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Abstract:

The John F. Kennedy Center for the Performing Arts has been involved in an intensive, sustained partnership with schools, Changing Education Through the Arts (CETA), since 1999. The CETA program is a whole school reform model designed to impact student learning and attitudes by building teachers' capacities to make arts integration one of their primary approaches to teaching across the curriculum. During its first decade (1999 to 2009), the program formally examined its impact through three independent, multi-year evaluation studies. Examined together, the three studies shed light on a decade of arts integration outcomes for students, teachers, and schools. Findings are reported in four areas—the CETA program design, and the program's impact on students, teachers, and schools. Findings for the program design include: the structure of the CETA program's professional learning model was integral to its success in schools and the most



critical factor for improving practice; and the importance of opportunities for arts coaching in the classroom and participation in study groups as ongoing program supports. Findings for the impact on students include: increased student engagement, both socially and academically; a moderately high positive relationship between student engagement and the extent of teachers' professional development; growth in students' cognitive and social skills; and gains in standardized test scores for lower performing students. Findings for the impact on teachers include: development of strong support for the value of arts integration for reaching all kinds of learners, widening the opportunity for all students to be successful, and providing multiple ways for students to express knowledge and understanding; teachers' increased use of collaborative learning strategies with students; change in the role arts specialists play in schools; and time as a critical factor for effective implementation. Findings for the impact on schools include: changes in school culture, including increased teacher collaboration resulting in a more positive and cohesive, and child-centered environment; growth of the school as a learning community; and the importance of administrative support and leadership.

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Cross-Study Findings: A View into a Decade of Arts Integration

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Abstract

The John F. Kennedy Center for the Performing Arts has been involved in an intensive, sustained partnership with schools, Changing Education Through the Arts (CETA), since 1999. The CETA program is a whole school reform model designed to impact student learning and attitudes by building teachers' capacities to make arts integration one of their primary approaches to teaching across the curriculum. During its first decade (1999 to 2009), the program formally examined its impact through three independent, multi-year evaluation studies. Examined together, the three studies shed light on a decade of arts integration outcomes for students, teachers, and schools. Findings are reported in four areas—the CETA program design, and the program's impact on students, teachers, and schools. Findings for the program design include: the structure of the CETA program's professional learning model was integral to its success in schools and the most critical factor for improving practice; and the importance of opportunities for arts coaching in the classroom and participation in study groups as ongoing program supports. Findings for the impact on students include: increased student engagement, both socially and academically; a moderately high positive relationship between student engagement and the extent of teachers' professional development; growth in students' cognitive and social skills; and gains in standardized test scores for lower performing students. Findings for the impact on teachers include: development of strong support for the value of arts integration for reaching all kinds of learners, widening the opportunity for all students to be successful, and providing multiple ways for students to express knowledge and understanding; teachers' increased use of collaborative learning strategies with students; change in the role arts specialists play in schools; and time as a critical factor for effective implementation. Findings for the impact on schools include: changes in school culture, including increased teacher collaboration resulting in a more positive and cohesive, and child-centered environment; growth of the school as a learning community; and the importance of administrative support and leadership.

Keywords: arts integration, The Kennedy Center, Changing Education through the Arts, professional learning

A View into a Decade of Arts Integration

Since 1976, the John F. Kennedy Center for the Performing Arts in Washington, DC, has partnered with schools locally and nationally to make the arts an integral part of every child's education. To support the development of arts education within whole schools, the Kennedy Center began partnerships in 1999 with five Washington, DC metropolitan area schools interested in complementing their discipline-based arts instruction with a school-wide focus on arts integration. This intensive, sustained partnership, Changing Education Through the Arts (CETA) program, is a professional development program designed to build teachers' capacity to make arts integration one of their primary approaches to teaching across the curriculum.

Through rigorous professional development workshops and courses and continuing with demonstration teaching, in-classroom coaching, and study groups, teachers learn about arts integration and specific strategies and are supported as they implement the instruction. The professional learning model is designed to meet the needs of adult learners, using an active, social approach to learning with direct application to the classroom.

Since its inception, the CETA program has examined and refined its strategies and processes. To understand the impact of arts integration on teachers, students, and schools, three independent evaluation studies were conducted over a decade, from 1999 to 2009. The Kennedy Center commissioned two studies (Kruger, 2005; Isenberg, McCreadie, Durham, & Pearson, 2009) to examine the impact of the CETA program. This article also draws on the findings from a third study (RealVisions, 2007) commissioned by Montgomery County Public Schools, Maryland which examined three CETA schools in the Arts Integration Model Schools (AIMS) program. The design of each study was quasi-experimental, examining a variety of questions relevant to the program's development during the years of study. Examined together, the studies shed light on almost a decade of outcomes for program design, teachers, students, and school culture.

All three studies were guided by the hypothesis that providing capacity-building arts integration professional development opportunities for teachers would improve instruction by enabling teachers to effectively integrate the arts throughout the curriculum. This change would, in turn, engage children in learning in such a way that their academic performance, attitudes about learning, and their engagement would improve. Further, these changes would impact the individual school's culture, establishing a shared vision and mission and creating stronger teacher collaboration.

Several theories about why and how arts integration activities can result in deepening learning provide a basis for this hypothesis. The arts have the ability to improve general cognition through the development of executive attention (Posner and Patoine, 2009). Arts integration extends how learners process and retain information by combining several learning modalities (visual, aural, and kinesthetic), thus "increasing the probability that learning will occur" (Scheinfeld, 2004). Further, arts integration leverages eight factors that have positive effects on long-term memory (Rinne, Gregory, Yarmolinskaya & Hardiman, 2011). These factors include: 1) rehearsal—repeated elaborative rehearsal of information; 2) elaboration—the process of creating a surrounding context; 3) generation—generating information in response to a cue (verbal or visual) rather than simply reading that information; 4) enactment—or physically acting out material, rather than simply reading or listening; 5) oral production—producing a word orally; 6) effort after meaning—effort to understand material, outside of a conscious attempt to commit material to memory; 7) emotional arousal—emotional response to the material; and 8) pictorial representation—information presented in the form of pictures is retained better than

information presented in words. In addition, Scheinfeld (2004) describes how arts integration focused on drama and reading comprehension “strengthens students’ visualization of the text and their emotional engagement with it, both of which contribute to greater retention and understanding” (p. 4). Additionally, research by Shanahan *et al.*, (2010) supports the connection between visualization and gains in reading comprehension.

Descriptions of arts programs (Stevenson & Deasy, 2005) further support theories that students’ engagement in the arts:

- Connects them to authentic learning that matters to them
- Provides opportunities for all learners—even struggling learners—to be successful
- Develops feelings of self-efficacy
- Increases intrinsic motivation to learn, and
- Develops students’ abilities to apply learning to new situations and experiences.

Theories about teachers’ professional development indicate that effective teacher learning linked to student growth involves a network of experiences including attendance at sessions, engagement in dialog with colleagues about their learning, consistent documentation of their practice, a commitment to arts integration and partnership with teaching artists (Scripp, Burnaford, Vazquez, Paradis, & Sienkiewicz, 2013). In addition, effective professional development helps teachers differentiate their instruction, become more culturally responsive in their teaching, and feel rejuvenated and renewed in their commitment to teach (Bellisario & Donovan, 2012; Stevenson & Deasy, 2005). Effective professional development also helps teachers grow in their confidence and enthusiasm for arts integration and their ability to create an effective learning environment, reduce classroom management issues, and facilitate deep learning for their students (Garett, 2010).

Defining Arts Integration

The CETA program’s focus on arts integration is part of a national trend that reflects a change in thinking about the purpose of the arts in education. Wakeford (2004) explains that this new thinking has “framed the arts as facilitators of the cognitive learning process” and underscores “how the emotional and affective dimensions of artistic experience can be a key part of what makes authentic learning happen in the classroom” (p. 83).

According to Rabkin (2004), arts integration is “the arts for learning’s sake” (p. 8). He continues:

At its best, arts integration makes the arts an interdisciplinary partner with other subjects. Students receive rigorous instruction in the arts and thoughtful integrated curriculum that makes deep structural connections between the arts and other subjects. It enables students to learn both deeply. The practice of making art, and its performance or exhibition, becomes an essential part of pedagogy and assessment, but not just in art or music class. These activities become part of the routine of studying history, science, reading and writing, and math (pp. 8-9).

Similarly, the Kennedy Center’s definition (Silverstein & Layne, 2010) states that arts integration is an “approach to teaching,” which implies that teachers use it daily. It also references engagement in the creative process as a fundamental criterion and extends the idea of connections between the art form and the curriculum to include the concept that strong connections are mutually reinforcing. The definition states:

Arts integration is an approach to teaching in which students construct and demonstrate understanding through an art form. Students engage in the creative process to explore

mutually-reinforcing connections between an art form and another curriculum area to meet evolving objectives in both (Tab 2, p. 1).

Impact on Students

The impact of arts integration on students has been documented in a range of studies focusing on test scores. Over a six year period, students in the arts integration programs directed by Chicago Arts Partnership in Education (CAPE) performed better in reading and mathematics than students from comparison schools. However, the difference was statistically significant only at the elementary school level (Catterall & Waldorf, 1999). A five year study of Oklahoma A+ (OAS) arts integration schools revealed that students' performance on standardized tests generally met or significantly exceeded state and district averages (Barry, 2010). Since OAS schools serve a greater proportion of ethnic minorities and economically-disadvantaged students, this finding adds further support to claims that arts integration's effects are significant for all students, but may have its strongest impact on low-performing students (Barry 2010; Caterall & Waldorf, 1999; Heath & Roach, 1999). Ingram & Reidel's (2003) longitudinal study for Minnesota's Arts for Academic Achievement (AAA program) demonstrated higher reading scores for third grade students when teachers integrated the arts into English/reading lessons. The results were strongest for economically disadvantaged students and English language learners. In addition, students in North Carolina's A+ Schools achieved gains over the three year period in reading and mathematics assessments equal to those of students throughout the state, even though A+ Schools serve a higher proportion of disadvantaged and minority students (Corbitt, McKenney, Noblit, & Wilson, 2001; Marron, 2003). Rabkin and Redmond's (2004) analysis of six arts integration programs led them to a similar conclusion: "Arts integration can be a powerful lever for positive change, particularly in low-income schools and with disadvantaged learners, and it has distinct advantages over more conventional arts education" (p. 132).

In various research studies, arts integration and arts education have been positively and consistently linked to student engagement, motivation, and persistence as well as other outcomes (Asbury & Rich, 2008; Deasy, 2002; Fiske, 1999; Hetland et al., 2007; Stevenson & Deasy, 2005). According to Isenberg et al. (2009), "Arts learning is participatory and active and requires students to interact with content and materials using both their bodies and minds. This way of learning engages students by offering them many ways to gain understanding and express their knowledge" (p. 6).

CAPE researchers, DeMoss & Morris (2002), also examined how arts integration supports student engagement in learning. The researchers found that units incorporating the arts resulted in improved student motivation and ability to assess their own learning. Further, studies have indicated the arts can engage students who are not typically reached through traditional teaching methods, including those from economically disadvantaged backgrounds, reluctant learners, and those with learning disabilities (Deasy, 2002; Fiske, 1999; Rabkin & Redmond, 2004).

Impact on Teachers and Schools

According to Isenberg et al., (2009):

The benefits of arts integration extend beyond students, affecting teachers and schools as well. While a multitude of arts integration models are currently being applied in schools, almost all are built upon the collaborative efforts of classroom teachers and arts specialists (which may include artists in residence, visiting

artists, school-based arts teachers, arts coaches, or some combination of these) (p. 7).

These collaborative efforts help teachers develop a strong sense of community. Their relationships result in increased satisfaction, interest, and success (Burton et al., 1999; Stevenson & Deasy, 2005; Werner & Freeman, 2001). Collaboration often results in teachers who are more willing to take risks, are innovative in their teaching, persist in integrating the arts despite obstacles, and use a child-centered rather than adult-centered approach to teaching (Burton et al., 1999; Werner & Freeman, 2001).

If arts integration is going to take root, the entire school community must be involved (Betts, 1995). Support from school and school district administrators is needed to build and sustain any partnership or program (Borden, DeMoss, & Preskill, 2006; Burton et al., 1999). For teachers to risk to learn new instructional strategies, they need support and encouragement from their principals (Burton et al., 1999). To adopt arts integration teaching methods, teachers need professional development that explicitly informs them about the purpose, theory, and benefits of this pedagogy (Betts, 1995; Borden et al., 2006; Werner & Freeman, 2001). This allows teachers to understand arts integration as an approach to teaching that helps them meet national and state curriculum standards rather than as something extra and time-consuming (Werner & Freeman, 2001).

With this research as a backdrop, the CETA program director was interested in finding out the impact of its professional learning model on students, teachers, and school culture and whether the results extended previous work. The questions that guided the project were:

1. Did the program's capacity-building professional development enable teachers to effectively integrate the arts across the curriculum?
2. Would teachers' professional development result in changes in student learning, attitudes, and engagement?
3. Would the CETA program have a positive impact on teachers and the school culture and, if so, in what ways?

Method

The first evaluation study (Kruger, 2005), conducted between 1999-2003, analyzed teacher implementation of arts integration and corresponding student achievement data from seven teacher participants and six comparison teachers in Fairfax County Public Schools (FCPS), Virginia, with 725 students in the data set. Teachers completed a survey measuring the degree to which they used or integrated the arts during their Pre-CETA year and two subsequent years of participation. Teachers' responses to each question were recorded for each year. A summary score of their average response to the five questions for each year was also constructed to yield an overall implementation score for each year. FCPS supplied data for each year that included the grade of instruction, demographic data for the students in the data set (including gender, ethnicity, SES, language status, and special education status of each teacher's students), student report card grades, student Virginia Standards of Learning (SOL) scores, and attendance information. Data records were organized with the teacher as the unit of analysis. The school district provided report card grades for students in grades 2 through 5. The individual subject grades were collapsed into basic scores for Academic Achievement (combining reading, writing, oral expression, math, science, social studies, and spelling) and Academic Effort, among others.

According to Kruger (2005), limitations of the study data set included the small sample size and incomplete data sets, and the quasi-experimental design. Teachers were not randomly assigned to participate in CETA training, nor were students randomly assigned to attend schools

that support CETA as a professional development opportunity for teachers. As a result, absolute causality cannot be inferred. Variables other than the CETA program that may have affected student performance may have differed among the groups. The second evaluation study (RealVisions, 2007), conducted between 2004–2007, examined the process of program delivery, both professional development for teachers and arts integrated instruction for students; the outcomes for teachers and students; and the mechanisms that mediated between program delivery and the emergence of outcomes. The evaluation followed a quasi-experimental design with carefully matched comparison conditions, including demographic characteristics and the number of students participating in special education, in English for Speakers of Other Languages programs, and in free and reduced price meal systems.

The study employed both broad-based and targeted data collection that supported triangulation of data. Data collection methods included observations, surveys, interviews, focus groups, and document analysis. Subjects of the investigation included 101 teachers and 1478 students from three model schools and 1296 students from comparison schools. Student outcome data in the form of test scores was provided by the Maryland State Department of Education's *Maryland Report Card*. Limitations of the study were not reported.

The third evaluation study (Isenberg et al., 2009), conducted between 2005–2008, was designed to provide the Kennedy Center with an analysis of the effectiveness of the CETA program in relation to its goals and objectives. Quantitative and qualitative data sources allowed the researchers to triangulate them to enrich one another. Information was gathered from different sources, using multiple methods of data collection and analysis: (a) Document review-- This included CETA program documents, past evaluation reports, school-level standardized test scores, and examples of student work; (b) Observation--The researchers used three separate protocols to record observations of professional development courses, coaching in classrooms, and study group meetings; (c) Individual interviews--Interviews were conducted with case study school principals and CETA school coordinators; (d) Focus group interviews--Interviews were conducted at each case study school, using a protocol; (e) Annual surveys--Classroom teachers and arts specialists, CETA school coordinators, guidance counselors, principals, and assistant principals completed surveys which included a variety of open-ended and fix-choice questions; (f) Four case study schools--These case studies provided detailed narrative descriptions derived from multiple sources of data using multiple methods. The evaluation team visited each case study site multiple times during one or more years of the evaluation period. One hundred and sixty (160) teachers were included in the study. The authors acknowledged the limitations of this three-year evaluation. First, the study evaluated the entire CETA program as a singular unit. Data collection and analysis were conducted to portray the operating context of the CETA program as a whole. Second, while student test score data were included in this evaluation, they were not being used to imply cause or attribute academic effects to the CETA program. Additionally, scores were compiled at the school level and could not be disaggregated by individual teachers or by students.

Results and Discussion

The findings described below are drawn from each of the three studies (Kruger, 2005; RealVisions, 2007; Isenberg et al., 2009). They examine four areas: the effectiveness of the CETA program design, impact of students, teachers, and schools. Data tables are included in the original studies.

Effectiveness of the CETA Program Design

The CETA program, which relies on arts integration as its core, has positively influenced schools through its professional learning model (Kruger, 2005; RealVisions, 2007; Isenberg et al., 2009). The CETA program's professional learning model includes orientation activities that help teachers understand the program and its philosophy, formal instruction (e.g., workshops and courses), implementation supports (e.g., demonstration teaching, coaching, study groups, action research) designed to provide follow-up support in the classroom, and recognition events that celebrate teachers' efforts and accomplishments. According to Isenberg et al. (2009), "All sources of evidence support the structure of [the] CETA [program] as being integral to its effectiveness in the schools" (p. 26). This finding is supported by the RealVisions (2007) study, which indicated that teachers and school leaders regard professional development as the foundation for their school's arts integration program and the most critical factor in improving their practice. Further, teachers reported that they were "drawn to the CETA program and maintain their participation because it is one of the few professional development models that treats them as 'professionals'" (Isenberg et al., 2009, p. 22).

Teachers appreciate that the professional development has provided them with both the theoretical and practical knowledge needed to change their practice (RealVisions, 2007; Isenberg et al., 2009). Isenberg et al. (2009) found that materials provided in CETA courses and workshops helped teachers move from course to classroom implementation by providing clear steps and lesson examples for teacher use. Further, "as teachers grow in their comfort and ease with integrating the arts, applying CETA strategies has become more natural and internalized" (p. 15). RealVisions (2007) found that, "The more training teachers had, the more they taught in and assessed both arts and non-arts content areas in their arts-integrated lessons and units" (p.28).

Isenberg et al. (2009) noted that the ongoing nature of the CETA professional learning model keeps teacher learning "on the front burner unlike other professional development models that meet only once or over the summer months" (p. 22). The authors also found that personalized coaching is a fundamental aspect of the CETA professional learning model:

Arts coaches support teachers throughout the year by observing classes, modeling and co-teaching lessons, and helping teachers to plan integrated units. Knowing that an arts coach will be supporting them in the classroom helps teachers to integrate, refine, change, and grow. Teachers report that as arts coaches get to know them and their students, the coaches are uniquely poised to know when teachers need to be pushed, helped, or directed to other resources in the school (pp. 22-23).

Teacher participation in study group meetings was another important support for ongoing development (Isenberg et al., 2009). Study group meetings brought "teachers together in a small group setting to collaborate, support, and learn from one another about specific arts integration topics. Teachers feel supported by their colleagues and use study groups to plan and reflect on integrated lessons" (p. 23).

According to Isenberg et al., (2009), the opportunity for sustained development through the CETA program has had a positive impact on teachers. The longer teachers remain in the CETA program, participating in courses, working with arts coaches and with peers in study groups, the more arts integration becomes a part of their pedagogy. The study by RealVisions (2007) reported the impact of ongoing and substantial professional development: "Teachers with the most arts integration professional development also perceived more impact on their teaching practice, their students, and their school than teachers with less training" (p. 28).

The impact of the CETA program's professional development was evident in teachers' reports about the sources of their knowledge of arts integration. In the earliest study (Kruger, 2005), teachers initially cited "Prior Experience" most often as their source of arts knowledge. This response waned over the years as "Coaching by Teaching Artists" was more frequently identified as the source of knowledge. "In-School Study Groups," which were initially mentioned infrequently, grew during Years 1-3. Workshops were consistently and frequently cited as sources of knowledge. While CETA teachers reported steady growth in knowledge over time, control teachers cited a stable amount of knowledge over time, achieved only as a result of "Prior Experience."

Professional development also influenced the growth of teacher participation in the program and was a factor in the development of teacher leadership. According to RealVisions (2007), when the professional development was followed by sustained instructional efforts, it triggered "significant professional growth for a number of model school teachers" (p. 24). Further, "It appears that the amount and consistency of arts integration professional development played a significant role in the emergence of an effective cadre of teacher leaders within a strong community of learners" (p. 28). Teacher leaders engaged in activities such as leading formal presentations to colleagues within and outside of the model schools as well as to school system superintendents and state fine arts supervisors. Teacher leaders also became "effective ambassadors for the program as well as potential trainers of other teachers, thus building the capacity of the school system and the state to support the development of an effective arts integration program" (p. 24).

In summary, the results of the studies (Kruger, 2005; RealVisions, 2007; Isenberg et al., 2009) indicated that the CETA program's capacity-building professional development enabled teachers to effectively integrate the arts across the curriculum. In particular, the ongoing nature of the professional development contributed to teachers' growth in their understanding, knowledge, and practice in arts integration.

Impact on Students

Isenberg et al. (2009) found that, "Across all schools, both teachers and administrators reported that repeated exposure to arts integration has helped students to make connections between and among content areas" (p. 17). The study also found that students were more likely to take risks in their learning and show their knowledge in multiple ways.

Student engagement. Two studies (RealVisions, 2007; Isenberg et al., 2009) examined the impact of arts integration on student engagement. According to the RealVisions study:

Commenting on the impact of arts integration on their students, they [teachers] repeatedly pointed to the high level of student engagement as a barometer of the success of their arts integration efforts. They described students as being more engaged socially and academically and viewed such engagement as a powerful factor in motivating student involvement with learning experiences (pp. 13-14).

The RealVisions study also noted that increased student engagement was a thread running through teachers' comments in their monthly arts integration reflection sheets. They described their students as "enthusiastic, excited, eager to participate, and enjoying learning in a creative way" (p. 14).

To assist in classroom observations, the RealVisions researchers identified indicators of student engagement. One indicator, engagement in collaborative learning, showed strong findings.

Student engagement on this indicator in 2007 contrasted sharply between the model schools at an overall 32% and the comparison schools at slightly better than 10%. This finding is in contrast with only a 6% difference in favor of the model schools found in the study's first year (p. 23).

According to RealVisions (2007), teachers saw arts integration as offering all students opportunities to be successful, thus motivating more students to be engaged in learning. Many teachers reported that arts integration "had encouraged engagement (even and especially their unfocused and frustrated learners), and increased every student's level of attention so that 100% of the students in the class were eager to participate." (p. 14) Additionally, the study's authors reported, "Special education teachers who embraced arts integration as a means of reaching their students reported that they had seen their students benefit greatly from the process" (p. 14).

Several factors influenced student engagement. The study by RealVisions (2007) attributed increased student engagement to the opportunity for "students to make and express personal connections with the curriculum" (p. 17) and to "become invested in projects with real-life connections" (p. 14). Further, teachers felt arts integration helped students "find their voices" and gain a feeling of "ownership" of what they were learning. Teachers also felt that students' excitement and engagement impacted students' retention of information.

Student engagement was also related to the level of their teachers' professional development. According to RealVisions (2007), there was a moderately high positive relationship between student engagement and the total number of professional development hours completed by teachers. Additionally, "In changing students' level of engagement in learning experiences, arts integration impacted students' attitudes toward learning and the arts. With these changed attitudes came improved student achievement" (p. 29).

Growth in students' cognitive and social skills. Across the three years of the RealVisions (2007) study, students developed improved cognitive skills, among other things. Teachers and school leaders believed that arts integration encouraged students to give more thoughtful and thought-provoking responses to questions rather than quick answers; assisted students in developing their critical thinking and problem solving skills; and helped students to better articulate and justify their opinions. Teachers also gave high ratings to the impact of arts integration instruction on students' ability to approach ideas from multiple perspectives.

According to RealVisions (2007), teachers and school leaders made repeated comments about the positive impact of arts integration on students' development of social skills, including the ability to cooperate, as well as on their self-concept as learners and appreciation for their classmates. Additionally, the study's authors report that teachers and school leaders repeatedly commented on "the increase in students' self-confidence and enhanced ability to take risks" (p. 16) and that these observations were confirmed by teachers' survey responses.

Report cards and standardized test scores. In the earliest study of the CETA program, over a four year span, students of CETA teachers showed significantly improved report card grades in Academic Achievement and Academic Effort over time than did students of control teachers (Kruger, 2005).

The study also reported student growth in English and history as evidenced in standardized test scores. Among students of CETA teachers, third grade SOL subtest scores in English and history improved significantly over a four-year span compared to the scores of students of control teachers. Kruger (2005) stated:

The CETA and control students' absolute level of performance may be due to random variation between the groups, but the rate of *improvement* over time (as seen in English and history) may plausibly be interpreted as related to the training and experience of the CETA teachers (p. 30).

In the study's conclusion, Kruger (2005) stated that although standardized test scores are notoriously difficult to affect:

It is reasonable to believe that any intervention tackling such a complex task would require multiple years of effort. It is remarkable that an arts integration program may have contributed to the improvement, since the role of the arts in academic achievement has been difficult to demonstrate empirically (p. 42).

Over the three-year period, RealVisions (2007) examined students' scores in reading and math on the Maryland School Assessment (MSA) in both the model and comparison schools. The study looked at the percentage of students in the advanced plus proficient levels for the cohort that was in the third grade during the study's first year.

The findings for reading demonstrated:

In the schools where the percentage of students scoring in the advanced plus proficient levels was lower (below 80%), in the first year of the grant period... the model school percentage rose by 12.7% while the percentage at the comparison school dropped by 5.7%. In the schools where the percentage of students scoring in the advanced proficient levels was relatively high (above 88%) in the first year of the grant period,...[two schools] and their comparisons either maintained that high percentage or increased it slightly, while one comparison school rose slightly and the other dropped slightly (p. 29).

The findings for math demonstrated:

In the schools where the percentage of students scoring in the advanced plus proficient levels was lower (below 65%), the percentage increased by 23.2% while the comparison school dropped from 85.5% to 81%. (p. 30) In schools where the percentage of students scoring in the advanced plus proficient levels was relatively high (above 92%), ...the model schools dropped between .9% and 2.4%, and the comparison schools dropped at a greater rate to between 3.6% and 7.2% (p. 29).

The study's authors (RealVisions, 2007) comment that arts integration seems to allow model schools with a relatively high percentage of students scoring in the advanced plus proficient levels in reading and math to maintain their level of achievement. They also point out that model schools with a lower percentage of students in the advanced plus proficient levels in reading and math, increased the percentage of students achieving at that level.

The most dramatic differences occurred in the model school which started the grant period with the lowest percentage. Providing model school teachers with the knowledge and opportunity to implement arts-integrated instruction appears to have made it possible for students to score at a higher level on standardized tests (p. 30).

The study's authors cautioned that arts integration in the model schools may have been only one of a number of variables affecting the increase or maintenance of students' scores on MSA reading and math tests. "Yet, coupled with the perceptions of model school teachers and leaders that arts-integrated instruction made it possible for them to engage all students in learning, it is reasonable to consider arts integration a positive factor in increasing student achievement" (p. 30).

In summary, the three studies (Kruger, 2005; RealVisions, 2007; Isenberg et al., 2009) indicate that arts integration has positively impacted student engagement and motivation to learn as well as cognitive and social skills. Student report card grades and standardized test scores show improvement over time with the most dramatic improvement in schools that started at a lower level of achievement.

Impact on Teachers

Strong support for the value of arts integration. Teachers' experiences in learning about and implementing arts integration resulted in strong support of its value for student learning (RealVisions, 2007; Isenberg et al., 2009). Between 89% and 93% of the teachers surveyed each year reported that integrating the arts added value to their repertoire of instructional strategies (Isenberg et al., 2009, p. 191). Additionally, the CETA program's professional development helped teachers feel empowered as practitioners of a method of instruction that they saw as making a difference for their students (RealVisions, 2007).

Both studies (Isenberg et al., 2009; RealVisions, 2007) cited several reasons why teachers value arts integration. Arts integration gives teachers the ability to:

Reach all kinds of learners. Teachers indicated they believe that the CETA program's focus on arts integration has provided them with the tools and ideas to reach and engage all types of learners. Survey data from 2008 (Isenberg et al., 2009) alone showed that:

Ninety-three percent of the teachers use arts integration to address the variety of students' learning styles. As one teacher reports, 'I have been given the resources to get students really involved in learning. They are able to demonstrate genuine learning, transfer across the curriculum, and enthusiasm for the subjects and techniques.' (p. 17)

Widen the opportunity for all students to be successful. Teachers and leaders (in focus groups and on reflection sheets) indicated that they believe that arts integration offers all students opportunities to be successful, thus motivating more students to be engaged in learning. They witnessed high achievers becoming engaged because of the opportunity to accelerate and apply higher order thinking skills and creativity as well as special learners becoming involved and benefiting from arts integration (RealVisions, 2007).

Provide multiple ways for students to express knowledge and understanding. Across all data sources for the entire evaluation period, Isenberg et al., (2009) found that teachers felt that arts integration is "particularly beneficial for students who might not be able to succeed or express themselves through traditional teaching methods" (p. 17). Increased use of arts integration provided teachers the ability to "engage students' attention and interest and unlock the potential of those who might not otherwise be able to express their knowledge" (p. 17). Additionally, "Across all three years of this evaluation, more than 90% of the teacher survey respondents used arts integration most frequently to help students demonstrate understanding in different ways and to address a variety of learning styles" (p. 17). These findings align with the RealVisions (2007) study in which teachers reported arts integration as "providing engaging alternative approaches that met divergent student needs" (p. 15).

Increased Use of Collaborative Learning. Arts integration had a positive impact on teachers' pedagogy. After three years of arts integration, students in all three model schools participated in collaborative learning more frequently than students at the comparison schools. Similarly, teacher use of collaborative learning strategies was more frequent at the model schools (RealVisions, 2007). One CETA model school saw a steady increase in teachers' use of collaborative learning strategies over the three-year period, climbing from around 16% in 2005, to 36% in 2006, and 41% in 2007. The study's authors noted that, "If indeed arts integration

instruction contributed to increased student achievement for students, then perhaps it did so by increasing the time students spent in collaborative learning experiences” (p. 30).

Range of Implementation. According to Isenberg et al. (2009), teachers (90%) across all CETA schools reported substantial comfort in replicating specific activities/units as well as adapting or extending the arts integration techniques they learned in workshops. The amount of the integration in the classroom varied—some teachers integrated sporadically while others integrated on a daily basis as part of their approach to teaching. “Although each school looks very different in its levels of use, implementation, and extension of arts integration techniques, all are using what has been learned through [the] CETA [program]” (p. 16). During the final year of the three-year study, “Teachers spoke less of the struggle to master techniques and more about how CETA has inspired, renewed, and energized their practice” (p. 16).

Changing Role of Arts Specialists. The CETA program has had benefits for arts specialists too. In the study by RealVisions (2007), arts specialists reported that they were becoming “more familiar with non-arts curriculum and more aware of students in a holistic way” (p. 9). They also “felt more integrated into the school because of their enhanced value and credibility” and “felt empowered because of the positive influence they had on classroom teachers’ ability to work effectively in the arts” (p. 9). The impact of arts specialists was considerable, given that teachers regarded them as one of the three supports crucial to their arts integration efforts (along with planning and co-teaching).

Development of Teachers’ Skills Requires Time. The study by RealVisions (2007) indicated that “a critical mass of teacher leaders” did not emerge until the third year. After three years, teachers were “more comfortable teaching arts integrated lessons and units, taught them with more frequency, and regarded their efforts to be more effective” (p. 28). In summary, two studies (RealVisions, 2007; Isenberg et al., 2009) provided support for arts integration as a strategy that teachers felt added value to their instructional practices. Student engagement increased as teachers used more collaborative learning strategies in classrooms. Although there was a wide range of implementation, all teachers were using what they had learned through the CETA program. The role of arts specialists changed, making them a strong support for teachers. Lastly, time was a factor in developing teacher expertise, with results emerging in year three.

Impact on Schools

Changes in School Culture and Growth of Teacher Collaboration. Two studies (RealVisions, 2007 and Isenberg et al., 2009) reported ways that the arts integration program has impacted the schools. According to RealVisions (2007), the program, in varying degrees, “precipitated whole school change” (p. 19). Teachers reported that arts integration “made the entire atmosphere of their school more positive and cohesive, and helped make their school more child-centered” (p. 19). Further, teachers reported that they developed a common language for arts integration and benefited from “a set of common experiences that in turn positively affected the growth of a school-wide culture of arts integration” (p. 7).

According to Isenberg et al. (2009), across all data sources, teachers cited the most profound change since joining the CETA program was increased collaboration among peers. RealVisions (2007) survey responses also “revealed that teachers viewed arts integration as having had the most impact on helping to create an environment conducive to teacher innovation and increasing teacher collaboration” (p. 19). Arts integration planning and co-teaching helped teachers “get to know one another better, made them more accepting of one another and of feedback and suggestions, and helped them be more comfortable asking for the sharing of ideas and resources” (p. 19).

The RealVisions (2007) study reported that teachers and school leaders at one CETA school often referred to their school's growing learning community as a significant success. "Many felt that the staff's substantive involvement with arts integration professional development had created a professional learning community model that positively affected all areas of the curriculum and made them better teachers" (p. 19).

Need for Administrative Support. RealVisions (2007) recognized the importance of administrative support particularly from the principal and an arts integration resource teacher. According to Isenberg et al. (2009):

Administrative support of the CETA program has been integral to the successful implementation and transformation of the school culture related to arts-integrated teaching. Interview, observation, and survey data indicate that the amount of support provided is positively related to the participation, growth, and sustainability of the CETA program. Teachers and administrators across all sites acknowledge the importance of this support (p. 20).

Further, Isenberg et al. (2009) cited the power of principal leaders who defined and articulated a vision for the school's growth, developed goals that deepened the quality of arts integrated instruction, and gathered needed resources. These principals were clear and vocal about their belief in arts-integrated teaching and their expectations for teachers and encouraged teachers to implement CETA strategies.

This study also examined the importance of leadership by an arts integration resource teacher. Resource teachers are an in-house resource with a range of responsibilities, including organizing professional development courses, co-teaching and leading demonstration lessons in the classroom, and helping teachers plan arts-integrated lessons. This interaction "increases teachers' exposure, use, beliefs, and knowledge" about arts integration (p. 21). Both teachers and principals reported that this resource person can promote arts integration as a school-wide focus and can help to bring a school to a higher level of implementation of CETA strategies, as well as program sustainability and growth.

In summary, studies by RealVisions (2005) and Isenberg et al. (2009) indicate that the CETA program has (a) positively impacted school culture; (b) increased collaboration among teachers; and (c) recognized the importance of administrative support from principals and arts integration resource teachers for program growth and sustainability.

Conclusion

Since 1999, The John F. Kennedy Center for the Performing Arts has been involved in an intensive, sustained partnership with schools, Changing Education Through the Arts (CETA). As a whole school reform model, the CETA program is designed to impact student learning and attitudes by building teachers' capacities to make arts integration one of their primary approaches to teaching across the curriculum.

Throughout its development, the CETA program has continually examined and refined its strategies and processes. During its first decade (1999 to 2009), the program formally examined its impact through three independent, multi-year evaluation studies. Examined together, the findings from the three studies (Kruger, 2005; RealVisions, 2007; Isenberg et al., 2009) support the hypothesis that providing capacity-building arts integration professional development opportunities for teachers improves instruction by enabling teachers to effectively integrate the arts across the curriculum. This growth in turn engages children in learning in such a way that their academic performance, attitudes about learning, and engagement improves. These changes

would impact the schools' culture, establishing a shared vision and mission and creating stronger collaboration between and among teachers.

In summary, the three studies found the positive impact of:

- Arts integration on student learning, engagement, and attitudes about learning, especially for low-performing students.
- Ongoing professional development in arts integration on changing teachers' beliefs and practice in arts integration and reenergizing their teaching.
- Arts integration on transforming the whole school by creating a collaborative culture.

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