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## Adaptive Creativity and Innovative Creativity



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### Synonyms

[Blend](#); [Divergent thinking](#); [New](#); [Originality](#)

### Creativity and Innovation

Creativity is doing or making something unique and useful, and the end result of this process is innovation. No innovation is truly *new* because everything created is an extension or combination of ideas that already exist. Innovation results from creators who are open-minded and thus able to recognize needs and make connections between unrelated diverse ideas or things that others do not. They apply existing ideas in unique ways, for example, Johannes Gutenberg (1398–1468) applied the techniques of a wine press to create his printing machine; the Wright Brothers, Orville (1871–1948) and Wilbur (1867–1912), applied their knowledge of bicycle manufacturing to the airplane; and Google’s founders, Larry Page (1973–) and Sergey Brin (1973–), applied a ranking method used for academic articles to create an Internet search engine. These creators did not

make something new, but their attitudes and past knowledge and experiences enabled them to apply existing solutions to new problems, and the results changed the world (Kim 2016).

Innovation requires taking small steps to connect the dots between existing ideas. This piecemeal process may not seem glamorous, but innovation results from synthesizing the essence of unrelated existing ideas or things. For example, Apple created the iPhone by combining dissimilar *existing technologies* in unique ways. Samsung then analyzed and synthesized the essence of *the iPhone* and transformed it into their own version by improving some aspects of it. Both are examples of innovation. Yet, based on the degree of uniqueness, innovation ranges from adaptive creativity to innovative creativity. *Adaptive* creativity is making something that already exists more useful by solving or refining its current problems or practices. It is less unique than innovative creativity, and it leads to more incremental and evolutionary innovation. *Innovative* creativity is doing or making something more unique than adaptive creativity. It leads to more radical and revolutionary innovation. In the iPhone example, Samsung went through a more adaptive creative process, whereas Apple went through a more innovative creative process. Innovative creativity can change the world, or an entire field, like how the iPhone changed the whole phone industry, and arguably the way the world interacts with technological devices (Kim 2016).

## Similarities Between Adaptive Creators and Innovative Creators

Both adaptive creativity and innovative creativity require the initial spark of curiosity. Adaptive and innovative creators are both intensely curious and open to identifying new or solving existing problems. Neither types of creativity require high levels of intelligence, but creators must develop early and deep expertise in their curiosity, preference, or interest. Expertise is the foundation of the creative process to innovation. Early expertise development contributes twice as much to innovation than IQ scores do. Innovation requires thorough knowledge of the subject matter, but not necessarily formal education. Most eminent creators did not achieve high levels of education. For example, Alexander Graham Bell (1847–1922) was educated mostly at home by his father; Thomas Edison had only 3 months of schooling and was taught by his mother at home; Abraham Lincoln also had less than a year of schooling; Benjamin Franklin's (1706–1790) schooling ended when he was 10 years old; Isaac Newton (1642–1727) found school boring and never advanced beyond his bachelor's degree; both Steve Jobs (1955–2011) and Steve Wozniak (1950–) dropped out of college. However, they were all driven by their fierce desire to learn about their subject of curiosity or interest. They developed a strong love for reading and learning, which led them to continuously educate themselves. More importantly, high formal education often institutionalizes and inhibits creative thinking. It especially limits uniqueness, and thus innovative creativity, by preventing creators from accepting different ideas or looking at things in a different, rebellious light.

## Differences Between Adaptive Creators and Innovative Creators

The CATs model embodies the three steps that lead to innovation: cultivate creative **C**limates; nurture creative **A**ttitudes; and apply creative **T**hinking skills. Creative climates are creators' physical and psychological surroundings. The 4S

climates (soil, sun, storm, and space) impact how creators think and behave, which can either encourage or discourage their creativity development. First, the soil climate provides creators with diverse resources and experiences; second, the sun climate inspires and encourages them; third, the storm climate provides them with high expectations and challenges; and finally, the space climate provides creators with the freedom to be alone and unique, from which their unique ideas spring.

In order to apply creative thinking skills to innovation, both adaptive and innovative creators must experience all of the four climates which will nurture their creative attitudes. Yet, innovative creators experience more space climate than adaptive creators. Adaptive creators often come from more *conventional* and mainstream backgrounds than innovative creators. Innovative creators often come from more *unconventional* and less traditional familial, educational, professional, economic, or cultural backgrounds than adaptive creators. They experience life as outsiders and do not relate to the *We* identity of the mainstream society, which causes them to be more non-conforming and defiant than adaptive creators. They are outsiders who experience two different norms or traditions. Their attempts to conform to the mainstream society cause them to suffer from insecurity and self-doubt. However, their experience as an outsider is also what enables their unique creative thinking. They are not necessarily self-confident, but they compensate their outsider status by developing their self-efficacy (true confidence) in their subject and/or field. They are willing to take great risks because they feel as though they have nothing to lose, and this facilitates the creative process for innovative creativity. Further, innovative creativity deviates from the norm or the tradition more than adaptive creativity. In order to be useful, creativity is constructive, and in order to be unique, it is also destructive. Uniqueness is defiant in nature; therefore, the more unique a creation is, the more it engenders opposition or resentment. Innovative creators not only take more risks, but they act more defiantly toward governing or controlling powers than adaptive creators.

Adaptive creators often come from more stable family backgrounds than innovative creators. Innovative creators come from more unstable or less fortunate family backgrounds. They endure misfortunes, traumas, adversities, and/or hardships in childhood or adolescence, such as a family failure or economic instability or financial crisis, physical or mental disabilities, or the death of close loved ones. They overcome their misfortunes, traumas, adversities, or hardships by embracing them as temporary challenges and learning experiences and fully committing themselves to their goals. This outlook and commitment enable them to complete their long and bumpy creative process. While overcoming these obstacles in their storm climate, innovative creators seek refuge in the space climate and partake in the creative process and expression alone. They take the time to think about themselves and their situations, but they also think about others and others' situations. This nurtures their compassion, leading them to empathize with others in a meaningful way. Thinking in-depth about others and the worlds' injustices also nurtures their big-picture thinking, self-reflection, and even daydreams. Their time in the space climates motivates them to use their creative thinking skills to help the larger community, nation, and the world, which leads to radical and revolutionary innovation.

## Conclusions and Future Directions

Creative thinking skills consist of inbox, outbox, and newbox (ION) thinking. Inbox thinking is narrow and deep (inside the box) to gain or evaluate knowledge and skills. Expertise is developed during inbox thinking using lower-order thinking skills such as memorization, comprehension, and application. Inbox thinking also includes higher-order critical thinking skills such as analysis and evaluation, which are required to select useful information. Outbox thinking is quick and broad (outside the box) to imagine diverse possibilities. It helps creators take a broad field of view to imagine many, diverse, and unique approaches to a problem or opportunity. Outbox thinking

includes higher-order thinking skills such as fluent, flexible, and original thinking. These skills are essential to generate unique ideas.

It is typical for creators to use either more inbox thinking or outbox thinking. Adaptive creators use more inbox thinking than outbox thinking. They often get superior grades in school, which is indicative of their reliance on inbox thinking. Adaptive creators are persistent and use logical and systematic thought processes. This helps make their creations useful, but their persistent mind lacks flexibility. Innovative creators use more outbox thinking than inbox thinking. They often get inferior grades in school, which can be explained by their reliance on outbox thinking. They think spontaneously and use random and subconscious thoughts without giving much thought to practicality. This helps make their creations unique, but their flexible mind lacks persistence. Adaptive creators who only rely on inbox thinking become boring technicians. Innovative creators who only use outbox thinking become frustrated dreamers. Neither of these two types of creators will alone achieve innovation because the creative process to innovation requires newbox thinking, which combines elements of both inbox and outbox thinking. Newbox thinking includes highest-order thinking skills such as synthesis, transformation, and promotion. Consequently, cross-pollination between adaptive creators and innovative creators – with different life experiences, strengths, and thought processes – will increase the chance of innovation. Cross-pollination is formal and informal face-to-face interaction, networking, sound boarding, collaboration, and collaborative competition. Through cross-pollination, adaptive creators and innovative creators share, generate, combine, adapt, and build on each other's diverse knowledge, skills, and experiences. By cross-pollinating, they can magnify their own and others' strengths by learning and growing from each other's expertise. Taking adaptive and innovative creators out of the equation, cross-pollination can help *all* future creators connect ideas in ways they would never have imagined. Homes, schools, businesses, and society must recognize the value of cross-pollination.

**Cross-References**

- ▶ Creative Attitudes: The 4S (Soil, Sun, Storm, and Space) Attitudes
- ▶ Creative Climates: The 4S (Soil, Sun, Storm, and Space) Climates
- ▶ Creative Process: The Apple-Tree Creative Process (ACP)

- ▶ [Creative Thinking Skills: Inbox, Outbox, and Newbox \(ION\) Thinking Skills](#)
- ▶ [Reading for Creativity](#)

**References**

- Kim KH. The creativity challenge: how we can recapture American innovation. Prometheus Books, Amherst, New York; 2016.