## 1+ 1=? Some thoughts on creativity

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'Thinkers: They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.' IB Learner Profile

The IB Learner profile does not have 'creativity' as a separate skill, but it does encourage 'creative thinking', something all teachers would agree is an outcome they would like to achieve for their students. Indeed most contemporary curricula have somewhere in their aims the encouragement of creativity in some form. Yet there is still the cynical view that every child is creative until they attend school.

School, by its very process, its assessment systems and examinations, acts against the encouragement of creativity. As Davis put it (discussing TOK, possibly the most creative part of the IB Diploma): 'the divide between creativity and conformity has not yet been resolved ... real creativity has been driven underground'. (IS 2014)

The growing development of the idea that schools should encourage or 'teach' creativity is linked to the need to adapt to a world of rapid and constant change. The theme that we need to equip students with the skills to 'solve the problems that we cannot yet imagine' is not new (Torrance, 1962). However recent technological advances have moved faster than the ability for most educational systems to adapt. The purpose of this article is to explore what is involved in being creative, both as student and teacher.

There are many answers to the same problem. Some might say 1+1=2; others 1+1=11; and some would even say a 1+1=a window; or the truly creative 1+1=1 (or possibly twins). We all think differently and have the freedom of choice to do so. The essential 21st century skills (www.21p.org) includes creativity and the need to look at things differently.

However teaching creativity for many appears to be one of the most difficult 21st century skills to nurture in the learners they serve. It is critical we gain a better understanding of how to navigate creatively through the one accelerating constant, change. This change is requiring us to think about how to connect the unconnected and to discover ways to make 1+1 = something new or different.

A scientific genius has different expertise than an artistic genius, but all creative geniuses may depend on the same general process: blind variation and selective retention. (Simonton) To what level will you allow yourself to go through your life doing a range of things without an exact purpose or deep logical reason -a life of flow that is continually drawing upon your memory and experiences to gain new meaning? We need to explore ways to connect the extra to ordinary or create 'Aha' moments and this is not something that just happens like magic.

We are born highly creative and it is not just schools that dampen the fires. As time passes the general forces of the world shape us into an orderly society that is predictably safe and comfortably creative. Our creative intelligence is typically higher than our creative confidence limiting our creative actions or level of perceived risk-taking. We all are creative and have to make decisions regularly which require us to be creative. The best part is that when we are creating something we feel alive and a form of purpose enters our psyche.

To create is to project into the future the change you wish to see utilizing your past experiences, understandings and neural wiring. Humanity has always been users of tools to alter or create our environment or new things. Society needs our future, children, to be makers and creators.

The key in a learning environment is for each learner to experience the creative processes to develop their neural wiring and strive for excellence using tools, 'whatever is needed' so that all learners can create and lead this change. It almost does not matter what they decide to make. When we are making or creating something we feel joy, alive and satisfaction.

Creativity can also be tapped by stepping over to the right side of the brain, the side of the brain that has 'Holistic, Whole Body Sense, Raw Emotion, Stress Reduction' (Siegel) as its core doers. This is much more powerful for creating than all the other cortical L sides of the equation (linear, logical, literal, labels and lists). Tapping into the right side enables us to holistically connect the unconnected to creatively accelerate the nurturing of our creativity and thickening of our neural paths. There is considerable research related to the right side of the brain and creativity. (See bibliography.)

Learning is about facing challenges and navigating through seas of change. In this turbulent, ever-moving, situation we are reinventing, making and creating new things on a regular basis. This requires us to hardwire our brains to the processes that will guide us and nurture our confidence to accept the necessity to adapt.

## Setting the environment for creativity

There is an environment within which you, or those you work with, can play an important role in the ideas generated. Yoshifumi Miyazaki shared in his TEDxTokyo Talk (2012) that 'All human physiological functions, including those of the brain, have adapted in natural environments as a chemical is released from trees that enhances our physiological functions.' If we believe that, then nurturing creativity around trees and plants in a natural environment could enhance your ideas and creativity. Teachers could experiment by taking

students outside to a natural environment or to make time during a field trip to have students develop new ideas, thoughts and reflections.

Quietening the mind also sets the tone for igniting your creativity or discovering new insights. Meditation, emptying the mind of all noise and thoughts, enables the mind to connect the unconnected. Breathing can also play a role in quietening our mind. David Rock a neuroscience translator, says

Insights require a quiet mind, because they themselves are quiet, so do something that doesn't require a lot of mental effort like focusing on something repetitive, or just generally be more relaxed.

Music can also trigger the mind as well as calm it. Even if there is a lot of noise outside, the key is to quieten the noise on the inside. Playing music, or having the sounds of nature in the background, can also enhance the ability to create. Walking or exercise can wake the brain up as well to the possibilities available to connect. Creativity is just connecting things.

Steve Jobs, one of the most creative people, often walked when creating new ideas and concepts. Set the scene for success by connecting with nature, quietening the mind and listening to calming sounds in nature or through music to create an environment that lifts your, or your learners', chances of being highly creative.

Sparks of creativity can be ignited through experiences, exposure, or by just being sensitive to our surroundings. Experiencing new things or places sends our brain into a mode of examining our existing knowledge to gain understanding or meaning around a new experience or setting. To gain this new understanding our brain finds synergy by connecting things that are unconnected based upon previous experiences, wiring and knowledge.

A key aspect of being creative is to be sensorial or to be present with our senses to foster new insight and spark creativity. Sometimes our best insight or vision is created when closing our eyes. Try taking the sense of sight away to envisage better what you need to create or interpret. This takes the visual noise away and provides us with the opportunity to imagine.

How would you describe or imagine something you cannot see? Think in terms of what a book does for us that a movie does not. Experiencing food with your eyes closed enhances the taste experience. What do you see when you can't hear? Often travelling does this for us as we see new sights, hear new sounds, smell new smells and taste new tastes. If I combine this with that, and a touch of this, I may create something I have never seen before.

A fun game you can play with your students is to look around you to discover what is extraordinary. Once you find it, think about what makes it extraordinary or different. What is the combination of elements that leads you to think this way? On the other hand look at something ordinary and create ways it could be extraordinary. You could link this exercise to a learning outcome or objective.

As important as establishing the environment is the framework in which

you will create new things or ideas. Understanding the processes for effective brainstorming, idea generation and reflectors to assess our ideas or creative output is important. When do your best ideas, or moments you are most creative, occur? For many it is just after they wake up or are under a shower or when their brain is relaxed and ready for those 'Aha' moments.

## Some resources

TED and the TEDx movement have the key mission to share ideas worth spreading on every subject you could imagine. More than 1500 talks are available free online, subtitled into many languages. Listening to a variety of ideas broadens the knowledge on which we can draw to create or connect the unconnected. TED-Ed is currently offering a platform for new ideas, lessons and ways to create something new and different. Learners can use TEDxYouth (Event organized for Youth by Youth) to feed their curiosity and share their creativity and ideas. Imagine the power unleashed when students create every aspect of an event and the experiential learning that takes place.

The International Conference on Thinking (next meeting: 29th June to 3rd July, 2015, in Bilbao Spain icot2015.com/en/argumentario/) regularly includes Howard Gardner, David Perkins, Art Costa, Lane Clark, Edward de Bono, Bob Swartz, John Edwards, Guy Claxton, Karin Morrison and Brendan Spillane to name a few. They share an array of frameworks and ideas on which creativity can be nurtured.

The company IDEO has developed seven rules for brainstorming: defer judgment; encourage wild ideas; build on the ideas of others; stay focused on the topic; one conversation at a time; be visual; go for quality. These allow us to create wild ideas, flow, ask questions, become visual and quickly develop many ideas. Through a wide range of ideas and rules we can curate our creativity in a way that we feel safe to take a risk, for feeling safe to take a risk is often important. It is an idea reinforced by the IB in their Learner Profile, which includes 'risk takers'.

Project Based Learning has become more prevalent in schools today and the processes involved can enhance our creativity as well. Brainstorming is another useful tool and can lead to mind-maps, Post-its, colored markers, sketches, images and prototypes allow us to be visual and much more. Art Costa (2012) states that 'we should place creative brainstorming at the center of the curriculum.'

Assessing creativity can be difficult. Grant Wiggins created a rubric to frame creativity:

The work is unusually creative. The ideas/materials/methods used are novel, striking, and highly effective. Important ideas/feelings are illuminated or highlighted in sophisticated ways. The creation shows great imagination, insight, style, and daring. The work has an elegant power that derives from clarity about aims and control over intended effects. The creator takes risks in form, style, and/or content.

We also have tools to assess if our ideas will make sense or be remembered by others. One I use when preparing TEDx speakers is the (Heath) Brothers six sticky points: is your idea simple, concrete, credible, emotional, has a story, something unexpected. Once you have formed an idea, check to see if all six of these points can be included in how you share your idea with others. If you have all six points, your idea will most likely stick with those who are exposed to it.

Thomas Frey, executive director and senior futurist at the DaVinci Institute, predicts jobs that will go away by 2030 will include those of teachers, who will be replaced by coaches and learning camps:

We are in the middle of transitioning from a teaching model to a learning model. Teaching requires experts. Learning only requires coaches. With all of the assets in place, we are moving quickly into the new frontier of a teacher-less education system.

We will continue to have adults guiding learners through their learning journeys in ways that are most relevant to the learners they serve. However learning environments will look and function differently than they do today. Let's just hope it does not take us until 2030 to do so. Anything less is cheating our learners out of their full potential.

As most teachers still exist in a system far removed from 'a learning model' we can start by role-modeling creativity and enjoy the benefits it brings both us and our students. Creativity is a powerful tool to guide many processes to an end that is much more than 1+1=2. To liberate creativity is to make learning exciting and fun while engaging and enabling learners to flow with the one constant ... change.

To make a prairie it takes a clover and a bee,

One Clover, and a bee And revery The revery alone will do, If bees are few Emily Dickinson, *Poems* (1862).

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