

The Museum of Contemporary Art, Los Angeles Contemporary Art Start Curriculum Guide Launch and Evaluation Project

The Relationship Between Training in and Exposure to Contemporary Visual Art and Creative Thinking and Metacognition in Elementary School Students

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Introduction

The purpose of this study was to assess the efficacy of The Museum of Contemporary Art's Contemporary Art Start (CAS) program by measuring whether there was a significant positive change in the creative and metacognitive skills of participating students. The study was also motivated by the desire to make a significant contribution to current research on arts education and museum education in particular. We see this as a preliminary study that will provide crucial information for future program improvements and research.

The importance of creativity, innovation, imagination, and metacognition—or self-reflective thinking—has been emphasized by many theorists as crucial for the success of students in the 21st century. It has been claimed that these thinking skills are among the intrinsic values of teaching the arts as a core subject for all students. Current research has emphasized the significance of outlining the intrinsic value of instruction in the arts as opposed to justifying art education by its purported effects on the development of skills in other core curricular areas. Harvard researchers Winner & Hetland (2000, 2007) and the Rand Corporation (2005) have called for studies that investigate the connections between instruction and experience in the arts and cognitive or emotional skills that are uniquely addressed by the arts. One such area is that of creative thinking and a subset of creative thinking: metacognition.

The Investigation Team

MOCA Education's pilot study was designed by: Primary Researcher, Victoria Stevens, Ph.D., a clinical psychologist and expert on creativity and arts education from California Institute of the Arts; with Suzanne Isken, MOCA Director of Education; and Robert Gould, Ph.D. Director of the Center for Statistics Education, Department of Statistics, University of California, Los Angeles.

The Contemporary Art Start Program

Founded in 1986, the Contemporary Art Start (CAS) program is a yearlong partnership with area teachers that actively engages students in seeing, thinking about and responding to contemporary works of art. CAS offers professional development for teachers, a comprehensive curriculum guide, two guided student visits to MOCA, and family involvement through free passes and monthly family workshops.

The CAS program was designed to address the guidelines set forth in the California State Visual and Performing Arts Framework and to give students a clearer understanding of contemporary art and its relationship to their own lives. The long-term goals of the program are to evoke positive, personal and divergent responses to original

works of contemporary art; to acknowledge and build upon the feelings and imagination of students; and to encourage students to become life-long learners in and through arts.

The CAS Evaluation Project

The study's focus on creative thinking and metacognition was chosen due to the CAS program's emphasis on developing perceptual, reflective and questioning skills through experience in analyzing works of contemporary visual art.

The study evaluated 335 elementary students in two groups: those who belonged to classrooms whose teachers participated in CAS professional development, utilized the CAS Curriculum Guide throughout the year, and participated in two museum visits; and a matched control group with no CAS involvement.

Students took the Torrance Test of Creative Thinking (Non-Verbal) and a Written Response to Visual Art test (created by the research team) before and after completing an academic year in the CAS program. The students' improvements were compared to those in a control group, which consisted of children in the same grade and at the same school who did not participate in CAS.

Preliminary Findings

This preliminary analysis found significant improvements across several measures of creative thinking and metacognition in comparison with a control group for students enrolled at 14 Los Angeles Unified School District campuses who participated in MOCA's CAS program.

This preliminary analysis found that after controlling for demographic differences between the students and varying amounts of experience between the teachers, on average, students who participated in CAS showed statistically significant improvements in comparison with students in the control groups on aspects of creative thinking and metacognition that include synthesis, reflection, observation of details; the ability to tolerate ambiguity in order to generate novel ideas; imaginative elaboration of ideas; and the use of art vocabulary and concepts.

Torrance Test of Creative Thinking

More precisely, the students in CAS showed statistically significant improvements, in comparison to their control counterparts, on the Torrance Closure ($p = 0.0005$) and Titles ($p = 0.0494$) subscales.

The two subscales are specifically defined as

Resistance to Premature Closure: Measures the ability to tolerate frustration and delay gratification in the service of staying open long enough to make the mental leaps involved in the generation of new ideas, insights and combinations. A low score here would indicate that the student would tend to close the incomplete figure in the quickest and easiest way with a straight or curved line rather than resisting closure and allowing mental and emotional space for original solutions and images to arise.

Abstractness of Titles – This is a metacognitive ability to synthesize disparate elements into a meaningful whole and to be able to have a sense of the essence or

meaning of a problem. The skill reflected here is about the capacity for abstraction that is shown in the giving of a title to the picture drawn. This particular subscale is unique amongst the others in that it involves transforming the figural into another modality, i.e., verbal.

Written Response to Visual Art

Writing scores on the Written Response to Visual Art test supported anecdotal evidence from teachers that students seem to become more observant as a result of CAS participation and that their observations are richer in detail. Furthermore, the number of years a teacher was involved in CAS was positively associated with the previously stated improvements in Torrance test scores and writing rubric scores.

Specifically, the CAS students showed statistically significant improvements, in comparison to their control counterparts on the G ($p = 0.0067$), H ($p = 0.0121$), and B ($p = 0.0317$) subscales of the Written Response to Visual Art test. In addition, our analysis suggested that strong correlations on some subscales might indicate that different subscales are both measuring similar traits. For this reason, we created combined subscales by adding scores. Two of these subscales, GH and AB, were statistically significant ($p = 0.0012$ and $p = 0.0487$, respectively).

[Note: the p-value, (for example $p = 0.0067$) is a measure of statistical significance. The smaller the value, the further apart the average scores of the two groups were. Roughly, the p-value is the probability that the observed differences between two groups could occur through chance alone. Traditionally, values less than 0.05 are considered "statistically significant".]

The specific definitions of these subscales is

Scale G: Evaluation/reflection

Scale H: Use of art vocabulary and concepts

Scale B: Description/elaboration

Scale A: Observation of details

Conclusion

The results of this study show that the CAS program of instruction in and exposure to contemporary visual art has a positive effect on the development of skills inherent in creative thinking and metacognition. The specific skills that were improved in the treatment group were in the areas of the ability to tolerate frustration and delay gratification in the service of remaining open long enough to produce new ideas, insights and combinations, the ability to synthesize observations into a meaningful abstract whole, the skill of making and reporting on detailed observations, and the ability to reflect on one's own thoughts, feelings and judgments.

MOCA's findings suggest that the program might successfully improve students' abilities to work out creative solutions to open-ended problems and to better understand the essence of a problem. These skills are crucial for life-long learning and for success in a variety of careers in addition to those in the arts including technology, science and mathematics. . While these skills are crucial for all children, they have special relevance

for those who have histories of early relational trauma – especially “at-risk” children, including foster children. Given that these skills are not measured by standardized tests and are not directly taught as part of any core curricular subject, our findings suggest strong evidence for the inclusion of arts education as part of the basic curriculum for every child.

In all theories of creativity, there is a consistent emphasis on the need to be able to make connections and links between one idea and another or one domain and another. This ability to bisociate different matrices of thought is an essential element in scientific, mathematical and artistic creativity. The importance of developing the emotional self-regulatory skills that allow for ability to tolerate ambiguity in the service of problem solving cannot be underestimated – this is about the ability to accept frustration and delay gratification in order to stay open long enough to make the mental leaps involved in the generation of new ideas, insights and combinations. This is a crucial emotional skill that involves impulse control. These skills are the emotional underpinnings of the ability to transfer meaning from one area to another and to play with ideas creatively. Such skills are crucial for higher-order thinking and the understanding of the meaning of what is learned. The emotional skills that underlie the ability to imaginatively take a variety of perspectives is the basis for empathy. Coupled with growth in the ability to synthesize disparate elements into a meaningful whole, these improvements indicate that classroom—museum partnerships can have an impact on student learning that might ideally be addressed through contemporary art education.

A Final Word

Interviews with experimental group teachers indicate that the amount of classroom time spent teaching visual arts was not consistent. Teachers devoted from three hours per week to one hour per month or less to delivering the CAS curriculum. The amount of time spent in the museum was identical for all groups. The researchers caution that the findings do not necessarily indicate a causal link between CAS and improved creative thinking and metacognition, in part because many important potential causal variables are unrecorded and hence unobserved. Future studies with larger samples and refined measurement techniques will paint a better picture of the relationship between CAS, arts instruction, and improved creative thinking and metacognition in young learners.

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