Learning in the Visual Arts and the Worldviews of Young Children: Where Self-Efficacy and Originality Meet

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INTRODUCTION

This 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 more than in the classroom. The response may add up to what Abelson calls "hot cognition" (1989). 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 hypothesize 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 descriptions of course point to self-efficacy beliefs—Albert Bandura's towering contribution to theories of motivation (1986).

Notes
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We recruited third-grade classrooms from public elementary schools in Los Angeles, California, and St. Louis, Missouri, in the United States for this project—172 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), Los Angeles, and through the Center of Contemporary Arts (COCA), St. Louis. These institutions stand out as ones in their neighborhoods and city cultures by public acclaim, both ICA and COCA present vital symbols of the importance and joy of the arts—attunement to 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-foot 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 that 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 in 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—syntactic, relations of form and function, aesthetics of line and color.

**Center of Contemporary Arts (COCA)**

COCA brings programs to schools in the public housing projects of St. Louis, where 90 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 ceramic artist that met for one hour, once per week, for thirty weeks. The children individually produced ceramic and ceramics-based mural 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 spiraled, multi-scene illustrations of a story. Students had freedom, as well as informal opportunities to reflect and comment on their own and each other’s work during these sessions. The instructor modeled 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 (2000) wrote in a recent Ford Foundation roundtable on arts education research—a discussion that spawned this project. Greene asked questions that do not typically come to mind when we think of other research in arts education or 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 world view and self-efficacy, each construct involves cognitive development and is responsive to the circumstances in which learning occurs. Then we bring the lens of self-efficacy beliefs to the discussion. We argue that features of the visual arts programs we studied are case illustrations of the matrices of self-beliefs and self-confidence. Finally, very recent research on what children learn in high-quality visual arts education (2004) points to links between the habits of mind “taught” through visual arts, on the one hand, and the broader views children have of their prospects in the world on the other.

**Self-efficacy and Learning**

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 performance” (Bandura, 1986, p. 193). 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 (e.g., mathematics self-efficacy) as well as self-efficacy manifesting in more general confidence in controlling life events and in dealing with uncertainty. No one is aware of how much self-efficacy in the visual arts or in other forms of creative expression may contribute to self-efficacy.
although a 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 a shortage of useful 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 Wiener & Heiland (2005) provides evidence for such developments. They document that art class 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. Weiner and Heiland also found that learning in the visual arts teaches children to stretch themselves, explore possibilities, and take risks (2005). 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 conclusions find trace support in the empirical literature, in that: “There appears to be an underlying relationship between creativity and personal independence, and such questions are in turn related to high self regard” (Cooper-Smith, 1997, cited in Trusty and Oliva, 1996, 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 enrolls a treatment-comparison group design in which learning measures for art participants were compared to learning measures for comparison students. We used pre- and post-survey 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 neighborhood, we chose three third-grade classrooms (children ages nine to ten) from a public elementary school. We also selected three non-participating third-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 lunch data), ethnic makeup (92 percent Hispanic origin) and moderately low achievement levels (averaging at the twenty-fifth 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 to 10 percent of this school’s students scored at the proficient level or better on the state’s language and mathematics achievement tests. The 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 279 students, 163 who attended ICA or COCA classes and 116 comparison students.

**Survey Instrument**

At the heart of the study was a survey instrument administered to all students prior to the start of programs and again within two weeks of program completion. At ICA, the intervals between pre- and post-surveys were twenty to twenty-two weeks. At COCA, the interval was thirty 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 nine years old conducted by the Principal Investigator (Cattell, 1997) and were originally developed based on the work of Wu (1992) and Atter (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, 1974), but were designed for elementary school age students (Azzamendi, 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 paired standard deviation of scores for each scale). Then we used tests of significant differences of proportions (ChiSquare) 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 percentage of students in each group who made significant scale gains. Data is 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 < .05.

**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 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 Belief** 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 gains in the arts group is significantly higher than the pro-
Coeportin in the comparison group (Chi square 
4, 01) = 6.635, p = .03).

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

DISCUSSION

Globally, we found less development in the 
arts students than originally hypothesized. 
However, developments that did register 
aligned with our hypotheses and with theories 
about learning and the acquisition of self-
efficacy beliefs. Based on pre-to-post compar-
ative 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.) Yet 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 con-
trol 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; rather they 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 
pattems. In our measures, originality and self-
efficacy beliefs seems closely related be-
cause 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 SPARKED THESE 
DEVELOPMENTS?

In addition to measuring scaled outcomes, 
we documented children's responses to arts 
instruction at both ICA and CoCA by observ-
ing classes at least once per week. We also 
observed the arts students in their regular 
school classrooms (or home classrooms) and 
observed comparison student classrooms 
every two to 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.

Studer 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 activi-
ties than in their home classrooms. During 
arts classes, the entire class was engaged and 
focused 10 to 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-par-
ticipating 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 this data. Pre-
vious studies have documented the transfer 
of motivation induced by arts engagement to 
non-arts pursuits of students (Hentschel & 
Webb-Demplay, 2001; 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 gener-
allypositive student-adult interactions for all 
third-graders across the study. While engaged 
in the ICA and CoCA classes, students consist-
tenly 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 path 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 examine-
ing 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 dura-
tion of many studies in learning and develop-
ment; 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 arts instruction associ-
ated significantly with growth in our indica-
tors of general self-efficacy. The mechanism 
involved 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-efficacy beliefs children believe 
they can be agents in creating their own futures 
and are more optimistic about what the world 
has to offer. 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 spawncd 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 problem 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 novel encourages a 
sense of self-efficacy as well as creative, 
original thinking. Such outcomes benefit all 
children, but they are particularly important 
when considering the lives of underprivi-
eged 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. Par-
ticipating in what we called novas allowed 
these children to feel more confident about 
their abilities and to have a greater sense of
TABLE 1
Visual Arts Program vs. Comparison Group Students: Percentage Scoring on Motivation and Creativity Scales

<table>
<thead>
<tr>
<th></th>
<th>N = 103</th>
<th>N = 70</th>
<th>N = 73</th>
<th>N = 56</th>
<th>N = 50</th>
<th>N = 20</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Visual Arts Students</td>
<td>All Comparison Students</td>
<td>LA Visual Arts Students</td>
<td>LA Comparison Students</td>
<td>SL Visual Arts Students</td>
<td>SL Comparison Students</td>
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<td></td>
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<tr>
<td>General Will-Concept</td>
<td>83.4</td>
<td>84.4</td>
<td>78.4</td>
<td>85.0</td>
<td>90.1</td>
<td>90.0</td>
</tr>
<tr>
<td>Artistry</td>
<td>23.0</td>
<td>28.6</td>
<td>29.5</td>
<td>30.9</td>
<td>33.3</td>
<td>25.0</td>
</tr>
<tr>
<td>Internal Attribution for Success</td>
<td>31.4</td>
<td>31.5</td>
<td>37.3</td>
<td>28.4</td>
<td>16.7</td>
<td>45.0</td>
</tr>
<tr>
<td>Perceived % of Native Talent</td>
<td>45.2</td>
<td>45.2</td>
<td>33.8</td>
<td>25.9</td>
<td>60.0</td>
<td>70.0</td>
</tr>
<tr>
<td>Creativity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Originality</td>
<td>54.9</td>
<td>32.2</td>
<td>95.0</td>
<td>35.2</td>
<td>46.7</td>
<td>45.0</td>
</tr>
<tr>
<td>Expecation</td>
<td>35.2</td>
<td>34.2</td>
<td>35.9</td>
<td>35.8</td>
<td>20.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Reactivity</td>
<td>54.0</td>
<td>60.0</td>
<td>52.8</td>
<td>88.0</td>
<td>60.0</td>
<td>60.0</td>
</tr>
<tr>
<td>Fluency</td>
<td>45.2</td>
<td>45.5</td>
<td>44.4</td>
<td>32.3</td>
<td>56.7</td>
<td>25.0</td>
</tr>
</tbody>
</table>

*Note: *Visual Arts program = Visual Arts, SL: SL program = Science, Math, Humanities, etc.*

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 ambitions notion with which he began this project. We do not claim to have captured worldwide in all its gen-
us and nuances, but our work does suggest that high-quality art education may provide children positive views of themselves and their roles in society.

**References**


Session A: Summary of discussion by chair: Dominique Château

The first theme to be discussed is autonomous behavior and the role of the individual in artistic education. Should we measure autonomy—the ability to create independently—or self-efficacy—the belief in the ability to take one's life in hand? To measure the former we must examine behavior; to measure the latter, we test the subject's perception of his own ability to succeed. Autonomy may then be linked to self-efficacy, at the same time narrowing down this concept in the twin of a prepos¬


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