Learning in the Visual Arts and the Worldviews of Young Children:

Lessons from Skid Row[1]

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Abstract. This paper reports a research study into the effects of rich, sustained visual arts instruction on 103 inner-city 9 year olds in two major US cities. We use the lenses of social learning theory, theories of motivation and self-efficacy, and recent research on artistic thinking to investigate the programs' effects on children's self-beliefs and creative thinking. The study enlisted a pre-post measure, treatment-comparison group design along with structured observations of participant and comparison group classrooms. The arts students made significant comparative gains on a self-efficacy scale and on an "originality" subscale of a standard creativity test. These effects are attributed to children's engagement in art and to the social organization of instruction including reinforcing peer and student-adult relationships.

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Introduction

The creative process may be one in which children gain command of the brush and learn the mysteries of art making. But sustained creativity also places cognitive demands on the learner – wrestling with technique while processing elements of design and intention, facing the public nature of classroom art-making, and making meaning out of critical and supportive comments from peers and teachers. These sorts of demands may be present in other learning experiences, but children may respond more actively and deeply in the art room than in the classroom. The response may add up to what Abelson calls "hot cognition" (1963). This research explores relationships between participation in high-quality visual arts education and what children believe about themselves and their future prospects.

Preliminary observations of the programs we studied led us to hypotheses projecting positive effects on children's views of the future and their abilities to control important outcomes for themselves. In broad conception, we call these orientations the child's worldview. In measurable terms we are more modest; worldview so defined is closely aligned with children's self-beliefs about their abilities to make things happen for themselves, their capacities to conceive and carry out actions, and their general sense of agency in life. These descriptors of course point to *self-efficacy beliefs* – Albert Bandura's towering contribution to theories of motivation (1986).

We recruited 3rd grade classrooms from public elementary schools in Los Angeles, California and St. Louis, Missouri, USA for this project – 179 children in all. The schools and surroundings are impacted by poverty, crime, drug-traffic, and economic hardship. Participants received regular instruction from highly skilled artists at *Inner-City Arts* (ICA) in Los Angeles and through the *Center of Contemporary Arts* (COCA) in St. Louis. These institutions stand out as oases in their neighbourhoods and city cultures. By public acclaim, both ICA and COCA present vivid symbols of the importance and joy of the arts – attractive physical settings adorned with children's artwork, high-quality facilities and equipment, skilled, enthusiastic teachers who understand children, and an ambiance of creativity and purpose. Apart from joy, industry, and a profusion of art works, we wondered what else these programs bring to the children who participate.

Program settings

More detailed portraits of the Los Angeles and St. Louis research settings may bring to life what we call a sustained, arts-rich instructional experience. Also, the following descriptions help explain why these programs caught our interest.

Inner City Arts (ICA)

> Inner-City Arts is an educational institution serving fourteen schools in a true "skid row" area at the edge of downtown Los Angeles. The facility is spacious, bright, and inviting, with 20' floor-to-ceiling windows. Children's artwork inhabits every wall, railing, and beam. In partnership with the Los Angeles City Schools, classes attend ICA for about 90 minutes, twice per week, for twenty weeks. Our school, which was 99 percent Latino, participated in visual arts classes, which consisted of drawing, painting, and some sculptural work. Professional artists staff the classes and workshops. The classroom teachers often participate as learners, producing assigned works alongside the children. A typical class culminated with a gallery session, where the instructor would elicit criticism and comments from the students on each other's work from the day. In these gallery sessions, the instructor draws students into discussions about higher order issues – symbolism, relations of form and function, aesthetics of line and colour.

Center of Contemporary Arts (COCA)

> COCA directs programs to schools in the public housing projects of St. Louis, where 99 percent of families qualify for public assistance. Our school site was 100 percent African American. COCA's program in our study was an in-school residency program led by a professional ceramics artist that met for one-hour, once per week, for 30 weeks. The children individually produced ceramic and ceramics-based sculptural works, usually created in connection with a story or poem, during the residency. The culminating project was a story-pole, a large clay cylinder that displayed spiralled, multi-scene illustrations of a story. Students had formal, as well as informal, opportunities to reflect and comment on their own and each other's work during these sessions. The instructor modelled techniques of craft, processes of envisioning, problem solving, and writing as the residency went forward.

Considering ICA and COCA together, our inquiry dovetailed with what Maxine Greene (2002) wrote in a recent Ford Foundation roundtable on arts education research – a discussion that spawned this project. Prof. Greene asked questions that do not typically come to mind when we think of either research in arts education or of educational research more generally -- questions captured in the following:

> What can certain kinds of arts-learning experiences contribute to a child's sense of what the world has to offer? How might learning in the arts enrich the shaping of personal identity? Can arts education inspire the imagination of differing cultural realities?

Theoretical framework

This research rests on strong theoretical underpinnings. First, we situate the work among contemporary theories of knowledge acquisition. As we have spoken of worldview and self-efficacy, each construct involves cognitive development and is responsive to the circumstances in which learning occurs. Then we bring the lenses of self-efficacy beliefs to the discussion. We argue that features of the visual arts programs we studied are case illustrations of the nurturing of self-beliefs and self-confidence. Finally, very recent research on what children learn in high quality visual arts education (HQVAE) points to links between the habits of mind "taught" through HQVAE on the one hand and the broader views children have of their prospects in the world on the other.

HQVAE and Learning Theory

Our thoughts about learning in the visual arts begin with the tenets of generalized learning theory. Specifically, we attend to the core ideas of constructivist learning theory (Bruner, 1960), situated learning (Lave and Wenger, 1990), social development theory (Vygotsky, 1978), and collaborative learning (Johnson and Johnson, 1989; Bransford and Schwarz, 1999). Prominent across the resulting network of ideas is the word, *social*. Most theorists reason that learning involves social processes at many levels; another point of agreement is that learning is situated in and mediated by context and culture. And prominent theorists would agree that understanding grows through opportunities to try out, consider, and revise one's thinking. Learning in the visual arts is well suited to all of these ideas. The art studio is a natural laboratory for collaborative pursuit of goals. Students and adults convening to create and present a painting, drawing, or sculpture bring differing levels of expertise and background experiences to the effort – and thus are in a position to teach and learn from each other.

Self-Efficacy and HQVAE

That self-beliefs are tied to human competency is a proposition embedded in most theories of learning and motivation. In the words of Bandura, self-efficacy reflects individuals' judgments "…of their capacities to

organize and execute the courses of action required to attain designated types of performances" (1986, p. 391). The self-efficacious individual has a general sense of agency – confidence in the ability to succeed with plans for the future and in the ability to overcome obstacles. Research on self-efficacy is carried out within specific domains (i.e., mathematics self-efficacy or interpersonal self-efficacy) as well as self-efficacy manifesting in more general confidence in controlling life events and in dealing with uncertainty. No one we are aware of has looked at how learning in the visual arts or in other forms of creative expression may contribute to self-efficacy, although a very few studies report on similar relationships in the arts (Trusty & Oliva, 1994). We pursued this study with a modestly supported contention that it is possible (and even plausible) that the arts would impact an individual's motivation and sense of agency.

Research on What the Visual Arts Teach

An elusive subject in the literature on arts education has been discerning any cognitive developments associated with visual arts education. There has been no shortage of wishful thinking about such things, but we lack systematic, calibrated analysis of habits of mind, thinking dispositions, or self-beliefs affected by learning in the visual arts. A recent study by Winner and Hetland (2006) provides evidence for such developments. They document that HQVAE boosts children's general dispositions to *engage and persist* in their work. If these dispositions indeed prove to be general and lead to accomplishment, then general self-efficacy beliefs may follow. Winner and Hetland also found that learning in the visual arts teaches children to stretch themselves, explore possibilities, and to take risks (2006). The child willing to take risks is open to a future where not everything that could be important is known.

Moreover, our assessment hints that human creativity – here crafting one's own judgments, searching widely for solutions, and modifying goals when presented with opportunities – may go hand in hand with self-efficacy beliefs. Such connections find trace support in the empirical literature, to wit: "There appears to be an underlying relationship between creativity and personal independence, and these qualities are in turn related to high self-regard (Coopersmith, 1967, cited in Trusty and Oliva, 1994, p. 24). Our design and instruments support testing for gains in self-efficacy as well as gains in creativity that the ICA and COCA programs may have inspired.

Design and Methods

This study enlisted a treatment-comparison group design in which learning measures for arts participants were compared to learning measures for comparison students. We used pre- and post- surveys completed by all subjects. And we used regular structured classroom observation to provide reliable information about how the ICA and COCA programs operated.

Sampling. In the ICA neighbourhood, we choose three third-grade classrooms (children ages 9-10) from a public elementary school. We also selected three non-participating 3rd grade classrooms as a comparison group. Because of its location, the school was largely homogeneous with respect to family income (with 97 percent of students qualifying for publicly subsidized school lunches due), ethnic make up (97 percent Hispanic origin), and moderately low achievement levels (averaging at the 21st percentile on state-wide tests of language and mathematics).

In St. Louis, the program was initiated at an elementary school serving an inner city public housing project. All three third-grade classrooms at the school participated. One hundred percent of the participants were African American and 99 percent qualified for subsidized meals. In recent years, between 5-10 percent of this school's students scored at the proficient level or better on the state's language and mathematics achievement tests. Three third-grade classrooms from an adjacent school serving a different housing project served as our comparison group. In all, we obtained usable survey-based learning measures from 179 students, 103 who attended ICA or COCA classes and 76 comparison class students.

Survey Instrument. At the heart of the study was a survey instrument administered to all students prior to the start-up of programs and again within 2 weeks of program completion. At ICA, the intervals between pre- and post-surveys were 20-22 weeks. At COCA, the interval was 30 weeks. The survey items were worded with appropriate-level language to accommodate readers with below-average reading abilities. The scales were replicated from those used in previous studies with students as young as 9 years old conducted by the Principal Investigator (Catterall, 1995) and were originally developed based on the work of Wu (1992) and Ames (1990). Survey items established multi-item scales for general self-concept, general self-efficacy beliefs, and internal versus external attributions for success. Children responded using four-point, Likert scales indicating levels of agreement or disagreement with each statement. The survey also contained four-item scales for elements of creativity based on the Torrance test of creativity (Myers & Torrance, 1964), but were designed for elementary school age students (Auzmendi, Villa, & Abedi, 1996; Abedi, 2002). The dimensions of creativity were originality, fluency, flexibility, and elaboration. We first assessed the percentage of students in each group making meaningful gains on each scale (significant at $p < .05$ using pooled standard deviation of scores for each scale). Then we used tests of significant differences of proportions (Chi Square) to indicate whether ICA and COCA student gains were significantly higher than observed changes in the comparison group.

Results

Table 1 shows the results of our survey scale analyses. The numbers indicate the percentages of students in each group who made significant scale gains. Data are shown for the St. Louis site, the Los Angeles site, and for all visual arts and comparison students, respectively. In the cases where group differences are noted as significant, the differences are robust, $p < .01$.

General Self-Concept. A high proportion of children in both groups, at both sites, registered gains in our general self-concept scale. This is consistent with the widely confirmed principle that children typically develop quickly on all cognitive fronts between the ages of five and ten, and cognitive development underlies the shaping of self-image. The ICA and COCA children show no comparative advantage on this measure.

Attributions for Success. A much smaller share of students made gains in their attributions for success (i.e. toward more internal attributions). Less than one-third of students in both the arts and comparison groups made such gains and there is no significant difference between groups.

Self-Efficacy Beliefs. More than half of the arts students in our experiment made significant gains in beliefs in their self-efficacy. Over one third of comparison students made such gains. The proportion of gainers in the arts group is significantly higher than the proportion in the comparison group (Chi square $(0, .01) > 6.635$; $p < .01$).

Creativity. Generally, between one-third and one-half of students gained similarly on three sub-scales—elaboration, flexibility, and fluency—with no significant differences between arts students and comparison students on any scale, by site or globally. The exception is the originality scale, where the visual arts students significantly out-gained comparison students.

Table 1

Visual Arts Program vs. Comparison Group Students: Percentages Gaining on Motivation and Creativity Scales, Overall and by Research Site.

	N=103 All Visual Arts Students	N=76 All Comparison Students	N=73 LA Visual Arts Students	N=56 LA Comparison Students	N=30 St.L. Visual Arts Students	N=20 St.L. Comparison Students
Motivation						
General Self-Concept	80.4	84.4	76.4	83.0	90.0	90.0
Self Efficacy	**53.9**	**35.6**	50.0	39.6	**63.3**	**25.0**
Internal Attributions for Success	31.4	31.5	37.5	26.4	16.7	45.0
Perceived N of future choices	40.2	45.2	23.6	35.8	80.0	70.0
Creativity (2):						
Originality	**54.9**	**32.9**	**56.9**	**30.2**	46.7	40.0
Elaboration	38.2	34.2	38.9	35.8	36.7	30.0
Flexibility	54.9	60.3	52.8	88.0	60.0	45.0
Fluency	42.2	45.2	44.4	52.8	36.7	25.0

Bold: differences significant at $p < .01$ (Statistic > Chi Square (1, .01) or > 6.635)

Discussion

Globally, we found less development in the arts students than originally hypothesized. However, developments that did register aligned with our hunches and with theories about learning and the acquisition of self-efficacy beliefs. Based on pre- to post- comparative scales, children in the visual arts classes did not gain more than comparison students in generalized self-concept. (We observed gains in self-concept for 80 to 90 percent of students in all groups, so this measure had a ceiling effect.) Nor did most participants grow toward more internal attributions for success over the course of the study.

We did see significant growth for the arts students in two important measures for this study. One was in general self-efficacy beliefs, based on questions probing perceived control over one's future and confidence about surmounting obstacles to achieving goals. We began the study with a hypothesis that creativity might stand as a component of self-efficacy beliefs. In fact, our scales indicate that in addition to gains in self-efficacy, the arts students made comparative gains in one important dimension of creativity: originality. Growth in original artistic expression might be expected to derive from the children's' extensive creative experiences in the ICA and COCA classrooms. But the questions in our originality scale were more general. They did not address art, but rather probed children's beliefs that they could generate novel ideas or novel solutions to problems. There may be ties between advancing originality in art and gaining originality in broader thinking patterns. In our measures, originality and self-efficacy beliefs seem closely related because of their common focus on general life competencies; and their parallel tracking in this study is not surprising.

What evidence supports the idea that ICA and COCA spawned these developments?

In addition to measuring scaled outcomes, we documented children's responses to arts instruction at both ICA and COCA by observing classes at least once per week over the 20 or 30 weeks. We also observed the arts students in their regular school classrooms (or home classrooms) and observed comparison student classrooms every two-three weeks. We used a formal observation instrument to record levels of children's engagement and focus and their relations with both classmates and adults.

Student engagement. Students were more engaged and were able to sustain periods of high focus and high engagement for longer periods of time during ICA and COCA activities than in their home classrooms. During arts classes, the entire class was engaged and focused 15-30 percent more of the time than in their home classrooms, depending on which participating class we observed. Participating students were able to maintain higher levels of focus and engagement in their home classrooms for longer periods of time when compared to their non-participating peers. We could venture a modest case for the transfer of increased focus and engagement from the arts classroom back to the home classroom based on these data. Previous studies have documented the transfer of "motivation" induced by arts engagement to non-arts pursuits of students (Horowitz & Webb-Dempsey, 2002; Catterall, 1999).

Students' Relations with Peers and Adults. We recognized the importance of peer and adult interactions in children's learning processes. Our observation measures show generally positive student-adult interactions for all third graders across the study. While engaged in the ICA and COCA classes, students consistently had more positive interactions with their peers and adults than they evidenced in their home classrooms, but the differences were nonetheless small. An overriding point is that children in the arts classes had the benefit of adults and peers as they learned and developed along the paths that the arts opened up, including some that caused the art students to diverge from their comparison counterparts.

Conclusion

Several aspects of this study should be considered important. First, this work adds to a sparse array of extant studies examining cognitive or motivation-related effects of participation in the visual arts. Second, this study explores changes in participating students over a significant, five-month time span. While this is not a long period of time when it comes to prompting firm or lasting developments of self-belief or perceptions of the world, the time span of the arts-learning experiences we studied far exceeds the duration of many studies in learning and development; we wanted a program of sufficient heft to give hope for significant impacts.

There are two main findings of this work. The primary finding is that participation in a sustained program of HQVAE instruction associated significantly with growth in our indicators of general self-efficacy. The mechanism involves feelings of accomplishment in visual art and diverse positive interactions with peers and instructors surrounding the work; our conclusions support a social view of cognitive development. Self-efficacious children believe they can be agents in creating their own futures and are more optimistic about what the world has in store. The second finding is that the program had effects not only on self-efficacy beliefs, but also on children's originality. We argue that original thinking and self-efficacy may go hand in hand, and that tendencies toward original thinking spawned by artistic learning may transfer to original thinking more generally. Confidence about the ability to generate novel solutions to problems or conceiving

original pathways when facing a roadblock is a workable definition of self-efficacy. Original thinkers might be thought to have expansive, as opposed to restrictive, views of the world ahead.

We conclude that HQVAE encourages sense of self-efficacy as well as creative, original thinking. Such outcomes befit all children. But they are particularly important when considering the lives of underprivileged children for whom educational and social advantages are scarce. These were the children we studied and the children to which our findings most readily apply. Participating in what we called HQVAE allowed these children to feel more confident about their abilities and to have a greater sense of agency – these outcomes entwined with any artistic skills that ICA and COCA cultivated. This begins to sound like an impact on the child's worldview, the ambitious notion with which we began this project. We do not claim to have captured worldview in all of its genesis and nuance, but our work does suggest that high quality arts education may provide children positive views of themselves and their roles in society.

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