

## **Balanced Education + Art Education: Beyond STEM to Capacity**

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### **Abstract**

An over-emphasis on standards and narrow definitions of intelligence is questioned in light of the need for developing quality and balanced thinkers equipped for personal success in 21<sup>st</sup> century life and work. U.S. goals for global competitiveness have looked to STEM subjects for the development of creative and innovate thinking skills but are contested for their inability to develop balanced intelligence.

While art education is challenged to improve its pedagogical and cultural development of balanced thinking, it holds critical potential for nurturing students' critical, creative, and practical skills and dispositions (Sternberg, 2008). Research supporting cognitive abilities as expandable and synthetic lead to concerns for the expansion of students' overall capacity to learn, connection-making, and utilization of their balanced intelligences. These are goals of education that take precedence over test scores and global competitiveness.

The field of art education is called to aim higher and be a leading force in the development of cognitive balance-not only for creative thinking, but also for equal development of analytical and social/emotional skill sets.

### **Introduction**

The arts in education are considered essential for their ability to produce "tenacious, team-oriented problem-solvers who are confident and able to think creatively" (U.S. Dept of Education, 2009, p. 1); yet they continue to be undervalued players in the race to advance students' 21<sup>st</sup> century thinking skills. Political and corporate agendas once again support STEM subjects (science, technology, engineering, and mathematics) as in the "Educate to Elevate" campaign-to the tune of \$500 million in early 2010 (Robelen, 2010).

America's true competitive edge will not be realized through technical competence in math and science, but through the increased capacities of our young to think in synthetic, creative, and socially intelligent ways-qualities needed for success in life and work (Sternberg, 2008). What is needed is an emphasis on educating for thinking that can more aptly address the call for greater innovation and creativity-capacities fostered through (but not exclusive to) the arts. Schools should be more about equipping balanced human beings with the learning power that goes beyond "the basics." What is not needed is a more-of-the-same industrial goal for education, incapable of addressing students' real capacities.

The truth is that former efforts highlighting science and math education have not made our students significantly better at thinking or positioned our nation in a more competitive light (Darling-Hammond, 2008). The development of balanced and quality thinkers have fallen prey to performance standards, higher test scores, and closing the achievement gap. This dichotomy has left our students without the balance of thinking and learning dispositions they need "to become fully literate in critical thinking and creative processing" (Smilan, 2007, p. 242).

For issues of equity, this article addresses all students' rights to learn in ways that account for the balance of intelligences they possess (critical, creative, and practical), not just the most tested and respected ones (Sternberg, 2008). This discussion also considers that students' intellectual capacities and success are best nurtured not by skill and drill or "STEM," but through a thinking-rich education in the arts.

### **The Issue At Hand**

Nearly two decades ago, the Secretary's Commission on Achieving Necessary Skills (U.S. Dept. of Labor, 1991) determined that 21st century students would need excellent skills in the areas of creative thinking, problem solving, reasoning, and decision-making skills. Friedman's *The World is Flat* (2004) brought further awareness, at least in an economic sense, that the U.S. lacked educational emphasis on connection-making (e.g. design and technology, art and science, math and music) compared to other countries (Friedman, 2004). Daniel Pink (2005) claimed that educational priorities must be updated to include flexible, synthetic, "big picture" thinking. Others pointed to brain research and students' hard-wired ability for making connections and "thinking big" (Brady, 2004) as the key to innovation.

Yet U.S. students continue to fall behind in critical thinking, scoring in the lower categories of problem-solving on the 2006 International PISA test (Program in International Student Assessment); out of 40 countries, the U.S. ranked 35th in math and 31st in science (in Darling-Hammond, 2008). Educational systems in higher achieving countries such as Finland, Australia, New Zealand, Japan, and Canada have been found to focus more on reasoning skills, critical thinking, and problem solving (Darling-Hammond, 2008). Fewer topics are taught more deeply with more interdisciplinarity, and depth is valued over breadth. Teachers consider themselves as facilitators, rather than dispensers of knowledge, and assessments involve more open-ended items that required analysis, application of knowledge, and reflection. They also utilize student-directed learning goals, and project-based, inquiry-oriented investigations. Compare those findings to mandatory testing and teaching practices in this country that primarily reward recall and fact-recognition within linear disciplinary silos (Brady, 2004; Gardner, 2007; Sternberg, 2008).

For the most part, schools have failed to prepare students for successful futures in a world that will require them to use a balance of their intelligence. This problem goes further, in that traditional education systems-both internally and externally-are not designed to produce creative and synthetic people (Gardner, 2007; Robinson, 2001).

### ***The Need for Creative and Balanced Thinkers***

It is imperative that we train 21<sup>st</sup> century students to be creative and flexible in a rapidly changing world. To the extent that policy and practice cannot go beyond outmoded views of intelligence and learning, we are risking students' futures (Sternberg, 2008). A narrower curriculum and narrow definitions of academic achievement have limited the types of thinking that are valued in schools, sacrificing creative and balanced outcomes (Eisner, 2002). Certainly, to define overall intelligence by a narrow subset of tests that measure a narrow aspect of their overall intelligence is an injustice.

A greater aim would be to spend less time on basic skills and more time on the kinds of skills that prepare students to be 21<sup>st</sup> century thinkers and problem solvers. Kozol (2005) claimed it to be the "Shame of the Nation" that current high stakes tests have especially narrowed the aims of education for the poor and minorities-those who may benefit the most from a more balanced curriculum. Learning environments that reduce curricular aims to basic content without regard for developing all students' higher order thinking, regardless of their socioeconomic level, do minority and high-poverty students more of a disservice than may have been previously realized (Delpit, 2006).

Corresponding with cognitive theories and research regarding learning capacity as expandable and multifaceted, Robert Sternberg (1997, 2008) has proposed that intelligence consists of a balance of analytical, creative, and practical skill and dispositions. His theory of successful intelligence says aptitude is not fixed; people can capitalize on their strengths and strengthen their weaknesses. Howard Gardner's research (2007) has supported development of balanced "minds for the future," including the "synthesizing" mind which takes disparate content and integrates it into a coherent whole.

Cognitive flexibility and balance is infrequently emphasized in schools; rather, concentration falls on analytical skills and memory-based skills. Research has indicated, however, that to not teach or assess for a balanced of students' skills and dispositions (analytical, creative, and practical with wisdom) may be doing a severe injustice for various learners, and especially for ethnicities that demonstrate their intelligence in ways that are not entirely focused on analytical skills (Sternberg, 2008; Sternberg & Grigorenko, 2004). The ability to use a balance of intelligences may be as or more important to students' success in life.

### ***The Arts and Balanced Thinking***

Teaching practices in the art classroom have been challenged to align with 21<sup>st</sup> century goals for thinking and to balance creativity with reason and responsibility. Cunliffe (2007) reported that visual arts education has been more focused on creative expression and the social/emotional aspects of art, rather than thinking. Faced with standard-based competencies, teachers' lesson objectives often do not show evidence of planning for higher order thinking skills and accompanying dispositions. Art researchers have credited current high-stakes testing cultures for the disintegration of teaching for thinking in the art classroom, and "no where is this more evident than in the area of art education," said Smilan (2007, p. 243).

Reviews of the literature show that the arts have rarely focused on the bonds between creative and critical thinking in education (Cunliffe, 2007), and even less research exists on the development of a balance of creative, critical, and social/emotional thinking skills in the visual arts. Visual art education has been reportedly less concerned with the infusion of best practice research regarding teaching for thinking (Luftig, 2000), especially in the area of balanced thinking. Critics of the arts in education fear that a lack of rigor disqualifies their contribution to the development of students' quality thinking.

With an age-old reputation for being less intellectual than science, mathematics, and technology—perhaps dating back to the split between Enlightenment reason and Romantic creativity at the end of the 18<sup>th</sup> century—the field of art education is challenged to dispel the myth that creativity does not exist together with discipline, effort, perseverance, and criticality (Cunliffe, 2007; Robinson, 2001).

### **How the Arts Promote Higher Order Thinking**

With known links to affective and motivational aspects of learning, an education in the arts may better promote thinking skills that are connected, personal, and flexible (Gardner, 2007). Brain research has provided substantial evidence for the arts' impact on developing attention networks in the brain, along with more concrete evidence of their link to transfer and overall achievement (Posner, Rothbart, Sheese & Kieras, 2008).

Quality art programs have the potential to develop students' capacities to think in critical, creative and practical ways, to consider multiple viewpoints, and to reflect on and revise their own views (Gadsden, 2008). Harvard's Project Zero studies (Tishman & Palmer, 2006) and research by Lampert (2007) have indicated that critical thinking competencies and dispositions are made visible through inquiry-based

interactions with works of art. Students' skills for problem solving, investigation, analysis, synthesis, and reasoning with evidence increase through art-based inquiries. The higher order thinking skills of conceptual problem-solving and decision making are developed in the process of artmaking (Eisner, 2002; Pitri, 2003).

Arts education does not have the corner on the market when it comes to developing creative, innovative, or critical thinking, but it also cannot be discounted for such and may even hold the key to certain kinds of thinking and the motivation for using particular cognitive skills and inclinations (Sternberg & Lubart, 1999).

Yet what is still needed, is balance.

### **Possibilities for the Field**

Art education's reputation as a loosely shaped field in need of conceptual and strategic reframing, has placed responsibility on art teachers to resolve its marginalized status in the education community (Luftig, 2000; O'Fallon, 2006). Researchers have called for the field to better prepare teacher-leaders who can contribute to the educational community, incorporate best practice research, and better position arts education in the midst of current political climates (Smilan, 2007). Noddings (2007) has called for the preparation of teachers that are ready to address connections outside of their disciplinary silo-to other disciplines, to the ordinary problems of humanity, and to personal explorations of essential questions of meaning in order to help their students do the same.

Art and design education programs that develop students' balanced thinking and successful intelligence (Sternberg, 2008) may answer this call. Research surrounding a "design thinking" approach combines new paradigms of teaching and learning with balanced thinking (Burnette, 2005; Burnette & Norman, 1997). Design-based education affirms beliefs that art curricula should focus more on meaningful and personal inquiry from a critical theory point of view and less on lessons focusing on the elements and principles of art and design (Gude, 2007). While quality and content are important, "design thinking" approaches are focused equally on process; they are not the antithesis of visual culture education (Freedman, 2003).

Sternberg and Lubart (1999) have supported the need for applying balanced views of intelligence to creativity. Criticality with creativity informs judgment about which ideas are best and provides analysis of craftsmanship. Practical skills are applied in one's ability to sell their ideas to others, with the necessary social/emotional skills to do so. Paul and Elder (2006) have written extensively about the essential partnership between critical and creative thinking.

### **Conclusion**

Questions about what truly constitutes "the basics" in a globalized society force greater attention to the development of students' higher order and synthetic thinking skills (Gardner, 2007). To truly prepare students with the expanded intelligences and habits that allow them to not just compete, but realize their full capacities, an education in and with the arts at its core is an essential partner.

While art education has apparently fallen short of purposeful development of students' balanced thinking, the time is ripe for a broader and thinking-rich agenda for the field. This discussion has called for balanced practices that elevate the development of students' creative, connected, and idea-rich potentialities through art education. For cognitive development and issues of capacity, visual art education is considered for its potential to develop students' unique patterns of intelligence-creative,

critical, and practical with wisdom (Sternberg, 2008). Intentional and balanced curricula in the arts come closer to the equitable and sufficient educations that our children deserve.

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