Can Creativity Be Taught?

The complexity of the world continues to increase at an exponential rate. In his TED Talk on the subject of creativity in schools, Sir Kenneth Robinson suggests that our natural born creativity gets educated out of us. His recommendation is that we encourage creativity in all its forms as a way to avert the many scenarios that threaten our (and our children's) future. Therefore, teaching creativity is crucial if we are to effectively meet, understand and solve the unprecedented political, economic, technologic, and cultural challenges the world faces in the 21st century and beyond. The Partnership for 21st Century Skills makes an excellent case for teaching creativity as part of the curriculum, namely as one of the four Cs, critical thinking, communication, collaboration and creativity, to go along with the traditional 3 Rs of education.

The question then becomes "How might we teach creativity?"

Quite fortunately for us, as opposed to being a talent that only some are born with, we are finding that creativity is a skill that may be developed in anyone. Perhaps not necessarily one that may be mastered by all, but it is most definitely a skill at which one may improve over time given adequate practice. As such, a useful course of action would be to educate children in the skill of creativity. But how does one learn to be creative? One way would be by studying and practicing seven skills that lead to increased creative production: enhancing our skills in perception, exploring patterns, learning to abstract, paying closer attention to our bodies, modeling, playing and synthesizing.

Everyone experiences the world from his or her own unique perspective. Though we typically assume we all experience the same reality, in fact, each of our views is shaped by our perceptions, how we become aware of, understand and ultimately comprehend each experience we have. By focusing on and working on perception skills, we can break out of our rote way of seeing the world, allowing us a new frame of reference and access to the novel part of Mishra's "novel, effective and whole" definition of creativity. In practical terms, this means exploring a unique approach to a topic such as viewing it from very close up or from an angle not typically seen or even in some exaggerated fashion. For example, when teaching health and wellness as part of digital citizenship, having students create and act out a scene about internet addiction where each person is so connected to their electronic devices that the devices literally become a part of their bodies highlights (in a humorous way) the dangers of internet addiction. By looking at it in a new way, students may more easily grasp and remember the point being made.

Pattern recognition is another valuable skill to have in one's creativity toolbox. Searching for and finding patterns (or sometimes even the breaks in a pattern) can be an excellent way to recognize otherwise hidden connections and relationships, a key to solutions being both novel and whole. In my "Of Cats and Computers: Patterns of Access in the Digital Age" post, I challenged students to match various map patterns to their appropriate labels. Here my goal was to have students examine and compare the patterns on the maps as well as to look for patterns within the comparisons. By doing so, I hoped students might not only practice and improve their pattern recognition skills but come to recognize that digital access means more than simply having a computer available. Some people lack access for reasons that have less to do with technology and more to do with politics, economics, and culture. And with that discussion I suspect may come the recognition that digital citizenship is not all that far removed from citizenship in general.

To fully comprehend a topic, one needs to get to the heart of it. Abstraction is an excellent method for whittling away the unnecessary, leaving only the essence. More specifically, abstraction involves locating, isolating and representing the simplest idea, aspect, characteristic or element of a more complicated concept and doing so in a manner that elucidates the original concept. Once we understand the core, we have greater opportunity to more deeply explore and understand the topic. For digital citizenship, my example involves digital etiquette, rights and responsibilities. The importance of taking care with what one posts online, including personal safety, data security, and internet etiquette, is central to being a good digital citizen. Along those same lines, clear recognition of the permanence of one's actions and responses on social media is also an important aspect of digital citizenship. To get at the core of these ideas one needs to demonstrate how difficult it is to take back one's words and ideas once expressed on the internet. Things said online are analogous to toothpaste. Once squeezed from the tube, it is impossible to get it all back in. Likewise, thoughts expressed on the internet live on, for good or ill, past the time when they were posted. By both demonstrating an abstraction of this concept for students and then having them explore their own abstractions of it, powerful associations can be developed allowing for profound comprehension of the most fundamental qualities of an idea.

The physical digital world is made of metal and plastic and silicon, whereas humans are flesh and blood and bone. Likewise, digital devices may be all about logic, but as humans it is important for us to stay in touch with our feelings. A big part of why humans can be more creative than digital devices is our biological heritage, and holding true to that heritage is what embodied thinking is all about. Embodied thinking includes both a

conscious and an unconscious awareness of how the body reacts to external stimuli, a sense of muscle, movement, balance, and touch, not to mention visceral and emotional sensations that may lack a specific physical correlate, even incorporating an empathic understanding of what it feels like to be someone (or even something) else. Common Sense Media's [Pause & Think Online](#) represents an excellent opportunity for students to practice embodied thinking when they sing, or even listen to and ponder the words of the song. As the lyrics focus students on their bodies, their feelings, their emotions, they are practicing embodied thinking at its best. At the same time, the students absorb an excellent message about digital citizenship. Even as the technological world of the digital has solidified its value and place in both our lives and our education system, embodied thinking and learning can be a path to keep emotion, sensation, feeling, touch, and the physical on equal footing with the rational, logical, ethereal, data side of digital citizenship.

Modeling is an excellent tool for exploring a topic in depth and truly understanding it. As a creative tool, it permits making concrete both the essential elements of a system as well as potentially intricate features. Combined with the possibilities of mapping, transforming and scaling, modeling makes approachable something that might otherwise be difficult to experience. In short, it can be a method for accessing the inaccessible. If an abstraction gets at the essence, a model brings out the detail. By way of example, I designed [a model of digital citizenship](#) wherein the three major aspects of it (respect, education, protection) were mapped to the three physical axes of length, width and depth. An exploration of this model highlights several specific and possibly otherwise overlooked characteristics of digital citizenship, such as respect being the basis of all citizenship and the importance of continued growth and development. One of the most significant advantages of modeling is its ability to enhance understanding through the process of building the model itself. In order to properly and effectively model a system, one must have quite a deep familiarity with it. In this way, modeling presents the perfect opportunity to simultaneously learn about and demonstrate one's own knowledge of an idea, topic, system or object.

Some of the very best learning and many breakthrough discoveries are a result of play. My own personal suspicion is that retention increases when learning is enjoyable. At the very least, when something is fun we tend to stick with it longer, and persistence and perseverance have been shown to correlate positively with discovery and invention. Play allows for taking risks and making mistakes. And risk-taking and mistake-making are how we grow and learn. Play is where creativity starts and limitations end. The human creative drive first expresses itself in our play, and the limitations of "the real world" fall away when we play. And, in a circular pattern, it is the limitlessness of play

that allows our creativity to reach even greater heights and for the truly N.E.W. to emerge. A playful approach may be seen in each of the five prior examples. From play acting to enhance our perceptive skills to singing to embody our thoughts, from puzzling out patterns in maps to challenging oneself with creating abstractions to building models, all of these are forms of play. Moreover, nothing comes even close to play to develop one's imagination.

Finally, synthesis is the act of creation itself, when accumulated knowledge, experience and ideas are employed in the development of something unique. Second only to evaluation, it is a higher order thinking skill near the very top of Bloom's taxonomy. It is a goal of education. In synthesis, what has been learned is not simply brought forth verbatim. Rather, in a true demonstration of understanding, it is blended into a new result which transforms the separate elements into that well-known whole that is greater than the sum of its parts. Synthesis is creativity in action. Students who can synthesize a solution to a problem demonstrate not only their facility and familiarity with the constituent parts but their adeptness with the creative process proper.

In conclusion, some may suggest we do not have the time to teach creativity or that doing so would detract from time needed for core subjects. To which I would argue that without creativity core subjects become useless. If we cannot learn to come up with new and different (dare I say, better) solutions, we will eventually stumble and fall under the weight of our problems. If core subjects are necessary, then creativity is vital. But all is not lost just yet. By developing and practicing these seven skills, students will be much better prepared to face and solve the difficult challenges that trouble our increasingly complex world.