



# Creativity

## At a Glance

### What is Creativity?

**Creativity** is a skill that is often misunderstood, so, to begin, creativity is not:

- Just for artists, writers, painters, or other artistic pursuits
- A fixed trait that only some possess, beyond growth or measurement
- Just waiting for inspiration to strike
- Limited to groundbreaking discoveries that revolutionize a field

Instead, creativity, a skill needed to flourish and sought after by the working world, is often defined as the **production of ideas that are both novel and useful**. While creativity depends on many factors, some of which are intrinsic, research demonstrates that certain aspects can be taught through practicing skills like brainstorming and utilizing design-thinking protocols.

### In the age of AI, which aspect of Creativity should be emphasized?

For each competency, a modern emphasis is determined based on the relative importance of the competencies in an AI landscape, as well as the potential for the competency (and its subcompetencies) to be automated in an age of AI. Creativity remains an inherent human capacity that can be augmented through synergy between human inspiration and technological tools.

In the age of AI, education must **emphasize imagination**. While AI can create via analogy and extrapolation, humans can leverage their unique imaginations to draw inspiration from personal experience, which AI lacks. Keep in mind that people do need to experiment with a number of iterations before they find a true innovation, which is accomplished via analogy and extrapolation – which is similar for AI.

### What other words and concepts are associated with Creativity?

Originality, Inspiration, Ingenuity, Inventiveness, Vision, Idea Generation, Cleverness



## How can I best teach Creativity?



Tips to follow...	Pitfalls to stay aware of...
<p>The most effective ways to teach creativity center around problem solving and divergent thinking. Have learners <b>get comfortable generating many imperfect ideas</b>, even if some feel like “copying.”</p>	<p><b>Common but ineffective strategies</b> to teach creativity include unstructured free time, imagery training, and impersonal analogies.</p>
<p>Your attitude matters. <b>Reframe mistakes and successes as opportunities</b> to consider new directions. Humor, play, and enthusiasm encourage learners to take more risks.</p>	<p>Creativity is <b>not limited to idea generation</b>. Creativity also encompasses narrowing and refining those ideas.</p>
<p>Recognizing <b>goal constraints</b> (the problem) and <b>system constraints</b> (the parameters) can bolster creativity by avoiding the paralysis that accompanies too much choice.</p>	<p><b>Reconsider the removal of resource constraints</b> (e.g., giving extra time or materials) to increase creativity, although it can be tempting! Since these constraints also exist in real life, instead teach strategies for navigating them effectively.</p>

### To foster Creativity, use language such as:

- “**Design,**” “**invent,**” and “**imagine,**” because creativity is an active process.
- “**If time or resources were no hurdle, what would we do?**” or “**How many ideas can we come up with?**” to help learners free their thinking from constraints.
- “**What if we tried combining these two ideas to see what happens?**” or that begins with “**How might we?**” to push thinking into novel spaces.

### And when focusing on Creativity, avoid the following approaches:

- “**Stick to the given format; it's the only way to get a good grade.**” While this clarity is sometimes necessary for learners, know that it also removes an opportunity for learners to develop creativity in designing their own formats.
- “**That's not how you're supposed to do it.**” Instead, point out specifically where a learner may have missed a constraint in their design process, or ask what their thinking behind that process was to find a better way to support it.
- **Categorizing attempts as “successes” or “failures.”** Successful processes sometimes lead to failed outcomes and vice versa! Instead, be clear about what makes an effective process – the part of creativity that can be practiced.



## Subcompetencies

To create targeted learning experiences for creativity, teachers can use the following subcompetencies as specific learning objectives. Classroom exercises and activities then can infuse subcompetencies into student learning to create deliberate, explicit, comprehensive, systematic, and demonstrable areas for growth. All subcompetencies in the CCR Framework are identified by a brief code for shorthand (i.e., CRE1).

Subcompetency	Description
CRE1: Developing personal tastes, aesthetics, and style	Creating new ideas involves judgment calls about design decisions, which must come from an internal embodied sense of vision. To be creative, it is important to know how to <b>listen to that inner voice</b> .
CRE2: Generating and seeking new ideas	Creativity involves imagining possibilities, both on one's own and by seeking inspiration from other places. <b>The first idea is typically not the best idea</b> , and strong creators learn how to push further into novel spaces.
CRE3: Being comfortable with risks, uncertainty, and failure	Since creativity involves novelty, it also involves leaning into the risk and uncertainty <b>associated with trying something new</b> .
CRE4: Connecting, reorganizing, and refining ideas into a cohesive whole	Creativity involves moving ideas from one context to another in novel ways. To meaningfully combine and recombine information, it is necessary to <b>organize and refine ideas around a central theme or idea</b> .
CRE5: Realizing ideas while recognizing constraints	This is part of the "grunt work" stage of actually making things happen. Narrowing creative ideas based on limitations of the real world is a necessary step in <b>bringing an idea into reality</b> .

## Growth Rubrics

The growth rubrics on the following page are a synthesis of the global research body on creativity and are designed to provide an opportunity for formative reflection on a competency based on performance in a specific context. They are not meant to be holistic or measure the worth of an individual in a high-stakes way, but rather to enable dialogues between educators and learners, creating space for feedback and opportunities for future improvement. **The rubrics are not age-specific, and progress through the levels will be slow and vary greatly depending on the context of the task.**



CRE1: Developing personal tastes and aesthetics			
Level I	Level II	Level III	Level IV
I see most things as all good or all bad without much granularity.	I know what I like or dislike, even if I can't pin down why.	I know my style or approach and try to do things that fit within my preferences.	I try to expose myself to new things to allow my tastes to evolve and refine.
CRE2: Generating and seeking new ideas			
Level I	Level II	Level III	Level IV
I use the first reasonable idea I find.	I look for ideas online or from friends and choose the one that seems best.	I generate multiple ideas, even if I think I have a really good one and know I'll have to reject some.	I generate so many ideas that it is hard to pick just one.
CRE3: Being comfortable with risks, uncertainty, and failure			
Level I	Level II	Level III	Level IV
I stick to the way I've always done things to avoid failing.	I prefer to work with the familiar to avoid risk, but I can move past failure if I need to.	I accept uncertainty and am willing to take a risk so that I can learn from the experience.	The only way to grow is to take a risk, get feedback, and learn from the experience.
CRE4: Connecting, reorganizing, and refining ideas into a cohesive whole			
Level I	Level II	Level III	Level IV
I see different fields and subjects as separate worlds that can't be connected with a common theme.	I can categorize ideas, but sometimes notice pieces feel out of place in a creative product.	I iterate my creative products by adding and removing elements to create cohesion.	I look for non-obvious connections between ideas and try to keep creative products thematically coherent.
CRE5: Realizing ideas while recognizing constraints			
Level I	Level II	Level III	Level IV
My ideas generally stay in my head because real world constraints are too limiting.	I attempt to realize my ideas, but they often remain incomplete or don't meet my expectations.	I have tools to follow through with my ideas despite constraints and can produce a product.	I successfully bring my ideas to life and enjoy the challenges that may arise in the process.