

Are creative processes and critical thinking skills best taught through the CCSS or the arts?

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In my personal assessment of the Common Core State Standards document (CCSS) it occurs to me that, for all its merits, the CCSS presumes that somewhere along the way, creative processes and critical thinking skills will be learned as a result of following the CCSS. I'm not sure that is true, but I *am* sure that those skills are practiced and illuminated by thinking like an artist thinks when making art.

We are soon to leave the Knowledge Age and enter the Innovation Age, if we haven't already. In the 21st century creativity and innovation will be the skills most highly valued in students graduating from our colleges and universities. It is undeniable that there will be an increasing demand for skills in science, technology, engineering and math, the "STEM" skills. And, if you believe the CCSS, the English language arts (ELA) and mathematics skills it promotes at the K-12 level will be essential for college preparation and career readiness.

But I believe that students who excel in the skills of creativity and innovation, and evidence a talent for synthesizing disparate kinds of data and concepts into new and unique outcomes, will be the most prized workers of all, whether they enter the workforce after high school, college, or graduate school.

This is why we must integrate the arts into the current movement of promoting various alphabet-soup-titled approaches to education reform. Whether you believe that the CCSS is the way to create a better educated and "career ready" populace, or that a STEM based education should be our national mandate, I personally believe that changing STEM into STEAM by adding the A for ARTS is the best acronym of all.

Having said that, I also believe we must reframe arts education in a new and vital way. In the Innovation Age we must shift our arts education syllabus from one that is only *performance* focused to one that is also *creativity* focused. Students need to experience the *creation of new work* through the arts because the arts train the mind in sensory awareness and the ability to think flexibly and creatively, as both a problem finder and a problem solver.

The act of making art, and thinking as an artist thinks in order to do so, is a comprehensive exercise in problem finding, problem solving, and ultimately in developing the necessary skills to realize the execution of a solution.

In their book, *Studio Thinking*, Ellen Winner and Lois Hetland discuss the "Habits of Mind" that are developed in an arts studio that are critical to innovation in all disciplines. These habits are to: Develop Craft, Engage and Persist, Envision, Express, Observe, Reflect, Stretch and Explore, and to Understand The World of the Discipline itself and its Communities.

It is highly conceivable that the critical thinking processes associated with these habits can be transferred for usage in non-arts disciplines for purposes of innovation.

Without the engagement-activity of making art while studying art, or the engagement of the learner in the “making” of *something* while studying a particular discipline, the relationship of data and concepts to which the student is exposed to real-world activities is lost.

Worse, the likelihood is that most data and concepts taught in a completely didactic mode will soon be lost to the learner while the opportunity for transfer of said data and concepts to a *new* experience is just about nil.

The beauty of changing STEM to STEAM is that while solving a purely STEM based problem generates an answer that obviously requires thinking, solving an arts based design challenge makes thinking visible, and therefore trainable, as one observes the creative process at work through sketches, multiple drafts and studies, and, ultimately the finished work.

To train our students to think as an artist thinks when making work, to follow the creative triangle of *reflecting* on the challenge at hand, *acting* by taking the first steps toward a solution, and stepping back to truly *see* what you have done, and then repeating the process, is why STEAM is better than STEM as we look to create a 21st century educational paradigm that fosters creativity and teaches us to ask and to answer the best questions of the Innovation Age.