



# You are creative...

## the 21<sup>st</sup> century way of thinking about creativity & innovation

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*A man who carries a cat by the tail learns something he can learn in no other way.*  
Mark Twain

### Introduction

People recognize the need to think differently - to have new ideas and make new decisions - yet there are many obstacles that stand in the way. We are now in the post-industrial age, continuing to shift towards networked operations, shared leadership, and collaboration where the 'both/and' approach is often a better choice to use for problem solving today than the 'either/or' mentality of years past.

Today's CEO's believe creativity is the skill most required by leaders to steer within the increasing uncertainties of business and life in the 21<sup>st</sup> century, as reported in the 2010 IBM Global study of 1500 CEO's<sup>1</sup>.

Survey respondents said they believe successfully navigating an increasing complex world will require creativity to:

- Make more business model change to realize their strategies and invent new ones based on entirely different assumptions
- Invite disruptive innovation and encourage others to drop outdated approaches and make decisions that alter the status quo
- Change the enterprise in unheard of ways to better set the stage for innovation to help them engage more effectively
- Score higher on innovation as a crucial capability.

Our 21<sup>st</sup> century creative leaders then, will demonstrate and provide support for their people being open to new ideas, tolerating ambiguity, exercising curiosity, using imagination, changing perspectives, reframing problems as opportunities, breaking patterns, realizing a passion, and being willing to experiment and take risks to push the boundaries to set new frontiers.



Jasminne Yip.

Creative thinking and the behaviours associated with it lead to successful innovation; yet these skills have not generally been taught nor reinforced as appropriate for meetings and day-to-day activities. These old practices must be updated with current knowledge so more people will feel encouraged and welcome to engage in creating new futures.

This can be accomplished through learning and using skills associated with creativity and innovation processes, acknowledging the influence of emotions on how the brain operates to scan for new connections and new perspectives, and appreciating how environment supports (or not) the creative capabilities of teams, organizations and individuals.

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<sup>1</sup> <http://www-03.ibm.com/press/us/en/pressrelease/31670.wss>

## Purpose

The purpose for this paper is to transition you into 21<sup>st</sup> century thinking about creativity as fuel for future innovation. Research highlights from the field of creative studies, sourced from the past 50 years, is presented to modernize generally held false and inhibiting assumptions from the past. The intention is to help you make new decisions that matter by tapping into a rich resource that has until now has been largely underfed and overlooked.

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## Debunking Age-Old Beliefs about Creativity

### Who is creative? You'll be surprised.

*When creativity research began in 1950 after Dr. J.P. Guilford's address to the American Psychological Association, psychologists began to create measures based on who they felt were creative. Artists, scientists, writers, and architects were studied to determine what characteristics they shared. Research in the mid-1970's reshaped this line of investigation, replacing the question of 'who is creative and how can we teach people to be like them?' to 'how are you creative and how best can we help develop your abilities?'*

Creative people were thought of as disruptive, quirky and unruly until the mid 1970's when publication of findings provided a different perspective. Instead of regarding these as qualities needed for creativity to occur, they were reframed as a style of behaviour.



Dr. Michael Kirton redefined creativity as the capacity to initiate change, and provided evidence of two styles. People of either style, he said, initiate change and they do it in unique ways: one is disruptive and revolutionary; its compliment is incremental and evolutionary (Kirton, 1976). He also showed that the style used is not necessarily related to that person's ability to make change happen. That is, the kind of change that is made is not related to the amount of creativity a person has.

As a result of his pioneering work the question 'how, or in what ways, are you creative?' replaced the earlier question of who is and who is not.

#### 21<sup>st</sup> century understandings and implications:

- Everyone is capable of initiating change, and in different ways, which means everyone has creative capacity.
- Both evolutionary and revolutionary creativity are welcome, and are appropriate for certain situations.
- Sometimes a step-by-step improvement approach is warranted; at other times game-changing radical change is required.
- When you ask for creative thinking from the people with whom you work, identify what KIND of creativity you want. Using the phrase 'out of the box' thinking means different things to different people. It's important to be as clear and specific as you can – are you looking for a game change, or an improvement, or both?

### I'm not creative. Hm. How are you defining its scope?

*Creativity wasn't talked about in general circles until the 1990's and many today continue to believe they are not creative because they cannot draw, or are not born into a creative family. There's another reason as well, with regards to scope of influence.*

Up until the 1980's reports on creative people tended to be among the eminent, such as Mozart, Einstein, and Picasso. As a result many believed that creativity belonged only to well-known influencers. Today's Steve Jobs (Apple), and Mark Zuckerberg (Facebook) may fit into this category because they change culture. In the field this is referred to as 'big-c' creativity.

Another type, ‘*little-c*’ creativity defines a smaller scope. ‘*Little-c*’ creativity describes new thinking used day-to-day, during idea sessions and when problem solving occurs (Amabile, 1983; Kaufman and Beghetto, 2009). ‘*Little-c*’ creativity may not change the culture of the world, or an industry, it may however make a big difference in a team or organizational environment.

### 21<sup>st</sup> century understandings and implications:

- People who do not consider themselves capable of ‘*big-c*’ creativity may resist acknowledging their capacity because they don’t feel their ideas change the world. When they discover that ‘*little-c*’ creativity also counts, they are more likely to engage.
- When asking people to use their creativity to make a change, clearly identify the scope. Different kinds of creativity methods and efforts are used to effect different kinds of change.

## You can’t learn how to be creative. Yes, you can.

*Because creativity was associated with the arts or inheritance many people believed they were not creative and could not learn the skills to use it deliberately, say in creative problem solving. Attitudes shifted over the past 50 years. Scholars define creativity as thinking and behaviour that results in novel and relevant outcomes in any field of endeavour, and we know those skills can be learned.*

Toward the end of the 1980’s mental skills associated with creativity were identified. For example, one is generative thinking, listing many options before settling on a decision. As Nobel Laureate Linus Pauling is often quoted, “The best way to have a good idea is to have a lot of ideas.” Basadur and Thomson found that better results occur when many options to solve a problem are tendered than when only one or a few are considered (1986).



Figure 1 Creative Problem Solving Thinking Skills Model (Puccio et al., 2007).

The International Center for Studies in Creativity investigates and teaches creative problem solving (CPS) methods and has since its inception in the 1970’s. Its continuing research to improve CPS performance newly reveals seven specific thinking skills for effective creative problem solving: Visionary thinking, tactical thinking, diagnostic thinking, ideational thinking, evaluative thinking, and contextual thinking. (Puccio, Murdock and Mance, 2007).

As well as teaching and supporting divergent and convergent thinking in each of the CPS stages – assessing the situation, exploring the vision, formulating the challenge, exploring ideas, formulating the solution, exploring acceptance, formulating the plan - thinking skills are taught, practiced and supported for development. Affective orientations are included as well: acceptance of risk, openness to new ideas, curiosity, and tolerance of ambiguity, among others. (Torrance, 1979; Puccio et al., 2007)(See Appendices A and B for descriptions of these skills).

Earlier work shows proficiencies associated with creativity and creative problem solving are teachable, trainable, and accessible to anyone who wants to learn or use them (Puccio, Firestien, Coyle and Massucci, 2006).

**21<sup>st</sup> century understandings and implications:**

- Skills associated with creativity can be taught and learned.
- Skilled facilitators are able to work with people to use their imagination, access new perspectives, and make new and different decisions that are meaningful.
- It's helpful to practice using the skills outside of a pressured environment, just as athletes train before a competition.

**People in your environment influence your creativity. That includes leaders.**

*The people context and conditions influence engagement, the quality of thinking and the likelihood of turning new ideas into sustainable innovations.*

The social milieu or climate within which people operate became an area of investigation in the 1990's with insightful results: we now know that day-to-day interactions influences people's creativity.

Other's attitudes and behaviours while engaged or leading task or project were shown to be important influencers on creative and innovative performance and outcome (Ekvall, 1983; Amabile, 2005). Some measures for a climate that supports creativity and innovation involve these factors: leader behaviour and management practices, organizational encouragement, resources, work pressures, and attention to outcomes that are creative and productive. Others include: autonomy, how new ideas are treated, diversity of views, and conflict.

**21<sup>st</sup> century understandings and implications:**

- Creative thinking is fostered in an environment that supports people being at their best.
- Paying attention to the human dynamics of the people engaged in problem solving scenarios is important.
- Leadership that supports creative thinking as well as adequate resources (time, funding, and people) must be present for innovation to occur.
- Before asking people to use their creativity, make sure they have the resources available that will support them.

**How you feel influences your creativity**

*Creativity results from a restlessness to make a change. How people feel impacts their openness and ability to consider different options.*

At the turn of the 21<sup>st</sup> century, and building on earlier climate studies, research revealed that people have greater access to their creativity when they feel satisfied, intrigued, and optimistic. Feelings of dissatisfaction, pressure and anxiety were shown to influence closed thinking. When people are stressed, for example, they are less likely to consider new ideas, make new decisions or contemplate potential alternative solutions to the ones they already know. People who feel joy have more cognitive elements available from which to make associations that are relevant to the task at hand (Frederickson, 2004; Amabile, Brasade, Meuler and Staw, 2005).

How people feel can be related to how well their basic needs, ones that transcend all cultures and time, are being met. Those are subsistence, leisure, participation, protection, affection, autonomy, identity, understanding and creation (Max-Neef, 1991). People experience negative emotions when these needs are not satisfied, which impacts their openness to new ideas and willingness to consider new perspectives (Rosenberg, 2003; Segal and Mitchell, 2010).

### 21<sup>st</sup> century understandings and implications:

- How people interact with each other influences the feelings of positive emotions that support individual and team creativity.
- Facilitation outlines and meeting plans can be structured to address people's needs.
- During idea sessions, specific behaviours are reinforced so participants feel positive emotions, comfortable, safe, and welcome to contribute.
- People are more willing to accept change if they participate in creating it.

## About Creativity - Frequently Asked Questions

### What is the framework for studying creativity?

The framework used at the International Center for Studies in Creativity is the Systems Approach to Creative Change (Puccio, Murdock and Mance, 2005).

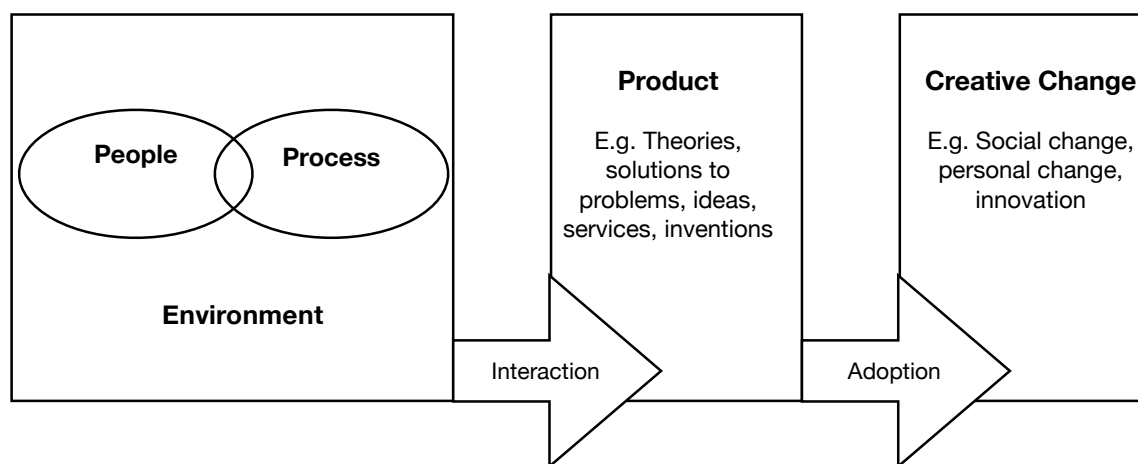


Figure 2 Systems Model of Creative Change (Puccio et al., 2005).

The interaction of the people, processes used and the environment result in a product – which could be a theory, a solution to problems, new services or new inventions. The adoption of the product by others results in a creative change or innovation.

Creativity professionals study these components within the system in depth. The person, the processes, the environment within which people operate and how they all interact are important considerations for consultations and designing learning programs for new thinking; the resulting product, its adoption by others and the leadership qualities which enable creative thinking to occur are equally essential elements.

## What's the relationship between creativity and innovation?

Many people use the terms creativity and innovation interchangeably, however there is a difference and a relationship between the two, which, when realized helps to clarify the activities and intentions of each.

1. Creativity involves using new ideas, including imagination, and making new decisions using new criteria, to bring about novelty that is useful.  
Innovation results in the production of a new reality.
2. Creativity is the idea.  
Innovation is the idea in action.
3. Creativity is personal – it results from a need to resolve a tension of dissatisfaction.  
Innovation is societal – for a new idea to come to fruition stakeholders' values and considerations must be factored in. As well, innovation requires other people beyond the creator of the idea to make sure it is built, works, and is sustained.
4. Creativity can occur without innovation  
Innovation cannot occur without creativity.

## How do the creative and the innovation processes compare?

The creative process can generally be mapped in four stages:

1. Preparation
2. Incubation
3. Illumination
4. Verification (Wallas, 1926).

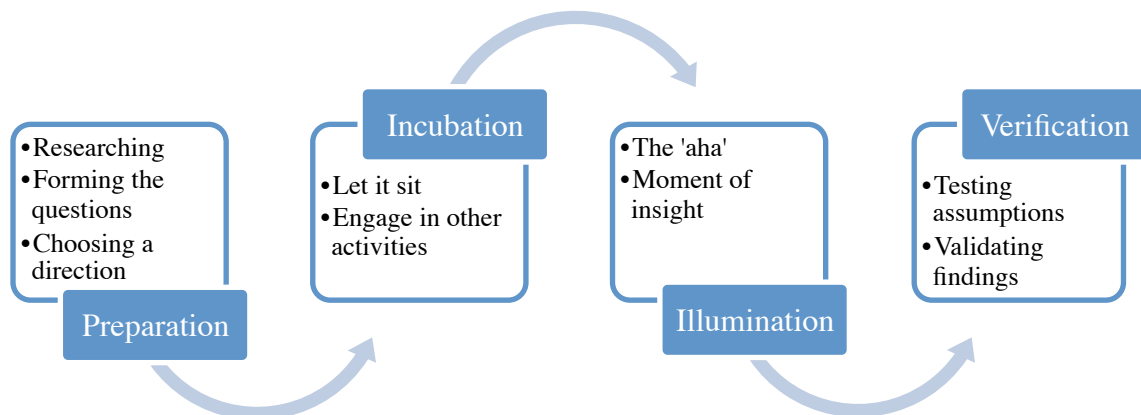


Figure 3 Creative Process (Wallas, 1926).

The Creative Problem Thinking Skills Model taught at the International Center for Studies in Creativity embeds this process in stages: assessing the situation, exploring the vision, formulating challenges, exploring ideas, formulating solutions, exploring acceptance, formulating a plan. It also accounts for the affective skills (see Appendices A and B for descriptions).

It is helpful be aware of the emotional investment people make as they progress through the stages of the creative process – as well as feeling elation, clarity, insight and enthusiasm, there are also moments of frustration, confusion and doubt. A skilled facilitator is aware of these and works with groups to mine the rich resources available for new thinking to occur.

**A basic four-stages of model of innovation includes,**

1. Idea Generation
2. Idea Selection
3. Idea Implementation
4. Idea Diffusion (Eggers and Singh, 2009).

Innovation processes are more detailed with regards to success metrics, benchmarks and overall idea execution and there are many approaches. Here's one example of an innovation model based on the six-sigma discipline.

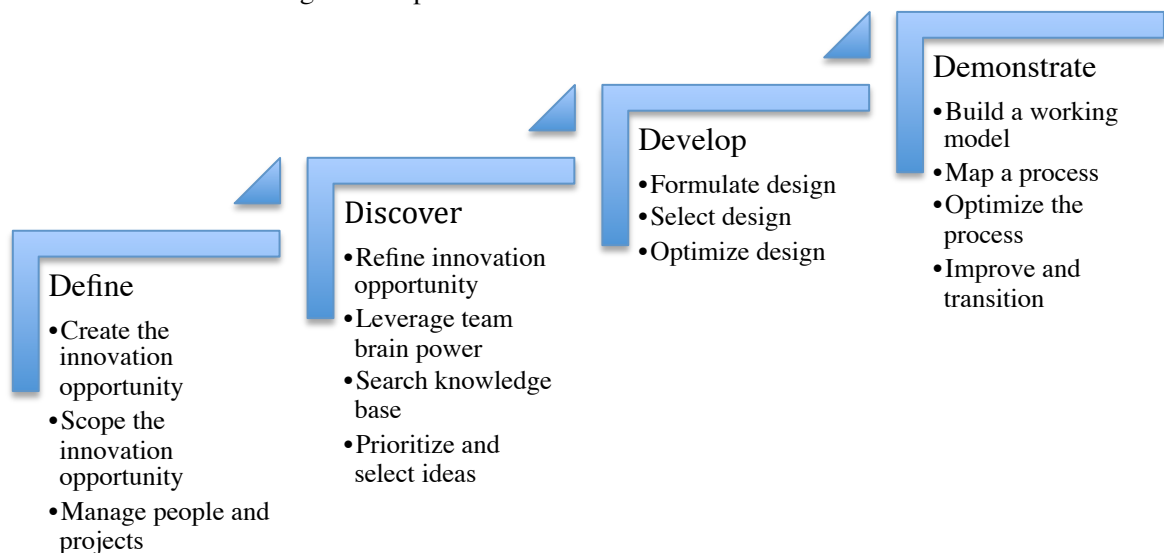
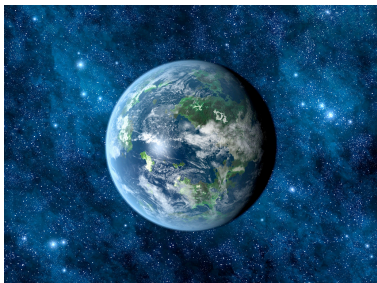


Figure 4 D4 Innovation Breakthrough Blueprint (Silverstein, Samuel and DeCarlo, 2008).

## The Value-Add of Innovation – a Story



footstep on the moon.

Years ago someone looked up to into the night sky and wondered, “wouldn’t it be great if we could get to the moon?” It was impossible at the time; the technology did not exist. Undeterred and passionate about the potential, the idea-holder spoke with others, eventually including the President of the United States, who agreed. Time, funding and other resources were provided. A rocket was built, then another. Test flights took place until it was safe to put a person into outer space. It took years of experimentation and effort to place a first human

Pictures were taken of Earth during those years that no one had seen before. Their viewing totally changed perceptions, attitudes and behaviours. You see, from that vantage point the earth



has no political territories, only clouds, continents and oceans. Through the execution of this creative idea a new reality and understanding of life on the planet was formed.

The value of innovation is sometimes much greater than the innovation itself because it opens new doors to reality and inspires greater possibility and wonder.

### Why don't people accept new ideas?

Many new idea proposers overlook including what is important to the idea receiver in the request. This person's interest must be addressed up front. For example a revolutionary idea being presented to an evolutionary administrator must be couched in appropriate language.

### Why don't people engage in their creativity easily and effortlessly?

Many people report feeling afraid they will come up with a wrong or bad idea, sensing they have more to lose than they have to gain. They might, for example, anticipate being ostracized or rejected, seen as incompetent, judged as contrary, or labeled as a non-team player. Offering new thinking to some is considered as a career-limiting move. Another reason people don't engage easily is because they haven't learned how to apply a controlling discipline that can be used that deliberately frees up their creativity.



These can be overcome through practice and learning skills that facilitate creative thinking and encourage behaviours that support it. Good leadership practice is helpful too. For example, ground rules are often set in creative thinking and strategy sessions so people feel competent, safe and confident that their new thinking contributions are welcome and can make a difference.

### What's one thing I can do to be more creative?

Actually, there are four.

1. Learn to defer judgement. Premature judgement of your own ideas, or someone else's can deeply affect your ability to generate new ideas and make new decisions. You are creating something new, so old ways of judging may not apply. Wait, noodle, finesse ideas; find nuggets in unusual ones from which to move forward.
2. Keeping a sense of humour helps. Humour begets a feeling of joy, which opens up cognitive channels for new perspectives.
3. Set a goal to put some time aside during World Creativity and Innovation Week April 15 – 21 every year to do one thing more to enhance your creativity. Examples of ideas for using creativity at work, school and home can be found [here](http://wp.me/PURBb-OY). (<http://wp.me/PURBb-OY>)
4. Fourth, have a conversation with Marci Segal (416) 487-1379, [marci@creativityland.net](mailto:marci@creativityland.net) or read her blog at [www.marcisegal.com](http://www.marcisegal.com) for further insight and support.

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## About Marci Segal, MS

Marci Segal, MS is passionate about freeing people's thinking so they can create new futures. As a creativity theorist, author, facilitator, trainer and keynote speaker Marci has worked with thousands of senior executives, managers and team leaders in Canada, the US and abroad challenging their traditional notions about creativity in the workplace, so that they can use it to fuel innovation, for close to 30 years. She is known for her concrete approach to creativity, creative problem solving and innovation, and for a wealth of practical concepts, tools and techniques her clients can apply immediately to see positive and meaningful results.



A wide range of companies depend on Marci for insight into what works best for innovation today: NASA, PHD Canada, Ricoh, Agnew Peckham and Associates, SPM Learning, Peace Office Standards and Training in California, CIBC, the Ontario Public Service...just to name a few.

Featured in publications such as Fast Company, Best Health and Strategy Magazine, Marci knows what it takes to lead, facilitate and participate in creating new futures. She is co-founder of the volunteer-run World Creativity and Innovation Week April 15 – 21, a new tradition begun in 2001 to encourage and engage people to use their creativity to make the world a better place and to make their place in the world better too, without causing harm. She also serves on the National Board of Directors for the American Creativity Association and was President of the Ontario Association for the Application of Personality Type (2001-2). Marci has been recognized for her pioneering work creativity and innovation by the Creative Education Foundation (US), the International Center for Studies in Creativity (US), the Innovation Forum (Ukraine) and the Innovation Summit (India) and is a frequent presenter at conferences including the World Future Society, the American Psychological Association, CPSI, CREA, and the Association for Psychological Type International.

Prior to founding *creativityland inc*, Marci was the first Canadian graduate of the International Center Studies for Creativity programs and the first creativity specialist on staff at an advertising agency worldwide (FCB). She parlayed her understanding of individual and team creative thinking, problem solving and innovation with psychological type into a specialized management-consulting firm, focused on freeing people's thinking to create new futures.

Marci's passion for freeing thinking through creativity and innovation is reflected in her writing, speaking, facilitation and consulting. She is the author of several books, *Creativity and Personality Type*, *a Quick Guide to the Four Temperaments and Creativity*, and *a Quick Guide to the 16 personality types in organizations*. She is currently writing *Ideas to Inspire Innovation Success -101 Techniques to Engage and Inspire your Clients, Co-workers and Cohorts to make it easy for people to use new thinking day-to-day*.

For further information, insights and interesting points of view on creativity, innovation and World Creativity and Innovation Week April 15 – 21, visit Marci's blog [www.marcisegal.com](http://www.marcisegal.com).

## Appendix A – Creative Problem Solving Thinking Skills

Thinking Skill	Description
Diagnostic	Making a careful examination of a situation, describing the nature of the challenge, deciding on a process to use.
Visionary	Articulating a vivid image of what one desires to create.
Strategic	Identifying critical issues that must be addressed and pathways needed to move toward the desired future.
Ideational	Producing original mental images and thoughts that respond to important challenges.
Evaluative	Assessing the reasonableness and quality of ideas in order to develop workable solutions.
Contextual	Understanding the interrelated conditions and circumstances that will support or hinder success.
Tactical	Devising a plan that includes specific measures and steps for attaining a desired end, and methods for monitoring its effectiveness.

Creative Problem Solving Thinking Skills Descriptions (Puccio et al., 2007).

## Appendix B - Creative Problem Solving Affective Skills

Affective Skill	Description
Curiosity	The desire to learn or know. Being inquisitive.
Dreaming	The ability to imagine hopes and dreams as realizable. Being positive about creating the future.
Sensing Gaps	The recognition of discrepancies between what currently exists and what is desired or needed. Being sensitive to opportunities to make a difference.
Playfulness	The disposition to freely toy with ideas. Being open to entertain the possibility of alternatives.
Avoiding Premature Closure	The resistance to push for a decision. Being willing to delay decisions to consider other options.
Sensitivity to the Environment	The awareness of physical & psychological surroundings. Being attuned to the immediate context.
Tolerance for risks	The resilience to persevere through setbacks and failures. Being prepared to handle disappointment, rejection and success.
Openness to novelty	The ability to entertain outlandish and risky ideas. Being aware that silly ideas can lead to good ones.
Tolerance for ambiguity	The ability to avoid leaping to conclusions. Being patient.
Tolerance of complexity	The ability to stay open and persevere without being overwhelmed by large amounts of information, interrelated and complex issues, competing perspectives. Being of a 'both/and' mindset.

Creative Problem Solving Affective Skills Descriptions (Puccio et al., 2007).