in the brain, and regular exercise can act as a cognitive enhancer to promote creativity.</p>

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