



## E-ARTinED

Report on the relevance of the Arts  
to develop Critical Thinking

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**Critical thinking** has various definitions. To start the e-ARTinED Report on the relevance of the arts to develop critical thinking, we would like to start with a brief conceptualization by Linda Elder, American educational psychologist, author and president of the Foundation for Critical Thinking:

“Critical thinking is self-guided, self-disciplined thinking which attempts to reason at the highest level of quality in a fair-minded way. People who think critically consistently attempt to live rationally, reasonably, empathically. They are keenly aware of the inherently flawed nature of human thinking when left unchecked. They strive to diminish the power of their egocentric and sociocentric tendencies. They use the intellectual tools that critical thinking offers – concepts and principles that enable them to analyze, assess, and improve thinking.

They work diligently to develop the intellectual virtues of intellectual integrity, intellectual humility, intellectual civility, intellectual empathy, intellectual sense of justice and confidence in reason.

They realize that no matter how skilled they are as thinkers, they can always improve their reasoning abilities and they will at times fall prey to mistakes in reasoning, human irrationality, prejudices, biases, distortions, uncritically accepted social rules and taboos, self-interest, and vested interest. They strive to improve the world in whatever ways they can and contribute to a more rational, civilized society.

At the same time, they recognize the complexities often inherent in doing so. They avoid thinking simplistically about complicated issues and strive to appropriately consider the rights and needs of relevant others. They recognize the complexities in developing as thinkers, and commit themselves to life-long practice toward self-improvement.

They embody the Socratic principle: “The unexamined life is not worth living”, because they realize that many unexamined lives together result in an uncritical, unjust, dangerous world (Elder L., 2007).”

A more common definition of critical thinking, with some comments, is reported in Hidden curriculum (August 2014): “Critical Thinking is a term used by educators to describe forms of learning, thought, and analysis that go beyond the memorization and recall of information and facts. In common usage, critical thinking is an umbrella term that may be applied to many different forms of learning acquisition or to a wide variety of thought processes. In its most basic expression, critical thinking occurs when students are analyzing, evaluating, interpreting, or synthesizing information and applying creative thought to participate in a debate, solve a problem, or reach a conclusion.

Critical thinking entails many kinds of intellectual skills, including the following representative examples:

- Developing well-reasoned, persuasive arguments and evaluating and responding to counterarguments;
- Examining concepts or situations from multiple perspectives, including different cultural perspectives;
- Questioning evidence and assumptions to reach novel conclusions;
- Devising imaginative ways to solve problems, especially unfamiliar or complex problems;
- Formulating and articulating thoughtful, penetrating questions;
- Identifying themes or patterns and making abstract connections across subjects.

Critical thinking is a central concept in educational reforms that call for schools to place a greater emphasis on skills that are used in all subject areas and that students can apply in all educational, career, and civic settings throughout their lives.

As higher education and job requirements become competitive, complex, and technical, students will need skills such as critical thinking to successfully navigate the modern world, excel in challenging careers, and process increasingly complex information”.

### Critical Thinking in school and workplace

It is a fact that economic, political, social, and technological changes have accelerated the need for an educational revolution (Deasy, 2008).

Partnership for 21<sup>st</sup> Century Skills is the US organization of collaborative partnerships among education, business, community and government leaders for knowledge and skills needed in a changing world. According to the Partnership for 21<sup>st</sup> Century Skills, “many of the fastest growing jobs and emerging industries rely on workers’ creative capacity – the ability to think unconventionally, question the herd, imagine new scenarios, and produce astonishing work” (www.21centuryskills.org).



Nonroutine creative thinking is a basic competence needed for job categories predicted to increase in the next decade, 80 percent of which haven’t been conceptualized (Chairman, Cisco Systems, in speech at the Wake Forest University).

Higher education and job requirements are becoming increasingly competitive, complex and technical. Students will need skills such as critical thinking to successfully

navigate the modern world, excel in challenging careers, and process complex information.

Therefore critical thinking is needed in life to help personal growth as well as to enter a world that responds to technology run.

Teachers in the 21<sup>st</sup> century should not avoid showing children how to become critical thinkers.

They have to experiment with questioning, reasoning, reflecting on experiences and make informed judgements.

“Critical thinking also intersects with debates about assessment and how schools should measure learning acquisition. For example, multiple-choice testing formats have been common in standardized testing for decades, yet the heavy use of such testing formats emphasizes—and may reinforce the importance of—factual retention and recall over other skills such as critical thinking that are vitally important for students to possess but far more challenging to measure accurately.” (S. Abbott, 2014).

### Educating children to critical thinking through the arts

A powerful statement for arts-based education is that the arts engage students in creative problem

solving and use of new technologies that prepare them for a world guaranteed to change in unimaginable ways ( Pink, 2006).

Daniel Pink, author of *A Whole New Mind: Why Right Brainers Will Rule the Future* (2006) explains that any job is vulnerable, if it can be replaced by a computer. How do we prepare students for a future where many “good” jobs no longer exist? Certainly not by making our students into “armies of test takers” who are little more than “vending machines for the correct answers” (Taboh, 2009).

Pink joins many who realize personal and professional success is more about having empathy, taking risks, and doing innovative thinking than high test scores. He points out: “The idea that you can succeed as an engineer today by simply being good at math problems is wrong” (2006) and there is no better way to engage creative and critical thinking than through artistic approaches to problem solving. Integrating the arts in school puts creative problem solving at the core of education.

The arts deliver precisely the kinds of thinking needed in the workplace of the new millennium:

- Higher order thinking such as analysis, synthesis, evaluation, including critical judgement
- Imagination and creativity focused deliberately on content and quality end products
- Prudent risk taking and experimentation
- Teamwork that relies on collaborative problem solving
- Technological competencies
- Flexible thinking and an appreciation for diversity
- Self-discipline, persistence, and taking initiative.

Students will not learn to think for themselves if their school expects them to stay in line and keep quiet. (Rabkin & Redmond, 2005), but unfortunately, many schools, especially in low-income areas, dwell on basic skills, testing, and rigid discipline (Rabkin & Redmond, 2004). It’s all about don’ts.



Don’t talk, don’t move, don’t touch, don’t laugh, don’t colour outside the lines, don’t work together. Schools must become DO places (Conett C. E., 2011). The 21<sup>st</sup> century requires critical thinking, creative problem solving and teamwork.

Although critical thinking and creative exercises in classroom should not be confined to the use of the arts, these represent the perfect tool for developing increasingly inquisitive minds.

The arts, of course, are deeply cognitive. No art is created or understood without higher level thinking informed by careful observation, pattern finding, taking new perspective, making qualitative judgements, visualizing and use of metaphors and symbols. Artists use such thinking to transform and represent what is noticed and imagined, just as similar inquiry-based thinking is central to work in the field of science, math, and history (Eisner, 2002).



The arts compel us to consider diverse views with artists, actors, musicians and poets. Their provocative nature charges us to respond by using higher order thinking to make sense.

Students that use paint or a slab of marble to communicate and solve problems are, according to Howard Gardner (1993), using intelligences central to life. The arts link cognition to emotion in a myriad of

aspects of our lives ranging from advertising jingles to comic strips. As students learn to think through the arts they discover new capacities and experience pride that motivates them to be

more diligent. Centre stages in cognitive contributions of the arts are four processes: creative problem solving, critical thinking, comprehension and composition.

Critical thinking occurs during creative problem solving and takes a heightened focus on thoughtful and skilled use of ideas, techniques and materials. For example, arts critique entails closely analyzing details and patterns, compiling evidence, and using evaluation criteria to make judgements (Soep, 2005).



Students needs to learn to use critical thinking to judge their own work and that of others. In doing so they learn that opinions matter but need to be supported with evidence. Even young children can be prompted to discover details in paintings, interpret messages in music and draw conclusions supported by "text" evidence.

Critical thinking is hard work but students will persist at the hard brainwork if it is self-rewarding -

art-based work is that (De Moss & Morris, 2002). Students love details and patterns that occur in interesting contexts and provide clues to meaning making.

Our children are blessed with so many things, they can easily miss the lesson that small things can make large differences. The arts help refocus on the potential of a single word, a small sound, or a slight gesture to speak volumes (Cornett, 2011).



Schools that integrate the arts develop essential thinking such as “careful observation of the world; mental representation of what is observed or imagined; abstraction from complexity; pattern recognition and development; qualitative judgement; symbolic, metaphoric, and allegorical representation” (Rabkin & Redmond, 2004).

### Conclusions

Teaching critical thinking is essential if we want to prepare our children for the world in which they live and in which they will develop and apply their unique potentialities. Teaching children to memorize facts and do rote skill application – too often the focus of schooling – does not prepare children for their future.

Critical thinking will provide students with enormous benefits by being trained to think for themselves, to listen to others’ viewpoints, develop resilience and creative problem-solving as well as openness and curiosity for the world around them. Critical thinking will also be useful to equip them to tackle difficulties during their exams, since they will be able to show how deep they can delve into any subject.

To reach the goal of teaching students to think, teachers can use multiple arts forms embedded into curricular subjects, as a method, not just as standalone disciplines.

Learning should become embedded with artistic ways of thinking and working, essential to contemporary life.

Piaget, a Swiss biologist and epistemologist, is known for his theory based on observing children.

He reasoned that the key stimulus for development was interaction with the environment. Piaget thought that, along with genetically programmed biological changes, touching, seeing, hearing, tasting, smelling, moving, and interacting with people (all actions inherent to art making), cause children develop intellectually by experimenting; what adults see as play is serious work.

Therefore Piaget believed there is a natural inclination for higher order thinking to develop, but it depends on experiences.

Complex thinking is a major goal of education, but it is difficult to teach. The arts provide a rich context for cognitive development because they thrive on changing points of view and mental experimentation. Mistakes are not seen as failures and children feel safe using paint or clay, songs and dance to think through problems. Art materials allow primary children to edge into this type of thinking before they have the verbal language to do things like “explain perspective.”

“Children who are creative thinkers look twice, listen for smells, dig deeper, build dream castles, get from behind locked doors, have a ball, plug in the sun, get into and out of deep waters, sing in their own key” (Paul Torrance, 1973).

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