How Arts Integration Supports Student Learning: Students Shed Light on the Connections

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Abstract: *Learning in and with the arts has been linked with increased student achievement, but the means by which the arts may support cognitive growth in students is relatively undocumented. Thirty students across ten classes in veteran teacher artist partnerships were selected to help explore the processes and outcomes associated with arts-integrated learning units versus learning processes and outcomes in comparable non-arts units. The student sample evenly represented comparatively high, medium, and low achievers.. Even though we observed differences in levels of arts integration across classrooms, students from all achievement levels displayed significant increases in their ability to analytically assess their own learningfollowing arts-integrated units. No such gains associated with traditional instructional experiences. Students also described their arts-integrated versus non-arts learning differently. Arts-integrated instruction: 1) created more independent and intrinsically motivated investments in learning, 2) fostered learning for understanding as opposed to recall of facts for tests, 3) transformed students' characterizations of"learning barriers" into "challenges" to be solved, and 4) inspired students to pursue further learning opportunities outside of class. We suggest future research avenues based on this work.*

ARTS INTEGRATION AND STUDENT LEARNING

Since the publication of *Champions of Change: The Impact of the Arts on Learning* (Fiske, 1999), research has increasingly examined the correlation between arts learning and general student achievement (Deasy & Fulbright, 2001; Various, 2000). Arts education in its various forms—from traditional art classes to extracurricular arts activities, from music to drama to visual arts—consistently associates with higher individual achievement. At the school level the phenomenon holds true: the 1999 evaluation of arts integration that appears in *Champions of Change* found that Chicago Arts Partners in Education (CAPE) schools showed growth along several different measures of student achievement. And when compared to other schools in Chicago serving comparable student populations, CAPE schools attained stronger standardized test score increases over time on the city's standardized test scores (Catterall & Waldorf, 1999)[1].

The growing recognition of a link between arts learning and achievement creates an emergent, critical question for research, one that presses beyond questions of ***whether*** the arts impact student learning and moves into deeper explorations of ***how*** the arts might facilitate student growth. *If learning with and through the arts is correlated with higher achievement and other*

[1] Thanks go to James S. Catterall, Professor of Education at UCLA, who also assisted in the design and interpretation of this research.

evidence of learning, what special qualities or processes of arts education might be supporting students' growth?

PURPOSE OF THIS STUDY

This study was designed to conduct exploratory analyses that might advance our understanding of students' cognitive processes when engaging in arts-integrated instruction. The project both built on and departed from current explorations of the correlation between arts and achievement. From the standpoint of achievement test score research, the study built on an important question that current research raises:

- Learning with and through the arts does not necessarily include explicit experiences in math or reading; nevertheless, math and reading score improvement, both in absolute terms and in terms of rates of growth, is correlated with arts work in general. These findings suggest that the cognitive processes or habits that arts work fosters can support learning in other areas. *What might these processes or habits entail and look like?*

In their designs to go beyond research focused on test scores, the investigators sought a research design that might address two emerging areas of inquiry:

- Tests are able to measure only a small band of student learning and development. The arts, particularly arts-integrated teaching, show capacities to develop many typically unmeasured facets of student development. *Can some of these facets be identified and assessed, if only in preliminary fashion, to advance the field of arts education research or to suggest ways that future research might explore such questions?*

- To the extent that the cognitive processes and habits gained through arts-related experiences can be identified and incorporated into other educational realms, such knowledge can support overall teaching and learning across many disciplines. *How do these cognitive processes and habits fit within a larger picture of student academic and personal development?*

RESEARCH SETTING

The arts integration model used in CAPE veteran partnerships offers a rich and diverse venue for exploring these questions. Since 1992, CAPE has been working with schools and local arts organizations and community groups from across the city to foster integration of the arts into the daily curriculum. With the support of Chicago foundations and corporations,[2] CAPE began its initial work in 14 clusters of schools, pairing 37 schools with 80 community and professional arts organizations. Of these veteran partnerships, eight clusters with 19 schools remained active eight years later, leading the way for eleven new partnerships to join the network in 1999.

[2] These included the Chicago Community Trust, the John D. and Catherine T. MacArthur Foundation, the Polk Bros. Foundation, Marshall Field's, Prince Charitable Trusts, WPWR-TV Channel 50 Foundation, Reva and David Logan Foundation, and Kraft Foods, an operating company of Philip Morris Companies, Inc.

The veteran partnerships offer fertile environments for studying arts and learning. In some schools, the artists working with graduating eighth graders first met their students in primary classrooms. In other schools, teachers and artists have formed such close professional relationships that they are seasoned team-teachers who know how to work from the strengths of one another. A few teachers in nearly every school so value arts-integrated work that they design the majority of their teaching using these methods. Several schools have moved completely to a "teacher-as-artist" model, applying the arts they have learned during the partnership widely across their lessons, and seeking professional development in other art forms. Each school also has teachers, whether new or reticent, who do not participate actively in the programs. Still, veteran CAPE schools by and large emanate an artistic ambiance often wanting in Chicago Public Schools.

This difference is not simply a function of the individual schools. Teachers speak of how their buildings have changed for the better since CAPE; principals once lukewarm on program expenditures now find ways to supplement arts-integrated budgets. Despite the special qualities most of these schools can boast today, both interviews and demographics attest that veteran CAPE schools offer a fair cross-section of education in Chicago. Twelve have 85% or more of their students receiving free or reduced lunches, which is the city's average low-income rate. The racial make-up of the schools roughly mirrors the city's, though the veteran CAPE schools have slightly higher proportions of Latinos and Anglos, and a slightly lower proportion of African Americans. Eight schools serve racially homogeneous, low-income neighborhoods; five of these are predominantly African American, three predominantly Latino. Three veteran partnership schools are magnets, with a wide range of racial and economic populations. The remaining schools serve a mix of student populations, as Table 1 in Appendix A indicates.

During arts-integrated units, students in these schools are afforded learning environments that aim to engender growth in academic understanding, in arts knowledge, and in affective domains such as cooperation, interest, and self esteem. The learning processes that might be captured in these classes through this study could both offer insights into supports for more traditional achievement brought through arts integration and also for the more complex cognitive developments that arts education has been found to inspire (Burton, Horowitz, & Abales, 1999).

Design and Methods

This research project was designed to investigate a wide range of exploratory questions about students' learning in CAPE arts-integrated units. Three major research questions propelled the inquiry:

1. Realizing that students' cognitive growth may follow different trajectories, the study sought to capture arts learning experiences of students from across the achievement range.

Would students adept at meeting schools' standardized achievement demands differ in their arts learning experiences from those who find traditional achievement measures a challenge? .

2. Since much of the literature examining impacts of the arts compares outcomes between different groups of arts- and non-arts enriched students, the study sought to follow individual students through both arts and non-arts learning experiences.

   Would individual students value (and gain from) their arts-integrated learning differently from how they value (and gain from) their non-arts-integrated learning?

3. The study also sought to ensure that its exploration of students' cognitive processes were grounded in students' own descriptions and assessments of their learning.

   How would students describe the differences that arts-integrated education made in their learning?

All eight veteran partnerships were invited to participate in the research project. In all, ten volunteer teachers from eight schools in six of the partnerships participated. Participating teachers identified comparable academic units that they would teach during the year, with one unit incorporating the arts and the other using more traditional instructional approaches. (An example of "comparable units" is the teaching about ancient Mesopotamia for 6 weeks followed by teaching about ancient Egypt for 6 weeks.) Teachers then selected three students who represented a range of comfort with the traditional academic approaches used in their classrooms -- from those who excelled easily in traditional basic academic tasks to those who found such task very challenging, as suggested by standardized achievement test scores. The thirty students, representing a range and variety of academic strengths within diverse classrooms across the city, provided a wide sampling of students from whom to learn about arts education experiences.

Three kinds of data were collected in each participating class. First, the selected students were interviewed about their learning. Before either the arts unit or the comparable non-arts unit began**,** the investigators interviewed students about how they learned in general, about what most helped them learn, and about what they liked in learning. After both units, the investigators conducted similar interviews, focusing the discussions on the actual learning students had just experienced. These interviews provided information on differences in students' learning processes in the arts and non-arts units, as well as offering some general insight into what different students find helps them learn most.

Second, the investigators asked students to write responses to questions about the topics they were studying: What did they know about the topic? Why did they think it was important? How did it make them feel? These questions were chosen based on Newmann's (1996) work analyzing the relationship between high quality classroom work and achievement. Newman 's research found that high levels of achievement are associated with learning experiences that afford deep knowledge of a subject, require analytic assessments about it, and provide students personal connections with the subject.

Researchers also examined students' writing in these three domains as an indicator of the effects of learning in arts-integrated units compared to learning in traditional non-arts units. In order to

control for students' prior knowledge of the content they were to study, they were asked to write about the topics both before and after each of the units. Students' writing samples from their non-arts and arts units were scored for changes in their depth of knowledge, analytic assessments, and affective responses. Each student's pre- and post-writing sample set was rated on a seven-point scale by two readers to gauge the degree to which students' expression showed development in the domain. Discrepancies of more than two points were negotiated; other scores were averaged.

Finally, the investigators observed the arts-integrated units and culminating events to understand how teachers and artists worked to enhance students' learning opportunities. These observations provide the link between how students experienced learning and what teachers and artists did to create the learning environments that fostered those experiences.

Table 1: Data Collection

Cognitive Processes Interviews	**Content Learning** Compositions	**Contextual Picture** Observations
10 students from each of 3 achievement ranges per class. (30 Pre-interviews)	Same10 students from each of 3 achievement ranges per class.	10 classrooms
Learning in contrasting units:	Pre arts writing sample N=30	2 arts-integrated unit observations N=20
Post arts-unit interviews N=30	Post arts writing sample N=30	1 final event observation N=10
Post non-arts units N=30	Pre non-arts writing sample N=30	
	Post non-arts writing sample N=30	
Totals: 90 interviews	120 writing samples	30 classroom observations

THE SCHOOLS IN THE STUDY

The eight schools in the study, along with the 19 veteran partner schools themselves, reasonably represented the various student groups served by the Chicago Public Schools. Students came from a cross-section of the city's population, including differences in race, economic status, national origin, and neighborhood. At one end of the spectrum was a magnet school requiring entrance tests. The student body of this school was a mix of four racial/ethnic groups, of which over half came from middle and upper-middle income families. At the other end of the spectrum was a neighborhood school in a community historically under-served socially and economically. The student body at this school was 100 percent African American, 96 percent from low-income families. The other six schools fell between these two economic extremes. The student population in the sample schools served 34 percent African Americans, 28 percent Anglos, 11 percent Asian Americans, and 25 percent Hispanic Americans. With the exception of the one

high poverty school, all the schools in the study enrolled lower percentages of students qualified for free and reduced-price lunches than the city-wide average, although the proportions of students in poverty at the study schools were substantial, ranging from about 50 to 75 percent.[3]

The grade-levels, teacher backgrounds, art forms, and academic subjects represented in the sample were wide. At the elementary school level, only the second and fifth grades were not represented. There were two classes each of third, fourth and eighth grades, and one each of first, sixth and seventh grades. One ninth grade high school class also participated. Of the ten teachers in this project, eight were Anglo, one was African American**,** and one was of Latino heritage. Though all were experienced classroom teachers, they had varying degrees of practice with arts integration. Some had been highly active in the partnership from its inception; others had only begun in recent years to experiment with arts integration. Teachers chose various subject areas in the units they selected for the study, including language arts, history, and science; math was not represented. The most frequent art form used was drama; music, dance, computer graphics, poetry, visual arts, and architecture were also represented.

ARTS INTEGRATION AND ARTS ENHANCEMENT

The investigators found important distinctions in the practice of arts integration among classes in the study. The arts units lay on a continuum from those loosely coupled with academic content to those tightly coupled. Tightly coupled units exhibited more academic press and more of the characteristics of effective *integration*. The loosely coupled units involved the arts more as an *enhancement* than as a co-equal content area to be integrated with other academic content.

Degree of academic coupling seemed to align with the way teachers partnered with artists and envisioned their arts units. Teachers who typically "turned over" their class to the artist had more loosely coupled units, as did teachers who created arts units to "enhance" the regular unit. In contrast, classrooms where teachers planned carefully with artists and where the artists were clearly attuned to the academic content, the study's data provide evidence of deeper integration of learning through art forms.

Distinctions between arts-integrated units and arts enhanced units are outlined immediately below. Then a vignette involving a strong arts-integrated lesson follows. .

OBSERVED CHARACTERISTICS OF ARTS-INTEGRATED TEACHING

- ***Clear activities, expectations, and outcomes***: The teacher clearly communicates to students the academic and artistic content areas to be covered, along with the activities and

[3] Efforts to include more of the veteran partnership schools serving racially homogeneous, low-income neighborhoods met with resistance, perhaps a function of the intense accountability pressures in the city to raise test scores, perhaps a function of what some have termed "researcher fatigue" in the city among these schools, for they are nearly constantly under research scrutiny.

expectations for the arts-integrated unit. The class actively pursues the content between artist visits.

- ***Student work habits***: Students understand and incorporate the expectations and student responsibilities that were required of the arts-integrated unit – such as set up and clean up processes, collaborative roles inside student work groups, peer critique procedures, and agreed-upon classroom management rules.
- ***Equal participation, connected instruction***: The teacher and artist participate equally in teaching, explicitly connecting and reinforcing each other's instruction, and modeling coordination, cooperation, and mutual support. Both support what the other teaches in the classroom and are able to shift roles, with the classroom teacher sometimes addressing arts content, and the artist sometimes addressing academic content.
- ***Content integrity***: Artists and teachers both maintain the integrity of their content areas.
- ***Applied arts concepts***: Art concepts are actively applied to investigate and deepen academic content.
- ***Democratic inclusion***: All students have clear, focused, and active roles.

OBSERVED CHARACTERISTICS OF ARTS ENHANCEMENT

- ***Content coexistence (vs. interaction)***: In classrooms that focus on the arts as a means of educational enhancement rather than as an integrated learning experience, the arts and academic content areas coexist but do not substantively interact. The arts and academic content areas are sometimes both addressed during classroom sessions, but they tend to become separated and prioritized. If arts content receives priority, there is typically very little inclusion of the academic content area during arts instruction, with little press for students to consider more deeply the academic study area. The academic content serves primarily as a vehicle for the elements of the art form that the students learn. In cases where the priority is on academic instruction, the arts learning tends to be reduced to activities designed to summarize content, rather than becoming applied concepts for investigating and expanding content.
- ***Division of labor***: Arts enhancement tended to be characterized by a division of labor, with the artist invested in the arts content and the classroom teacher invested in the academic content.
- ***Variations in student involvement***: An art enhancement approach, with its tendency to focus on activities, often resulted in an emphasis on art products, with a corresponding shift of the teacher's and artist's attention onto those students most invested in creating the products.

An illustration of strong arts integration in practice: The Seamlessly Pairing of the Arts and Academics

This illustration is based on observations of a seventh grade teacher and his artist partner who jointly created a six-week unit integrating theatre with study of history. The day before the artist's initial visit, the teacher gave students a brief outline of the academic content area and a preview of the activities and expectations for the arts integration project. Students were no

strangers to these expectations; the school uses arts integration throughout the grades. During the observed artist's visits, both adults participated equally in teaching. The artist concentrated on the basics of stage presence, movement, and dramatic expression, while the teacher reinforced elements of the academic unit that meshed with the arts content area. For example, if the artist noted that appropriate facial expression was important for one to be "in character," the teacher followed up with a comment reminding students to "think how it would feel to be a Mexican soldier fighting to keep your land." The approach enabled students to combine the theatrical and academic elements together for a specific effect: the dramatic body language and facial expression of soldiers in battle.

In all observations of this unit, the working relationship between the artist and teacher was striking in its closeness, coordination, and mutual support. There was a high level of comfort evident between the two. The artist was serious about the arts knowledge students were to master and was not afraid to interact with and expect serious attention from students. The teacher was quick to share classroom authority with the artist. Both were enthusiastic and encouraging about what the other was doing, so much so that roles were often intertwined. The investigators witnessed repeated instances when the artist was explaining or demonstrating a dramatic concept and the teacher would ask students what area of specific content would fit the art concept best. Taking their cue, students eventually initiated independent discussions on the appropriate dramatic interpretations for the specific content point they were learning.

In fact, students' intellectual and emotional engagement was notable for its earnestness and enthusiasm. Even shy and limited English proficient students participated fully in front of their classmates. One student the investigators observed during regular classroom times had evident self-control difficulties; during the artist-led classroom visits, he redirected his energies in more acceptable ways. Students also came into the artist's segments with a high level of academic content knowledge, indicating much preparation during regular classroom sessions. Working from a script, supplementary content materials, and independent research, students easily embedded their knowledge within the artist's lessons on theatre. They worked equally well in whole groups and small groups led by the artist or teacher, or even independently in work groups.

As a culminating event, the class staged a live performance in the auditorium for the school's upper grades and students' parents. (Across all sample classes, the investigators found that final performances or exhibits staged for a broader public audience greatly enhanced students' commitment to their work.) This class' final project was a highly polished stage enactment complete with costumes, set changes, and flawlessly remembered lines that reflected a deep understanding of the content. The production required very little directing from either the teacher or artist. Students "owned" the artistic production, replete with highly personal interpretations of the historical content they had studied.

Sightings of such seamless pairing of the arts with academic content areas have not been the rule in the investigators' work in arts education in Chicago schools, but the portrait presented here from this sample class was common enough to indicate its practicality for classrooms across the city.

THE OUTCOMES OF ARTS-INTEGRATED LEARNING

This study was designed with a student writing component in hopes of learning more about students' growth in key domains of authentic achievement: depth of knowledge, analytic interpretations, and affective connections (Newmann, 1996).[4] For both the arts-integrated and non-arts units, scorers assessed the change in the pre- and post-paragraphs that students wrote addressing each of the three domains. Scores of +3 were awarded to sets of paragraphs whose post-writing evidenced at least 3 additional concepts related to the domain; scores of –3 were awarded to sets of paragraphs whose post-writing evidenced 3 fewer concepts related to the [redacted].[5]

Evidence from Students' Writing: Depth of Knowledge

Following Newmann's and colleagues' 1998 guidelines, investigators judged students' growth in depth of knowledge by examining the degree to which the writing was elaborated, including details, examples, reasons, and/or generalizations. The responses students provided to the writing prompts provided little evidence of differences between knowledge acquisition in arts versus non-arts units. In general, students demonstrated neither more nor less content learning when comparing arts and non-arts units as measured by this sample of writing.

The methodology itself could have accounted for the largely unremarkable writing samples in this domain, for students in the majority of instances provided similar paragraphs about the subject matter and its importance in their post-unit writing samples as they had in their pre-unit writing samples. It appeared as if students approached this domain of the writing samples as a test, responding to the prompts with the overview information about the units that perhaps they had been provided by their teachers. As was the case for each of the three discrete writing domains, for students of all academic achievement levels in the sample there were no statistical differences between the development of their depth of content knowledge in arts versus non-arts groups. Nor were there any striking patterns of difference between the groups. Students whom teachers had identified as academically adept were slightly more apt to record more detail in their post-arts units than in their post-non-arts units, but the differences were minimal.

Evidence from Students' Writing: Analytic Interpretations

To assess student's growth in their analytic interpretation, investigators looked for evidence of interpretation, analysis, synthesis, or evaluation of the subject matter. When pre-post samples were scored according to the 7-point scale, allotting a numeric credit for each instance of analytic

[4] In other similar research conducted by Karen DeMoss on the cognitive effects of a school-museum partnership, students were asked to write pre- and post- essays that were scored on these same domains, and the approach was quite effective in capturing students' growth (See Terrassa, Jacqueline and Karen DeMoss (2001). *Thinking in the Art Museum: Using Writing to Measure Student Growth.* Current Trends in Audience Research and Evaluation. 14: 13-24.) Because of time constraints and the range of ages for this CAPE study, this study asked students to write *paragraphs* addressing questions related to the domains rather than complete essays. This methodological shift appears to have diminished the ability of writing samples to capture students' growth.

[5] The actual writing prompts are shown in Appendix B.

interpretation, investigators did not find statistical differences between non-arts or arts units in growth in students' analytic interpretations. However, a clear qualitative difference in the arts unit samples versus the non-arts samples emerged. At all three points on the achievement spectrum, post-arts writing samples offered more developed analyses of the importance of the subject matter. In non-arts units, when students did offer analytic interpretations of why the subject matter was important, they most often provided explanations that focused on extrinsic fact accumulation-oriented purposes, as the examples below show:

> *Because if you learn about the early explorers, we can grow up to be explorers. And we learn about our history. (3rd)*
>
> *It is important because kids need to know about the solar system because we would never learn about the solar system. (4th)*
>
> *I think research might be important because in situations you might have to look for history, records, or files on a certain thing, which is research. (8th)*

In contrast, the tenor of students' analytic assessments was quite different after arts units. Following their final events, students were more likely to provide statements making causal links between the subject matter and society in general or their own lives in particular. Their assessments of the subject matter went beyond the practical, moving into realms that could affect their actions and values in positive ways:

> *I think that this subject is important. If a person does not know that a tree gives you oxygen, they may cut down trees more than they have to. (4th)*
>
> *Narrative writing might be important to maybe learn more of your inner self, to help you express yourself and to help you understand what you are writing and doing. (6th)*
>
> *Romeo and Juliet was important to learn because they taught many people who have read this book that if you love someone, nothing should stop you. And you shouldn't be so judgmental about different races or different people. You should respect all people the same way. (9th)*

This qualitative difference was most prominent in the analytic assessment paragraphs, but the investigators had noted such commentary in the other domains as well. To gauge the extent to which the writing samples taken as a whole might demonstrate stronger analytic assessment growth, scorers rated the writing samples holistically for this quality, incorporating all three paragraphs. This analysis demonstrated a statistically significant increase in the frequency of analytic assessments after their arts units compared to their non-arts units. In non-arts units, only 37% of students' responses offered any kind of analytic interpretation of the subject matter's importance. Most of the time students simply repeated content that they had learned. After arts units, however, 61% of the students offered their analyses of why what they studied was important. These differences were consistent through all achievement groups, as Table 3 demonstrates.

Table 2:
Percentage of Student Writing Responses Reflecting
Analytic Interpretations of the Importance of the Subject Studied,
By Type of Unit and By Student General Achievement Level.

Student Achievement Level	Non-Arts Units	Arts Units	Percent Difference
Highest achievement*	44%	78%	78%
Medium achievement*	44%	72%	66%
Lower achievement*	33%	56%	70%
Average	37%	61%	71%**

* As identified by teachers when asked to select students who represented a range of competencies as traditionally measured in academic subjects

** Statistically significant difference at $\leq$ .01, one-tailed t-test.

Students at the lower end of the traditional achievement range offered fewer analytic interpretations across the board than their counterparts, but the rate at which the arts units fostered their analytic assessments was slightly *higher* than students at the middle areas of the achievement spectrum. Indeed, arts have been found in national samples of students to be associated with a smaller achievement gap (Catterall, Chapleau, & Iwanaga, 1999). Facilitating students' analytic interpretations is perhaps one way in which arts may help foster increased student achievement.

Evidence from Students' Writing: Affective Connections to their Learning

To assess students' growth in affective connections, investigators examined whether the writing samples in this domain shared personal experiences, feelings, or narratives that students associated with the area of study. This domain evidenced the largest differences in overall gains between arts and non-arts units, though the differences did not reach statistical significance. Statistical non-significance was perhaps due to sample size, or perhaps because students in the middle ranges of performance on formal academic achievement measures posted slightly higher affective scores in their non-arts units, suppressing the overall strong effects in the other two student groups.

In particular, students at the low end of the spectrum expressed markedly more explicit connections with the subject matter after studying their arts units than their non-arts units. In both arts and non-arts units, they articulated very general sentiments in their pre-writing about the subject matter they were to study. However, their expressions about their learning after the arts units demonstrated more positive associations, while post-non-arts samples often noted discouragement.

This seventh grade student's writing samples offer a clear illustration of the various kinds of differences the investigators found apparent across the sample. The student had been selected as one of those in the class challenged by formal academic achievement measures. The non-arts unit was a study of the American Revolution; the arts unit was a study of the Mexican-American War. In the pre-writing samples for both units, this student indicated an interest in learning more and situated his expectations within the topic to be studied: the wars were "important" and the introductions made some "sense" to him. As would be expected from pre-writing samples from units so similar in nature, little substantive difference between the two exists, with the exception of slightly more detail in the writing about the American Revolution, a much more common topic, and one the student likely had much more familiarity with.

Non-arts Pre-Writing Sample, Grade 7:
I think that the subject is interesting. People should care about these kinds of things in the past. It's good to know new information. This is important to the history of the United States because if there were no revolution then there wouldn't be freedom from Great Britain.

Arts Pre-Writing Sample, Same Student:
This subject makes me feel like learning more about the Mexican War. I would like to study more about it. At first I didn't know much but then after learning a little about it, it made more sense to me.

The post-unit writing samples, however, diverged completely in their tone and content. Despite his initial interest in the topic and his appreciation for the freedom gained during this historical period, after the non-arts units, the student determined the subject was "boring" and no longer had any interest in it. Rather than offering any explanation about what was boring, he used the same sort of language he had in one of his pre-writing samples about the topic making some "sense." The pre-writing sample actually had offered more of what many might hope a student would say after studying the American Revolution:

Non-Arts Post Writing, Same Student as Above:
At first I didn't like talking about this subject because I thought it was boring. I still do think it is boring but I guess I can grow into it if I try. After learning about this it kind of made some sense.

After the arts unit, however, the student clearly indicated his personal connection with what he had learned. While he did not say he "liked" the topic in the sense that it was fun or edifying, he indicated that the unit made him think and "ask a lot of questions." He formed conclusions about the subject matter that carried over into his sense of what was wrong and right:

Arts Post-Writing, Same Student:
After learning about the Mexican-American war it made me feel like it was bad and it made me ask a lot of questions. I think it was bad to fight over a little land. It's a good thing we don't have any more wars.

Unlike the non-arts unit, the arts integration unit had allowed him to engage the topic of a significant war in U.S. history in a way that afforded him access to his own reflections about the era and its implications for us today.

How Arts Integration Affected Students' Learning Experiences

There was no doubt that students liked the arts experienced tied to this study. Over and again, they spoke of how much they enjoyed their arts units. However, it was not *simply* their enjoyment that would justify arts integration as a major educational approach. The 30 students in this sample, across their 90 interviews, provided ample evidence ***beyond enjoyment*** for using

arts to enrich their learning. The investigators found three clear, almost universal themes when comparing students' discussions about learning in general, learning in non-arts units, and learning in arts units.

- **Improved Learning Environments:** Students' learning in arts-integrated units offered them methodologies and class climates that liberated their learning from traditional boundaries and inhibitions. These learning experiences translated into students' assessment of their learning as deep understanding, as opposed to simply remembering information for tests.

- **Engaged Content:** The arts work they participated in transformed their experiences of the academic content mastery from one of disliked difficulty to one of constructive challenge, potentially indicating arts integration as a mechanism for retention of students' engagement in the learning process.

- **Broadened Learning Communities:** Arts-integrated units broadened students' experiences of learning, extending the boundaries for learning well beyond the traditional classroom.

Improving Learning Environments by Liberating Learning Approaches

What is "Fun?" From Entertainment to Engaged Learning

During the investigators' years in arts evaluation work in Chicago, students routinely have spoken about arts learning as "fun." The study sought to parse out what students might mean by "fun" by probing their enjoyable experiences in arts units and in learning in other contexts. In response to questions about what makes learning fun, students have a great deal to say. Across all grades, groups, and learning experiences, they emphasized that they like learning; learning makes them feel good. The similarities, however, stopped there. Students provided drastically different examples of the "fun" of learning depending on which experiences they recalled.

"Fun" as the Teacher's Efforts to Entertain:

General Assessments of Learning

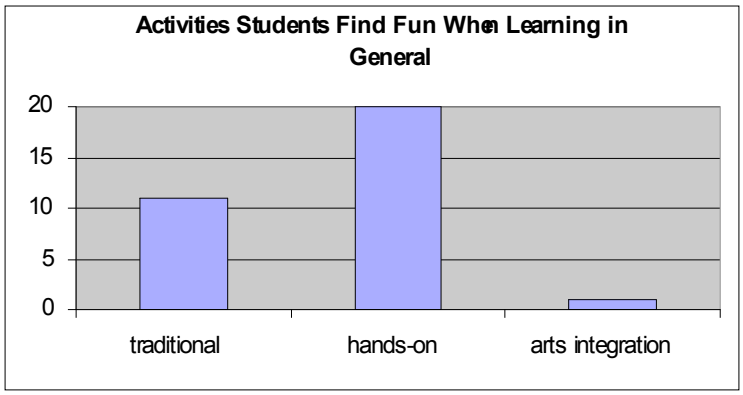
In their first set of interviews, students spoke about what made learning enjoyable in general. A handful of students noted different favorite subjects, but most students talked about their teacher's approaches. Many students spoke of teachers' personalities or efforts to make learning fun for students, as this eight grader noted:

> *It's the way that the teachers put it. Some teachers put it boring, and some teachers put it more fun and interesting. Like instead of just reading out of a book, they tell more and just help you learn about things. It makes it more fun when the teacher puts more energy into it.*

Students appreciated teachers who told jokes, sang songs, and generally made them relaxed in their learning. Throughout these interviews, students' sense of the "fun" of learning was heavily dependent on the teacher.

Students also recognized another way that teachers made learning fun for them: by providing "fun" learning activities. For all three sets of interviews, the investigators classified learning activities into traditional, hands-on, and arts-integrated. Traditional activities included teachers' presentations, class discussion, taking tests, and reading. Hands-on activities included projects, group work, games, experiments, and field trips. Arts activities included visual arts, dance, drama, and music. With no explicit lesson as a reference, students were prone to list traditional and hands-on activities as "fun." As Figure 1 demonstrates, students seldom cited arts-integrated work in their independent recollection of their fun learning experiences, perhaps because they experience these units relatively infrequently. They do, however, cite hands-on activities nearly twice as frequently as traditional activities.

Figure 1



"FUN," AT BEST, AS LEARNING: NON-ARTS LEARNING EXPERIENCES

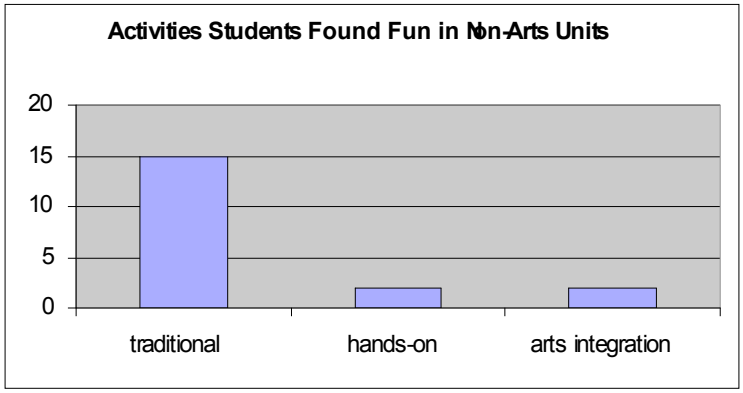
After students had completed their non-arts units, they provided a completely different assessment of what was "fun" in their learning, for they had little to draw from in these units beyond lecture, reading, and discussion. They appeared to accept the parameters of the traditional classroom, tying the "fun" of learning into whatever it was that they did in class:

> *I learned more about the moon and the earth and the sun. I like to learn new things and I like outer space and all that stuff about planets. (4th grader)*
>
> *We did worksheets and when we finished reading a chapter we talked about it. I liked talking about it. It helped me with the test we had. (6th grader)*

As was common among students in the non-arts interviews, the sixth grade student was willing to equate the practical benefits of helping on a test with the unit being "fun." In general, the non-arts unit had many more students cite the subject matter or the fact that they "learned something" as the fun aspect of the unit rather than the particular activities they engaged in. Contrary to how popular media frequently portrays youth, students in the sample valued learning and, absent any particularly memorable activities, interpreted "fun" as an opportunity to learn.

Figure 2 demonstrates a striking shift compared to their general discussion of learning in what they had experienced and could talk about in their non-arts units.

Figure 2



Additionally, several students had little to say about the unit being fun, commenting instead that they didn't enjoy the unit, as this 9th grader explained:

> *Um, nothing. It was really boring, kind of dry. I'm glad I learned it, but it was not fun.*

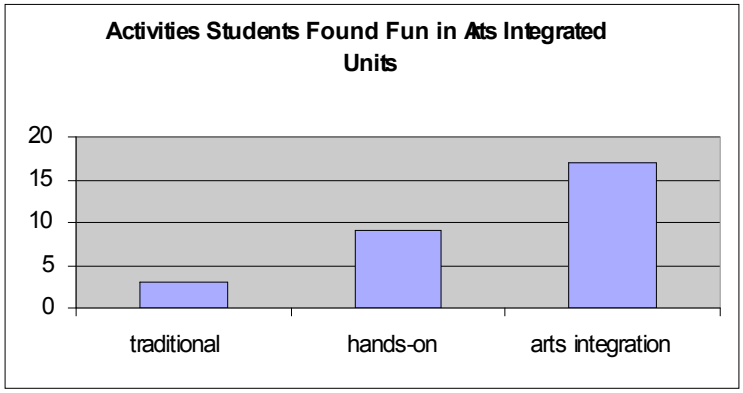
"FUN" AS UNDERSTANDING AND ENGAGEMENT: ARTS INTEGRATION EXPERIENCES

No claims of boredom surfaced in interviews discussing students' experiences in arts-integrated instruction. Students were lively and explicit in describing the enjoyment they received from their arts activities. They often made comparisons between their arts activities and more traditional lessons, greatly preferring the arts as a host of students made clear:

> *The play was more interesting because we get to act it out and that's more fun than just reading about it. (7th)*
>
> *It was better than just sitting down and writing all the time. (6th)*
>
> *It was better than reading about it. It makes it easier to understand. We are actually doing stuff. (7th)*
>
> *I liked talking with the puppet and moving around with them. My teacher does this stuff with us because we are her special class. It's funner doing it than sitting at my desk reading about it. (4th)*

What these students all shared in their discussions of their arts integration commentary was a common appreciation for active learning, learning in which they could participate. They retained language about learning and understanding, but they readily admitted that they liked this work more than what they experienced in traditional units. As Figure 3 demonstrates, students once again cited hands-on activities as fun, but the arts integration work exceeded even that preferred learning method.

Figure 3



Fun, Engagement, and Helping Students' Views of Their Own Learning

These more active learning environments had a clear relationship with students' own assessments of their learning. In both arts and non-arts interviews, students clearly articulated the ways that the activities they engaged in helped them learn. What was surprising was students' differing expression of the goals of their learning. In non-arts units, students were clear that "learning" meant getting good grades on worksheets and tests. They found reading, worksheets, and taking notes to help them more than any other kinds of activities in the non-arts units. What was critical in their own learning assessments was that learning had to do with getting correct answers and remembering pre-determined information:

> *My teacher read the book to us and gave us a test to make sure we understood what it was about and then she would grade it. (1st)*
>
> *The book my teacher gave us. She read it and I was following along and I started learning the most. It had a bunch of answers in it. (3rd)*
>
> *Studying. She would give us social studies tests. She would give us papers and we would study in the classroom. (3rd)*
>
> *The worksheets. I had to look up the answers. We just kept going over it every day and I started to get it. (6th)*

These examples are not intended to imply that students do not need to learn information; indeed, in order to engage higher order thinking skills, one must first have some information to think *about*. The students make clear, however, that they perceived the learning goals differently in arts and non-arts units. Though teachers had identified these units as comparable, as requiring similar cognitive processes, students did not experience them as similar. In arts units, students spoke in terms of understanding, not remembering information:

> *We played games with the artist to help us focus on these things. We put our act together and that helped us learn the most. It was a lot of work putting the acts together and remembering the information, and he helped us a lot. (8th)*

> *Making the ABC book about structure. It made me think really hard about the stuff, and that told me a lot about structure. (3rd)*
>
> *Acting out or talking about it, like after you see it and talking about what was different about it, and how you help each other see what was good about it and it helps to talk about it. (6th)*

In these units, students talked about thinking, judgment, and putting things together—more complex processes than learning the information in worksheets for tests. One student identified as a lower academic achiever according to traditional measures had a theory about learning through the arts. For her, it was the most important learning tool in the unit by far:

> *Just the acting part, that's it. I wish we had more of it. Unfortunately, we don't. The teacher probably wanted us to use our heads more instead of acting it out. Acting it out helped me enjoy it more, and I got more out of it. (9th)*

Interestingly, this student "got more out of it" than she does in traditional approaches, but she also thinks that learning in this way does not "use her head." If students predominantly experience traditional learning environments throughout their school careers and assess their learning experiences as the sample students did, it is quite possible indeed that they come to equate learning exclusively with work that is measured by worksheets. When pressed to identify parts of learning they did not care much for, the sample students often found the mainstays of their traditional learning methods—reading the textbook, concentrating on unfamiliar subject matter, tests, and lectures—to be boring, both in their general interviews and in their non-arts units in particular.

> *Reading out of the textbook is really boring. You don't remember the stuff. (8th)*
>
> *Tests make it boring. They can be very hard. (3rd)*
>
> *Being bored was hard. It was kind of like a job. (9th)*

None of the arts-integrated interviews assessed those units as boring; to the contrary, they noted that without the arts, the work would have been boring, but because of the arts work it was not. One student provided an interesting depiction of the spectrum from boring to interesting, beginning with the traditional book/lecture, moving to the entertaining teacher, and closing with students' acting out an event:

> *They [the artist and teacher] weren't just a boring old history teacher saying "next we are going to blah, blah." One time my teacher was doing the Chicago Fire and she threw bits of paper up to show how the fire spread, and it was really cool. We pretended there were flames about us, and it was just real interesting. (3rd)*

This quote captures the kinds of mechanisms that students identified as key in what we describe as the liberation of their learning environments. Through an activity designed and often initiated by the artist or teacher, students are provided a framework within which to explore the information that they had studied about the subject. They move beyond being entertained by an enthusiastic teacher into an experience that they must participate in and process personally. That engagement via the arts activity creates a mental *interest*, something beyond a recollection of the information.

From Barriers to Challenges

One of the more intriguing findings of the study related to students' outlooks about what makes learning difficult. When students were discussing what they found hard about learning, they evidenced an attitudinal shift regarding the nature of difficulties in their general learning experiences and non-arts units as opposed to their arts-integrated units. Further, they redefined the word 'hard' when discussing the arts-integrated units.

When students talked about what made learning hard for them during traditional non-arts classroom activities, several distinct themes emerged: feelings of isolation, a sense of competition with their peers, and ambiguous viewpoints of who was to "blame" for the difficulties. Students' experiences during their non-arts units frequently involved instances of working in isolation as an individual learner. They used the first person singular whenever describing what they found hard, such as "*I* don't understand what *I* read," or "The subject is too hard *for me*" or "If *I* don't pay attention" or "*I* have never studied it before." Many specifically talked about their difficulty working alone:

> *When we had to read it by ourselves and try to understand it by ourselves. I would read it and have trouble answering the questions. (3rd)*
>
> *When it is something I don't know or have to read in a book by myself, it is not very easy. I need a lot of help. Some stuff is hard if I don't know it. (4th)*

Some students talked about the negative feelings they experienced when they felt cut off from assistance when tackling new or difficult material. One first grader spoke of her unhappiness while reading in class:

> *I kept getting mad because, well maybe because some folk tales have really hard words and I have to read them. I asked my teacher and she wouldn't help me. She said to sound it out. (1st)*

An eighth grader voiced a similar frustration:

> *Just the way some teachers teach. They just tell us to read the stuff and don't really explain it to us. We just have to read it and try to figure it out and just because you can read it, doesn't mean you understand it. It makes it really hard. (8th)*

Individual students felt themselves in competition with their classmates, and not just over grades. Competition took more subtle forms—who could finish tests and assignments first, vying for the teacher's attention to get questions answered or getting lesson content repeated.

> *The teacher can only help a few of us. When the teacher is all over the class she does not have time to explain things to you because they have to have time for the other students. (6th)*
>
> *When I ask for help, the teacher says hold on and they don't really help me and I don't really understand it the first time they went over I and I need more but they are too busy. Of course I'm not going to get it right. It depends on what the teacher does. (7th)*

The last line of that quote is noteworthy in its implication for personal accountability. Rarely did a student, when discussing themselves as isolated individuals working within traditional classroom configurations, admit either responsibility for or control over how hard they found a

particular learning situation to be. Only three students noted that learning probably would not be so hard if they paid closer attention in class. Most blamed the teacher for being too dull, for not explaining the material adequately, for providing too much information, or for not providing enough time. Still others noted that the problems lay in the subjects, which were either too hard, too boring, or too new, as students had "never seen this before." And of course, there was the occasional general grousing:

> *It's hard when I have to read something like a textbook. I don't like to read. I don't like to read anything. I read half a book and then I have to stop. I like to ride my bike. (9th)*

At no time during the general learning and non-arts interviews did students discuss what makes learning hard with anything other than a kind of resignation: math is hard, tests are hard, remembering stuff is really hard. Other than some student suggestions that paying closer attention in class or simply working harder might help, the circumstances that make learning hard were treated by the majority of students as difficult to change.

After their arts-integrated units, however, a significant change took place not only in what students said made learning hard, but in the very characterization of what 'hard' meant. In fact, a third of the students responded that nothing in the arts unit was hard while another third said the arts component of the unit itself was hard. Only this time, the term hard seemed to imply a challenge rather than a barrier.

> *The hard part was trying to make it into a play. I thought that was hard because we had a really long time period and researching it took a lot of time and work. It was hard to get the group to agree sometimes. We dealt with it by breaking into partners and that seemed to help us come together. We had to negotiate. (8th)*

> *The thing where you make up the story and people in the group say they don't want that in their story so we had to get the teacher but she said we had to solve it and we had to talk about what would go into the story. It was hard to get everyone to say ok but we did. (4th)*

It may be significant that much of the discussion after the arts-integrated unit centered on working in groups and how to make the group function better to deal with tasks of research, writing, organization, and other academic activities. Students explained how they solved their learning challenges rather than listing the barriers that hindered their learning. Even the students whose arts-integrated units required working alone did not complain about inattentive teachers, boredom, or dislike for the subject. They spoke instead of the difficulty of the assignment, explaining how they managed to accomplish it.

> *Sometimes you had to write dialogue and it was hard because I'm not used to writing dialogue. It was harder for me than something I already know. I had to put myself into someone else's head and try to talk for them. That was really hard for me. (6th)*

Observations of final performances in the arts-integrated units corroborated students' own assessments. Students who had difficulties controlling their behavior and staying on task performed their parts in final events with seriousness and competency. They incorporated artistic elements that the appeared to have ignored during class. As students across the board indicated in their interviews, the kinds of activities that the arts provide engage children more

deeply in their learning by creating an intrinsic responsibility for the learning activities. This finding held particularly true for those children hardest to reach by traditional approaches.

Broadening the Community of Learners

The broader sense of learning students expressed as a result of their arts integration work fits well with the testimony of CAPE teachers interviewed by the investigators previously, and also supports the learning theories that lie behind arts integration (Burnaford, Aprill, & Weiss, 2001; Catterall & Waldorf, 1999). Students' interviews also offered new evidence that their arts integration work actually translates into concrete instances of using skills conducive with "lifelong learning." First, during arts integration units students found a wide variety of resources to help them in their learning. Artists, friends, work groups, and printed resources all found their way into students' lists of who helped them learn the most—these in addition to teachers and family members. In non-arts units, students only cited teachers and family as sources of help for learning. This broadened sense of resources for learning would naturally support students' general capacity to learn beyond the classroom.

Indeed, students in arts-integrated units actually did pursue more independent learning about the academic subjects than they did in non-arts units. The investigators asked students if anything in the units they had studied had made them want to learn more about the topic outside of class, and, if so, how they had pursued their new interest. In non-arts units across the grade levels, many students were quite forthright in expressing their lack of interest in pursuing the subject further.

> *Not that I can remember. I remember that I kind of, well, the gingerbread man, well, actually no. I didn't want to learn anything else on my own. This was a school lesson and I learned it all at school. (1st)*
>
> *Not at all. I studied them at home but that was for a test. I wouldn't have done that on my own. (9th)*

In non-arts units, just over half the students did speak of learning more on their own, but in nearly every case their explanations of how they would learn on their own were hypothetical: Only 27 percent of the students actually acted on their inclinations. Most "might" or "would" or "could" go to the library or to the internet for information; they "maybe" would do some research on their own, but only a few actually read any extra information or applied their new knowledge at home.

The arts-integrated units had quite a different effect on students. Not only were fully 80percent of the students inclined to seek opportunities outside the school to further their knowledge about the units they were studying, but fully 42 percent acted on those inclinations.

> *I read at home. There's a computer web site where there is a big huge book that I can find. I found the folktales that I want to read and I read them off the web site. (1st)*
>
> *How the government went all together and how everything worked, and with the election going on I wanted to learn about it more. Well, I would watch the news and talk about it with my parents. I would learn more and stuff that I never knew I would learn. (3rd)*

I would play at home with my teddy bear and then I told my sister to do it with me and she did it and we wrote it on a sheet of paper and read it for my momma using my teddy bear. (4th)

DISCUSSION

The last decade has seen vigorous debate about the possible roles of the arts in education, with a wide variety of disparate opinions shaping the research agenda on arts education in ways that have polarized some in the field. Those supporting arts as an independent discipline muster evidence that there is little support that the arts supports cognitive growth; students simply are having more fun in classes when they can "do" art, and the result is a watering down of art as an independent discipline. Those supporting the infusion of arts embark on more finely tuned studies of cognitive outcomes for children in arts learning environments, seeking to further document the impact of the arts on other academic outcomes. This research sought to set the dichotomous discussion aside, at least temporarily, to explore whether and how children might process and understand information differently when learning via the arts. Our hope was that in examining cognitive processes, the study might be able to support a different approach to examining the role of arts in learning writ large, not simply in terms of discrete disciplinary boundaries.

The sample of children in this study, from a wide variety of socio-economic, age, and achievement backgrounds, working in a variety of art forms and in a variety of academic subjects, strongly support the notion that effective arts integration can, indeed, foster increased learning, including—and in some ways particularly—for lower-achieving students. These children served as their own control group, providing contrasts and explanations for the differences in their learning processes and outcomes in arts and non-arts units. The study thus is not subject to the kinds of selection biases in many correlation studies.[6]

The sorts of learning that the study found arts integration to support were in some ways different from what teachers had thought we might find. They had spoken of how the increased engagement students evidenced in arts units seemed to help them remember more; the data showed little evidence of any increase in the amount of content knowledge that students gained from their arts units. However, students' knowledge from the arts-integrated units did differ in *kind* from their non-arts knowledge: it was more analytical and more oriented towards conceptual understanding than factual recollection. Further, their affective connections with the content they studied were generally deeper and vastly more positive and personal in their arts units than in the non-arts units. These findings suggest that the arts can play a critical role in the general culture of children's learning, providing more positive and meaningful connections with academic work, connections that may have ancillary effects on long-term learning motivation.

[6] Some might argue that teachers, by virtue of selecting arts and non-arts units for an arts integration study could bias the results in favor of the arts units by the nature of their teaching. However, Chicago at the time of the study was under high stakes testing policies, and teachers more often spoke of the critical need for time in the year to do "regular" teaching as opposed to the arts integrated units. It is unlikely and perhaps absurd to imagine that they would have intentionally provided inferior learning experiences in the non-arts units to favor the study.

Future Research

Just how students' arts integration learning provides these cognitively different experiences is worth further study. Through this study, student voices about their arts-integrated experiences provided evidence that the arts support learning in ways that are critical to fostering more self-sufficient yet interdependent learning. Here the study's four major findings are linked with questions worthy of further investigation – generally a program of study that would to examine the processes that facilitate students' cognitive engagement:

- **Intrinsic Learning Motivation:** Students took more responsibility for their learning in their arts units than their non-arts units. Rather than depending on teachers' capacity to entertain and keep them from being bored, students found the arts to bring enjoyment to their learning irrespective of the teacher's personal style.

  Research could explore a more complete set of dimensions of achievement motivation that arts integration may activate – intrinsic and extrinsic rewards, attributions for success or failure in school, cognitive engagement, and aspects of self-concept.

- **Scaffolding Analytic Thinking Skills:** Students' enjoyment of the arts differed from their enjoyment in other learning contexts and was more than simple "fun." They liked the challenge that the arts provided them as they worked to apply their content knowledge in different artistic ways. Through the arts, they actively engaged content in ways that reflected more complex cognitive processes. Their learning was not simply targeted for a particular test.

  What mechanisms link content knowledge as measured by traditional achievement tests and analytic thinking skills? Do the arts contribute to increased achievement because they enhance habits of mind as Perkins[7] suggests?

- **Democratic Access to Intellectual Challenge:** Students approached challenges in the arts units more positively than challenges posed by non-arts units. The arts appeared to remove barriers of competition and correctness, allowing students the space to solve problems in ways that were suited to their own understandings and goals, rather than in one "right" way.

  Do the arts foster more democratic learning goals by diminishing students' perceived needs to compete, as Kohn[8] suggests students need, while simultaneously supporting increased academic achievement as measured by standardized tests? Do the arts promote productive forms of competition? Dysfunctional forms of competition?

[7] See Perkins, 1994.
[8] See Kohn, 1992.

- **Independent Learning, Beyond School:** Students were more apt to have connected with the content knowledge in their arts units in ways that led them to pursue knowledge independently, outside of class.

  Can the arts develop habits of curiosity and inquiry in students, supporting their overall cognitive growth by bridging learning experiences within the school and life experiences outside of school?

The findings of this study are limited in that they are based on one partnership's approach to arts-integrated education in one school district. Nonetheless, this study drew on an ample range of student backgrounds and of the social and economic hurdles representative of student lives in urban centers more generally. And the findings were robust. Both the nature and consistency of the study's main conclusions (across grade levels, achievement levels, academic subjects, and art forms) strongly suggest that similar results might emerge from similar activities to integrate academics and the arts in other settings. In this case, the arts contributed to analytically deeper, experientially broader, and psychologically more rewarding learning. These developments could have significant positive effects on student's general cognitive growth over time, particularly if students experience arts-integrated learning in their classrooms on a regular basis.

Appendix A

Socio-Economic Composition of Veteran CAPE Schools

School	% Black	% Anglo	% Asian	% Hispanic	% Low Income
Agassiz	16	24	5	54	78
Audubon	4	41	2	51	75
Blaine	7	27	2	61	85
Brownell	100	0	0	0	96
Hawthorne	15	32	11	40	44
Healey	7	32	27	32	85
Lakeview	19	14	7	59	85
Lincoln Park	40	31	17	3	50
McCosh	100	0	0	0	96
Metro	99	0	0	0	95
Murray	76	21	2	1	18
O'keeffe	99	0	0	0	90
Orozco	0	0	0	98	93
Parkside	99	0	0	0	85
Ravenswood	10	17	6	65	90
Ray	51	32	11	4	22
Sheridan	37	33	16	12	46
Telpochcalli	0	0	0	97	99
Walsh	0	0	0	93	93
Average	41	16	5	35	75
CPS Average	52	9	3	35	85[9]

SOURCE: CPS Data Archives, 1999 and 2000

[9] Two CAPE schools have considerably smaller low-income rates (18 and 22 percent) than nearly all the schools in the city, making the overall income average of veteran CAPE schools higher than CPS schools in general. But the remaining 17 CAPE schools average 81 percent low-income families.

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