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Researchers from the University of California San Diego are conducting a quasi-experimental study, which features a multi-site, mixed-methods design to examine CoTA teachers' understanding of arts standards and potential impacts on students in grades 1-6. Data sources include a pre/post-test to measure teachers' understanding of arts standards, teacher interviews that examine implementation, CoTA classroom observations, training documents, and student scores on language arts benchmarks. Analyses include thematic coding of qualitative data, as well as descriptive and inferential analyses of student outcome data collected by the District. This article will present preliminary findings from year one of a three-year evaluation.

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Rethinking Curriculum and Instruction: Lessons From an Integrated Learning Program and Its Impact on Students and Teachers

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Abstract

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Introduction

As educators embark upon the implementation of the Common Core State Standards, implications regarding pedagogy, assessment, and professional development are emerging. With a long history of standards-driven student engagement through generative learning, arts integration may offer some insights. This article weaves a story from disparate threads to compose a tapestry of possibility that may serve as a galvanizing metaphor.

We begin by examining the field's understanding of classroom pedagogy steeped in the arts integration method, as defined by colleagues at the Kennedy Center. We pair this method with the new Common Core State Standards (CCSS) for teaching and learning and explore the alignment between arts integration and the goals of the Common Core State Standards. This includes a descriptive analysis of an existing program that employs arts integration as a central pedagogy. And, finally, we offer provocations for how the field might proceed in terms of assessment. The essential questions we seek to answer in the following text are:

- How are the goals of arts integration and the Common Core State Standards aligned?
- How might professional development be approached to enable general education teachers to adopt arts integration as a central feature of their instructional methodology?
- How is impact measured?

Arts Integration: History and Definition

To cite a state in point as an example, California may indeed be quite typical. While content standards in the Visual and Performing Arts have been adopted in the Golden State and are an instructional requirement under the State Education Code, there is no accountability for assuring every student at the K-12 level has access to a comprehensive and meaningful arts education. This is partly an artifact of the emphasis No Child Left Behind (2001) had on math and language arts (within a tight spectrum of understanding for how learning happens within these content areas).

The architects of California's Blueprint for Creative Schools say it best:

National trends over the last decade have emphasized skill mastery in English/Language Arts and Mathematics but marginalized other subject areas, the arts in particular. California's current public education funding crisis has further exacerbated our state's capacity to adequately support a creative education (California Arts Council, 2013).

This myopic emphasis on learning in two narrowed disciplines has resulted too often in a rather flat educational landscape without a pathway for students to foster creative expression. The problem is not that the nation's youth lack creative capacity. Rather, educational policy and subsequent practice has become limited and standardized to the point that neither innovation nor plurality has been given an honorable place in the educational experience (Sleeter, 2005). It is within this historical context that we examine

arts integration as the mechanism with the lowest friction to advance the lofty goals of the new Common Core State Standards.

But does a commonly accepted definition of arts integration exist? While some argue that defining arts integration is a minor concern (Arts Education Partnership, 2002), without a working understanding of an arts-rich pedagogy, finding inflection points may prove to be difficult. But Rabkin (2004) energizes arts integrationists and encourages practitioners of this strategy to coalesce.

Several researchers, arts advocacy groups and arts education professional organizations have published variations on what arts integration is (Krug and Cohen-Evron, 2000; The Consortium of National Arts Education Associations, 2002; Stevenson & Deasy, 2005; Barr, 2006; Appel, 2006; Parsons, 2004; Arts Education Partnership, 2002; Goldberg, 2012; Silverstein and Layne, 2010; Wakeford, 2004; Burton and Horowitz, 1999). The definitions, while varied, appear to be unified across central themes of interdisciplinary, cross-curricular, process-oriented approaches, with most suggesting a collaborative relationship between classroom teachers and arts specialists.

The Kennedy Center's digital resource, ARTSEdge, provides a comprehensive working definition for the arts integration concept.

Arts integration is an approach to teaching in which students construct and demonstrate understanding through an art form. Students engage in a creative process, which connects an art form and another subject area and meets evolving objectives in both.

The authors, Lynne Silverstein and Sean Layne (2010), produced a manual designed to offer a deeper understanding the Center's definition. It includes a checklist for arts integration that asks educators to consider how their approach to teaching, the creative processes they involve their students in, and the interdisciplinary connections they foster, can change classroom pedagogy.

Goldberg (2012) adds to the field's understanding by distinguishing between two facets of the arts integration paradigm: learning with the arts and learning through the arts. Her work describes learning with the arts as a complementary method of teaching. Here the arts are used as one type of curriculum resource to teach broader concepts (e.g. using a Mondrian painting to help teach parallel lines). In contrast, learning through the arts is a way for students to learn core content material by enlisting the arts as a mechanism for demonstrating their understanding. In this way, the arts can be used both as an instructional resource and as a student learning outcome.

Furthermore, Burnaford, et. al. (2007) discuss three dimensions of arts integration. The authors identify a body of research that explores transference (i.e. what types of knowledge and skills learned through the arts transfer to other content areas). Secondly, they examine the potential of an arts integration approach to make connections across the curriculum. This research analyzes the opportunities for interweaving key concepts throughout multiple content areas. And, finally, the researchers identify a dimension of arts integration that concentrates on collaboration as a process uniting arts specialists with classroom teachers. It is in this process of collaboration among teachers and artists that we, the authors, are deeply engaged through our daily practice.

Inflection Points: Arts Integration and the Common Core State Standards

The educational landscape is experiencing seismic shifts. With the adoption of the Common Core Standards throughout most of the country, schools and districts in California are working to understand the implications of the new framework and to train educators to be poised for implementation. Simultaneously, arts educators are seeing new opportunities to fuse the arts into the classroom in a meaningful way.

Interdisciplinary

In a statement introducing the English Language Arts Common Core standards in California, State Superintendent of Public Instruction, Tom Torlakson, remarked that a key design element in the new standards is their cross-disciplinary nature (California Department of Education, 2013). This has served to galvanize arts integration advocates, who are gaining traction in the discourse around arts education in public schools, particularly at the elementary level. The door is opened further by Torlakson's statement that the choice for the most appropriate and effective curriculum and instructional strategies should be left to schools and districts. In other words, the standards are not designed to drive instruction. Instead the Common Core standards intend to provide a framework for achieving such 21st century skills as critical thinking, creativity, innovation, and collaboration, problem-solving and communication.

Critical Thinking

Critical thinking skills offer an inviting inflection point for arts integration and the Common Core. For example, one way for students to develop into critical thinkers is through a method known as "close reading" (Dalton, 2013). In conducting a close reading of a text, students examine it using various lenses—their own background experiences and opinions, the author's point of view, the historical and cultural context, etc. Through reading closely, the goal is to deepen understanding by interrogating the text with a critical eye, looking for patterns and determining their meaning.

In this scenario, the object being studied is a written piece of text, but with no restrictions in the Common Core for replacing written works with artworks. In fact, the English Language Arts standards encourage the use of visual media (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). Most important, the intended outcome—critical thinking—does not necessarily depend on what type of source material the students engage with in order to develop that skill. While traditional literacy skills (reading, writing, listening and speaking) are certainly of paramount importance, the suggestion here is that an arts-rich, interdisciplinary curriculum will advance a multitude of outcomes—from content understanding to skill-building (Deasy, 2002).

Student Engagement

The Common Core English Language Arts standards invite students to authentically participate in the learning process. This is evidenced most clearly in the Listening and Speaking strand. Students are asked to build meaning through collaborative discussions with peers and to present knowledge and ideas. They are expected to demonstrate their learning. The student engagement piece is, again, an arena where arts integration and the Common Core intersect.

A New York City Schools' study of students at risk of dropping out before graduating analyzed data that strongly suggested that the arts are a crucial factor to keeping students in school (Douglas, 2009). While staying in school may be an indicator of engagement, what committed educators seek is to have students move beyond attendance and into a meaningful relationship with their personal academic progress. The arts have the potential to reach and engage students at this higher level (Coleman, 2011; Hawaii Educational Policy Center, 2004).

Creativity

While one might readily assume that the arts foster creativity, what is relevant to highlight here is that creativity has become an explicit goal of education under the new standards. The Common Core seeks to reorient the direction of K-12 education toward a shared purpose of preparing students to be ready for college and successful in their careers. Toward this goal, the architects of the Common Core recognize that, in the 21st century global marketplace, creativity (i.e. the ability to have flexible, convergent and divergent thinking) is key.

CoTA: Toward An Arts Integration Approach

Collaborations: Teachers and Artists (CoTA) seeks: 1) to address opportunities for interdisciplinary learning and student engagement through critical thinking and problem-solving ; and 2) to foster creativity by aligning arts integration and the Common Core. Since 1998, CoTA has provided intensive professional development to more than 1,200 teachers in three school districts in San Diego County. The primary goal of CoTA is to ensure that teachers continually build the strategies and confidence to use the arts as an essential tool and vehicle for learning in elementary education. CoTA is based on the belief that, when teachers are equipped to enlist the arts across the curriculum, they will discover and unleash their students' true potential.

In the 2011-2012 academic year, the National School District (NSD) received a US Department of Education Professional Development for Arts Educators (PDAE) grant for a three-year cycle to deploy and evaluate CoTA's methodology. Through the grant, CoTA partnered with 45 teachers at three schools in the National School District, an elementary school district in south San Diego County with a high population of English learners, where all students receive free lunch through the Federal Meals program.

CoTA program staff, in collaboration with district leadership, envisioned two translations for the roll-out of the grant project. Initial activities focused strongly on teacher professional development that provided opportunities for NSD educators to become familiar with the National Arts Standards through participatory methods. The Visual and Performing Arts Coordinator at the San Diego County Office of Education provided workshop training for this segment, challenging teachers to apply the National Arts Standards in the other content areas. The goal was to improve student academic achievement in core content areas by enlisting the arts as a vehicle for both understanding the content and demonstrating their knowledge of the content. To reveal cross-curricular connections and to guide the classroom teachers through this translation, each teacher worked directly with a CoTA teaching artist for a 10-week period of sustained, intense professional development each year.

CoTA's design for in-depth engagement with teachers is drawn from the research on effective teacher professional development (Desimone, Porter, Garet, Yoon and Birman, 2001). Further research by Hiebert (1999) reviews the literature and summarizes the most vital components.

Research on teacher learning shows that fruitful opportunities to learn new teaching methods share several core features: (a) ongoing (measured in years) collaboration of teachers for purposes of planning with (b) the explicit goal of improving students' achievement of clear learning goals, (c) anchored by attention to students' thinking, the curriculum and pedagogy, with (d) access to alternative ideas and methods and opportunities to observe these in action and to reflect on the reason for their effectiveness (pp. 15).

CoTA intentionally incorporates these various features and believes this method can point the way toward a professional development model for arts-infused pedagogy.

Ongoing Collaboration

CoTA collaborates over a period of three years with each participating teacher. Prior to starting in-class work, teachers complete a comprehensive preliminary questionnaire consisting of more than 40 long-answer items designed to get a sense of: 1) the teacher's comfort level and prior experience using arts in the classroom; 2) a collective profile of the students' needs, capabilities and interests; and 3) the long- and short-term goals for academic achievement particular to each classroom. This data is collected by CoTA staff and used to determine the most appropriate matches between classroom teachers and teaching artists.

During the first year, CoTA teaching artists and classroom teachers collaborate weekly outside of class time to design and plan a ten-week unit of arts-integrated instruction and to continually recalibrate the activities and direction of the unit based upon the unique needs and culturally-appropriate learning styles of the students.

Gradual Release of Responsibility

Pearson (1983) developed a teaching model known as gradual release of responsibility. While it is simple in its design, it is elegant in its implications. Essentially, a teacher 1) shows the class what must be accomplished; 2) guides the class in accomplishing it together; 3) allows the class to collaborate with peers to meet the learning goals; and, finally, 4) requires that individual students demonstrate learning independently. This model is rooted in Vygotsky's (1978) seminal work on the Zone of Proximal Development, which purports that successful learning depends on appropriate scaffolding. CoTA employs gradual release of responsibility in the program's teaching artist/classroom teacher relationship.

During the first year, CoTA teaching artists take the instructional lead during the weekly class sessions with students. In year two, the expectation is that the artists and teachers will co-teach each week. By year three, the weekly out-of-class meetings between the teachers and artists are reduced to bi-weekly, and the teacher becomes 100% responsible for leading class sessions, while the teaching artists serve as coaches.

Impacting Student Achievement: Examining Two Years of CoTA's PDAE Results

Preliminary results from the first year of a three-year mixed methods evaluation study were inconclusive but intriguing, and second-year results amplified positive findings from the first year. The evaluation used a survey given at the beginning and end of the 10-week professional development sessions to assess changes in teacher attitudes about arts instruction, using a 5-point Likert scale, and perceptions of their students on a 4-point Likert scale. The survey was developed by Dr. Sally Yard at the inception of CoTA and has been used by the program since then. Grant-year results were analyzed by researchers Hofstetter and Strick.

Methods

Qualitative research included observation at professional development sessions and in classrooms during arts activities. Seventeen in-person interviews were conducted over two years with CoTA teachers to collect information on their backgrounds, recruitment to the program, experiences co-teaching with the artists, opinions about arts integration, their observations about student growth, and challenges. It employed an open-ended interview protocol developed by Strick and Hofstetter. Teachers were initially contacted by e-mail on a random basis, but only some responded, due partly to school district spam filters, and those who eventually participated were essentially self-selected. Interviews of 30 to 60 minutes were audio-recorded, then transcribed or summarized and subjected to thematic analysis; results were used formatively in the first year. Teacher journals containing reflections on student development were collected at the end of each year and analyzed thematically.

Teacher tests were developed to collect information on growth in teachers' facility with arts integration. The 30-item tests were developed to measure teacher growth in comprehension of the National Arts Standards and implementation of arts-integration methods in the classroom. Fifteen of the items concerned arts vocabulary and requested definitions of terms from the CoTA program website.

In the program's first two years, approximately 1,873 students were in CoTA classrooms under the grant, and 519 of those students had classes with CoTA teachers and artists in both years. English Language Arts Benchmark tests were used with an intervention-comparison design to assess student growth. Students in CoTA classrooms were compared to all students at three comparison schools. The comparison schools were selected for their similarity to the CoTA-implementation schools on demographic factors and test results. The evaluators analyzed English Language Arts Benchmark tests for quarters 1 and 3 in the 2011-12 school year, using ANCOVA with SPSS version 11. There was no random assignment of teachers or students to the treatment, and caution should be exercised in the interpretation of results. While the Benchmark is only a distant measure of student learning, especially in an arts integration setting, it is also an accepted measure that presents a high bar for arts integration, particularly in a predominately Hispanic district.

Results

Teacher-testing found statistically significant growth in teachers' ability to exemplify and describe the implementation of arts standards in arts integration projects and lessons. While teachers had little notion of what arts integration would look like at

pretesting, by the end of the first year some were able to recount lessons they had co-taught, imagine arts integration lessons they might teach, and consider how the lessons would support student learning. There was statistically significant growth in both years and continued growth from year 1 to year 2 despite more stringent scoring in year 2, with only unique implementation responses accepted. For the 34 teachers who provided answers on both tests, the year 1 post-test mean was 13.5, $SD=5.54$, and the mean on the year 2 post-post-test was 16.56, $SD=5.16$, $t(33) = 3.66$, $p<.001$.

Teachers were aware of their professional growth. Survey analysis found statistically significant increases in their levels of confidence in arts integration from the beginning to the end of each school year. Their stated likelihood of conducting future arts integration lessons was also significantly high. This is consistent with the results of the teacher test. The questions were represented by two statements on a Likert scale. The first about confidence states, "Today I am confident using arts in my classroom." In year 1, the result was statistically significant, $t(24) = -3.44$, $p < .01$. In year 2, using a paired-samples t-test, the mean response on the post-survey (4.28, $SD=.841$) was higher than the mean on the pre-survey (3.86, $SD=.581$) and was statistically significant $t(28)=-2.457$, $p<.05$.

Table 1 presents results for the subset of teachers who answered the survey four times, at the beginning and end of year 1 and year 2. It shows changes from the beginning of year 1 through the end of year 2 for teachers continuing in CoTA.

Table 1

Confidence and Propensity to Integrate the Arts (N=19)

	Y1 pre M (SD)	Y1 post M (SD)	Y2 pre M (SD)	Y2 post M (SD)	p-value*
Confidence	3.63 (1.12)	4.32 (0.65)	3.95 (0.58)	4.38 (0.59)	$p < .01$
Propensity	3.37 (1.07)	4.36 (0.66)	4.09 (0.81)	4.48 (0.51)	$p < .001$

*p-values represent Y1 pre to Y2 post change for teachers who answered all four surveys.

In interviews, teachers noted students' enjoyment of arts activities and eagerness to have the artists present in their classrooms. Teachers believed and hoped that students' enjoyment would contribute to greater learning, and some teachers stated that their students displayed increased social competence as a result of working together on collaborative arts projects.

Furthermore, the evaluators conducted an emergent themes qualitative analysis of the teacher journals in year 2. They found that some teachers reported that their students were excited, enthused, motivated and focused and paid attention and took pride in their creations. In a few classes, teachers reported that shy students and low-performing students took risks and experienced success. One teacher observed an increase in listening skills and motivation. In one class, a child with behavior problems was

described as able to channel emotions in the arts. A couple of teachers concluded that having students act out character and portions of stories contributed to student comprehension.

Compounding the challenge in evaluating the CoTA project is the change in measurement instruments that is occurring as a result of the new Common Core standards-based assessments. National School District, for example, has abandoned the benchmark assessments as the California Standards Test. Calibrated to the goals of No Child Left Behind, it is being replaced by Smarter Balanced assessments aligned to the Common Core State Standards.

Student benchmark testing results in the first year were mixed and intriguing, as the analysis found statistically significant results, both positive and negative. At the sixth grade level, CoTA students showed significantly lower gains than did comparison students ($F(1, 319)=11.41$, $MSE=108.99$, $p<.01$, partial $\eta^2=.035$). While at the second and third grade levels, CoTA students showed significantly greater gains on the tests (second grade: $F(1, 172)=11.09$, $MSE=184.84$, $p<.01$, partial $\eta^2=.061$; third grade $F(1, 353)=6.18$, $MSE=144.78$, $p<.05$, partial $\eta^2=.017$). The effect sizes were small, and CoTA explained between 2% and 6% of the variance, while intervention-comparison differences on the pretest accounted for about 50% of the variance.

In the second year, ANCOVA was performed with CoTA/comparison as the fixed factor, 2012-2013 Quarter 4 ELA test results as the dependent variable, and 2012-2013 Quarter 1 ELA scores as the covariate. There was no statistically significant difference between CoTA and comparison student growth in grades 3, 4, or 6. However, once the covariate Q1 scores were accounted for, there was a statistically significant difference between CoTA and comparison students' scores in second [$F(1, 319)=11.47$, $p<.01$] and fifth grade [$F(1, 319)=9.674$, $p<.01$], with higher CoTA adjusted means. Teachers and students were not randomly assigned, and therefore the results should be interpreted with caution. Nonetheless, they suggest a pattern of positive findings across two years on a stringent measure of student growth. These findings are resonant with similar outcomes at the primary grade levels where academic achievement growth was higher for students whose teachers had engaged in professional development in arts education (U.S. Department of Education, 2012).

In summary, these promising results from the first two years echo other studies on the impact of the arts on student achievement (Heath, 1999; Catterall & Waldorf, 1999; Rabkin & Redmond, 2004). Following the conclusion of the grant period, a full analysis will be available.

Assessments: New Opportunities for Measuring Impact

With the paradigm shift in education ushered in by the adoption of the Common Core, there are exciting prospects emerging in the arena of assessment. The California Department of Education has signed a contract with Smarter Balanced, "a state-led consortium working to develop the next generation assessments that accurately measure student progress toward college- and career-readiness." Smarter Balanced methods include computer-adaptive testing and performance-based assessments.

While these changes in the way student learning will be assessed represent a tremendous step forward from previous testing methods, there is still much that can be done. For example, the California Department of Education has clearly stated that

developing creativity among students is a driving impetus for the next generation of standards (California State Board of Education, 2013), yet there is currently no plan for measuring student creativity. Discussion regarding the possibility of adding an index of growth in creativity for schools is being considered, but without concrete outcomes to date. Additionally there appears to be fertile ground in the field to evaluate not only student creativity but also the method of arts integration as an instructional methodology to drive the Common Core.

Conclusion

CoTA's theory of change follows this line of reasoning: If teachers have a set of tools that foster student engagement (with project-based arts integration as one of the more powerful tools in this set), then students' critical thinking, collaborative problem-solving, and overall academic skills will increase, coinciding with a shift in teachers' perceptions of their students. As a result of CoTA's strategy for facilitating change, results to date have shown promising outcomes in student achievement and teacher capacity.

CoTA's arts-infused process incorporates generative, intense and participatory methods for teacher professional development that are student-centered and can result in remarkable classroom pedagogy. Each teaching artist/classroom teacher collaboration is unique. Through an ongoing process of proposing, refining, field-testing, and revising arts integrated units, CoTA safeguards against a one-size-fits all mentality and ensures individualized learning experiences.

The teachers are active, constructive participants and reflect on their own learning experience. The students are engaged in the projects—the arts naturally elicit engagement—as they inquire about and research the subjects being studied. They demonstrate their learning when they are asked to defend their artistic choices based on the empirical facts from the sources they are studying. They present their understanding of a topic through performances, visual works of art, dance and movement, so that they come to a deeper understanding as they navigate between their roles as performers and observers. (See Appendix A).

These key components of the CoTA program could possibly point to a replicable framework that can be adopted in other contexts. We are eager to pursue the research around the model, and we are excited to announce that the CoTA program has dedicated resources to pursue this work over the next three years. We are optimistic, even enthusiastic, about what the future holds for arts integration strategies as the new Common Core era in public education blossoms and practitioners become more comfortable with a pedagogical context that values creativity, innovation, collaboration, critical thinking, and effective communication.

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Appendix A

Figure 1. Insects and Flowers



Kindergarten students identified characteristics of complex flowers and insects by creating illustrations using patterned geometric shapes.

Figure 2. African Savannah



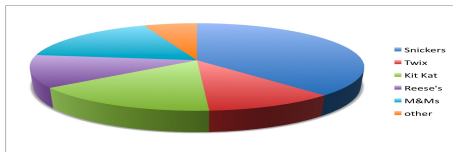
While learning about animal habitats, second grade students installed a mixed-media depiction of the African Savannah.

Figure 3. Metamorphosis



By acting out tableaux showing the life cycle of a butterfly, third grade students learned about metamorphosis.

Figure 4: Data Analysis Graph and Lyrics



DATA (to the tune of YMCA)
Survey—this is how you collect

It's called data—it's collected two ways
Take a sample—that's where population comes in
And you get those in a survey

First you want some information
You ask peoples for their own opinion
Such as "What is your favorite pet?"
Cat—dog—fish—bird—or a hippo

We collect it in a survey! D-A-T-A
Results are what you get! D-A-T-A

Sixth grade students wrote lyrics to help them understand basic statistical concepts. Then they administered a survey collecting data from their peers at school on their favorite candy bars.