

Oklahoma Arts Council
Americans for the Arts
State Policy Pilot Program | SP3

Arts Education in Oklahoma:
A Literature Review

Prepared by Resources for Learning

Oklahoma Arts Council Americans for the Arts

State Policy Pilot Program | SP3

Arts Education in Oklahoma: A Literature Review

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RESOURCES
for **LEARNING**

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Report Overview

In 2014, Oklahoma was one of ten states selected to participate in Americans for the Arts' State Policy Pilot Project (SP3), a three-year initiative aimed at strengthening arts education. The Oklahoma Arts Council was the agency charged with leading its state's team for the initiative. Currently, variation exists in the amount and type of arts education available to students in Oklahoma. Each of the state's more than 500 school districts has the ability to decide how—and if—arts learning will be implemented. Students in rural and/or underserved urban communities are, therefore, much less likely to receive consistent, meaningful arts instruction in the classroom.

Oklahoma's participation in the initiative came at an opportune time as changes in state and federal level policy and funding began to imply a need to address long-term shifts in public education. Following the State of Oklahoma's repeal of Common Core Standards in English language arts and mathematics, the Oklahoma State Department of Education (OSDE) developed new, state-tailored and state-specific academic standards in 2014. Changes to state education standards coincided with declining state revenues, and the resulting reductions in education funding continue to have widespread implications. At the federal level, passage of the Every Student Succeeds Act (ESSA) in 2015, which replaced No Child Left Behind, also provided renewed dialogue and opportunity for strengthening local control of education. Currently, OSDE is developing a state plan for the implementation of ESSA in Oklahoma.

To guide the continuing work of the state's SP3 team, the Oklahoma Arts Council gathered a geographically, organizationally, and culturally diverse task force comprised of arts education professionals to help determine priorities and steer efforts for the initiative. Task force members represent district administrators, current educators, representatives from higher education, directors of education-related nonprofits, and others who hold active roles in shaping the educational environment of our state.

Over the course of its first three meetings, the task force worked to discuss and define what it considers the necessary support mechanisms for strengthening arts education in schools across the state. Broad discussions resulted in a lengthy list that was honed into a set of three main priorities for arts education: 1) supporting quality instructors and content; 2) ensuring access to the arts for all students; and, 3) framing the message that the arts are essential.

To inform the work of the task force, the Oklahoma Arts Council engaged Resources for Learning (RFL), an organization that specializes in the development, implementation, and evaluation of standards-based educational reforms, to examine available research evidence related to the impact of arts education on student outcomes. RFL conducted a search of the past 30 years of published research to answer two primary research questions:

1. **What is the impact of fine arts on student performance on measures of college and career readiness?**
2. **To what extent is participation in fine arts associated with higher outcomes on measures of college and career readiness?**

The first research question seeks to learn about whether participating in the arts results in better outcomes, while the second seeks to explore—but not assign causality to—the relationship between the arts and outcomes.

The following literature review is meant to support the work of this task force by providing strong rationale and case-making messaging that can be used by teachers, administrators, and policymakers to strengthen and enhance arts education delivery for all Oklahoma students.

Previous Collections, Reports, and Reviews

The RFL research team first cast a wide net to explore the topic broadly. Several previous articles, white papers, and syntheses (which examine findings across multiple research studies) have reported on the effect of the arts on student outcomes. For example, a special issue of *The Journal of Aesthetic Education* in 2000 was devoted entirely to studies that investigated the impact of fine arts on student achievement. The large-scale seminal report, *Champions of Change* (Fiske, 1999), compiled seven research studies that explored the effect of the arts, and the *Reviewing Education and the Arts Project* (REAP) (Hetland & Winner, 2001) reviewed research from studies published between 1955–1999. Several studies in the early 2000s found that involvement in music instruction positively effects spatial reasoning (Hetland, 2000; Deasy, 2002; Hetland & Winner, 2001), and the use of drama in preschool and primary grades was found to contribute to the development of critical academic skills (e.g., numeracy) (Deasy, 2002). RFL also located two more recent reviews of literature. One examined the effect of music on children’s intellectual abilities

(Jaschke, Eggermont, Honing, & Scherder, 2013) and the other examined the effect of drama-based pedagogy on PK–16 learning outcomes (Lee, Patall, Cawthon, & Steingut, 2014). These previous studies and compilations of research provide foundational knowledge and direction for further study (for a complete summary of previous reports, white papers, syntheses, and meta-analyses between 1986–present day, see the table in **Appendix C**.)

Current Study: A Best Evidence Systematic Review of Literature

In response to Research Question 1, RFL decided to launch a “best evidence synthesis,” which meant that researchers not only reviewed studies relevant to the research question, but also interpreted findings in light of each study’s level of rigor. Thus, researchers isolated a body of research that provides the most trustworthy evidence possible of whether a causal link can be made between arts and student outcomes.

Studies were included in this “best evidence” systematic review of literature only when they met stringent inclusion criteria (e.g., studies had to include a comparison or control group; studies had to provide pre-test and post-test data for participants). A complete description of methodology can be found in **Appendix A**. Once a study met these strict design criteria, researchers assigned each study a score for methodological level of rigor, designating each study as demonstrating a high, medium, or low level of rigor (see **Appendix B** for rating sheet). The final set of included studies are presented in **Table 1**.

To address Research Question 2, the search also yielded a number of correlational studies (summarized in **Table 2**) investigating the extent to which involvement in the arts is associated with improved student outcomes (e.g., whether students who are involved in the arts tend to earn higher SAT scores). Correlational findings help identify relationships, provide additional information, and inform future research questions for empirical study but do *not* provide evidence to support causation. For instance, if a correlational study finds that exposure to cold weather is associated with sneezing, it does not prove that sneezes are *caused* by the weather (or the converse, that sneezes *cause* the weather to be cold). Correlational research merely notes the presence of a relationship. Researchers were not exhaustive in the search for correlational data, choosing to present findings that seemed most relevant to answering the research question.

General Description

“Best Evidence” Systematic Review of Literature

Researchers examined 20 articles for inclusion in this systematic review of literature, summarized in **Table 1**. One of the articles contained two studies, so there were a total of 21 studies included in this body of research. The following characterize the 21 studies that comprise this body of research:

- Years of publication ranged from 1998–2014.
- Twelve were published since 2006.
- Most studies were specific to a particular fine arts discipline while others included multiple disciplines:¹
 - Seven were specific to theatre.
 - Twelve were specific to music.
 - Six were specific to visual arts.
 - Five were specific to dance.
 - Two included general arts.
- Sixteen utilized quasi-experimental methodology and five were randomized controlled trials.
- Sixteen included art programs or instruction during the school day and five included art programs or instruction outside of the school day.
- Nineteen included students from preschool to Grade 5 and two included students in Grade 6 or above.
- None included students in Grades 9–12.
- Nine included student groups comprised of more than 50% students eligible for free and reduced meals.²
- Thirteen included student groups comprised of more than 50% students who were non-Caucasian.³

Correlational Studies

Researchers included 12 correlational studies that investigated the association between participation in the arts and student achievement, summarized in **Table 2**.

1 Some studies included more than one art discipline so these numbers do not reflect the 21 studies.

2 This data was not available for all studies.

3 This data was not available for all studies.

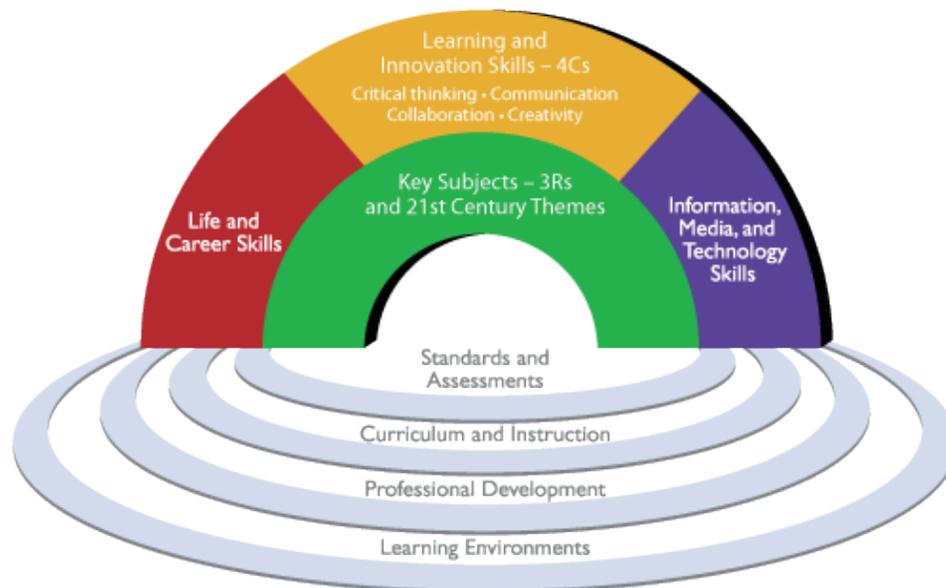
Key Findings

Key findings across studies are organized by the four elements of the P21 Framework for 21st Century Learning⁴ (see **Exhibit 1**). This framework is broader than traditional academic measures and reflects both student skills and support systems, all of which are needed for student success in college and career. While several findings from correlational research studies are included, the quasi-experimental and experimental studies directly address the posed research question and are indicated with an asterisk*.

Exhibit 1.

P21 Framework for 21st Century Learning

21st Century Student Outcomes and Support Systems



© 2007 Partnership for 21st Century Learning (P21)
www.P21.org/Framework

Key Subjects and 21st Century Themes

The Key Subjects and 21st Century Themes element of the Framework includes the traditional academic subjects (e.g., English language arts, mathematics, economics, history, science, civics, arts). The majority (15) of the studies from the systematic review included student outcomes that fall under the umbrella of a portion of this Framework. Many of the other studies also included outcomes from within this framework. Findings are organized by content area.

4 <http://www.p21.org/our-work/p21-framework>

Mathematics

- Students who were enrolled in a program that used music instruction to teach fraction concepts in elementary curriculum showed significantly higher results than did students enrolled in a traditional curriculum program (Courey, Balogh, Siker, & Paik, 2012)*.
- Instrumental music participation is associated with higher language arts assessment scores (Babo, 2004).
- For English and math, middle school students in both exceptional music programs and deficient instrumental programs scored better than those in no music classes or deficient choral programs (Johnson et al., 2006).
- At the elementary level, students in exemplary music education programs scored higher on English and mathematics tests (Johnson et al., 2006).
- Students in high school music ensembles are more likely to have higher standardized math achievement scores (Miksza, 2010).

Civics

- Students who received music instruction scored significantly higher on their state's standardized test reading and citizenship sections compared to students who did not receive music instruction (Wallick, 1998)*.
- Students in high school music ensembles are more likely to be concerned about community ethics (Miksza, 2010).

English Language Arts

- Preschool children who received music intervention demonstrated better achievement emergent literacy (oral vocabulary and grammatical understanding) than did students who did not receive music intervention (Runfola, Etopio, Hamlen, & Rozendal, 2012)*.
- Students who received piano lessons had significantly better vocabulary and understanding of the logical order of words after the intervention than did students who did not receive lessons (Prio & Ortiz, 2009)*.
- Students who attended a visual arts summer camp scored significantly higher compared to the control students on a reading assessment (Borman, Goetz, & Dowling, 2009)*.
- Students who received four months of music instruction showed significantly greater gains in development of their ability to break words into sounds (a primary component of phonemic awareness) when compared with those who did not receive music (Eastlund Gromko, 2005)*.

- Students in an arts enrichment preschool program showed greater end-of-year receptive vocabulary than children at the comparison preschool (Brown, Benedett, & Armistead, 2010)*.
- Students who received drama-based reading instruction had higher improvements in reading skills more than students who had traditional curricular approaches (Rose, Parks, Androes, & McMahon, 2000)*.
- Participation in a classroom in which drama was integrated into language arts instruction was a significant predictor of students' scores in the state assessment of language arts. The odds of passing the state assessment in mathematics was also increased by 42% for students in the drama-integrated classrooms (Walker, Tabone, & Weltsek, 2011)*.
- English language learners (ELL) who participated in an integrated arts program were significantly more likely to pass the English language arts (ELA) examination than those who did not participate (Peppler, Powell, Thompson, & Catterall, 2014)*.

General Academic Outcomes and Standardized Tests

- Music participation, both inside and outside of school, is associated with higher academic achievement for children and adolescents (Southgate et al., 2009).
- Students who take art course(s) in high school have higher SAT scores (both math and verbal), and those who take four years of arts courses have higher SAT scores than those who take one to three years of art (Vaughn et al., 2000).
- Students at schools with an arts focus combined with arts integration programming scored higher on state assessments than students who received academic or conventional arts instruction (Scripp et al., 2014).
- The achievement gap between previously designated low, average, and high performing students narrows or disappears with arts integration (Scripp et al., 2014).
- Students enrolled in formal instrumental or choral music instruction during middle school had higher assessment scores (Helmrich, 2010).
- Overall, instrumental students outperformed their peers on state assessments and participation in instrumental music helps close the achievement gap for low socioeconomic students, surpassing their non-instrumental peers by Grade 9 in all subjects (Fitzpatrick, 2006).
- Sixth-grade band students had higher performance on achievement tests than choir students and nonparticipants (Kinney, 2008).

- High school students who had high levels of arts engagement:
 - Earn better grades
 - Demonstrate higher rates of college enrollment and attainment
 - Are five times more likely to graduate
 - Enroll in competitive colleges and in more four year colleges
 - Are three times more to earn a bachelor’s degree
 - Are more likely to earn mostly A’s in college (Catterall et al., 2012)

Learning and Innovation Skills

The Learning and Innovation Skills element of the Framework features items that prepare students for complex life and work environments, and includes creativity and innovation, critical thinking and problem solving, communication, and collaboration. The findings are listed below.

- Students who enrolled in music lessons had significantly increased hand-eye coordination than students who did not (Miller & Orsmond, 1999)*.
- Students who received music instruction had increased abstract reasoning abilities (ability to identify patterns, trends, and logic) than students who did not (Bilharz et al., 2000)*.

Information, Media, and Technology Skills

The Information, Media, and Technology Skills element of the Framework is the ability to work within the world of technology. This includes information literacy, media literacy, and information, communications, and technology literacy. We did not locate any studies related to this Framework element, so this is a clear gap in the body of research.

Life and Career Skills

The Life and Career Skills element of the Framework features items that focus on students’ social and emotional learning, thinking skills, and content knowledge. This includes flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, and leadership and responsibility. The findings are listed below.

- Children involved in an arts-integrated preschool setting showed observed positive emotions such as interest, happiness, and pride when compared to children who did not participate in the program. These children also showed greater growth in teacher-rated levels of positive and negative emotion regulation (Brown & Sax, 2013)*.
- Students who participated in a dance program had significant gains over time in social competence when compared to students who did not participate (Lobo & Winsler, 2006).

- Low-income adolescents who participated in after-school theatre programming had increased social growth, including making new friends, building self-esteem, and increased overall confidence (Greenberg, 2010)*.

Limitations

One limitation of this systematic review of literature is a lack of studies examining the impact of arts involvement on older students. The majority of the studies investigated the effect of arts on outcomes with preschool and elementary students, while only two studies included middle school students, and none of the studies we included examined the impact of arts involvement on high school students. It is unclear whether this limitation represents a paucity of research at the secondary levels or suggests a flaw in our search process. Finally, the quality of any synthesis reflects the quality of the studies synthesized. While we made every effort to implement quality control processes, we see a continued need for rigorous research to further explore this topic.

Table 1. “Best Evidence” Systematic Review of Literature

Quality Level: High **Arts:** Theatre

Citation: Freeman, Sullivan, & Fulton, 2003

Summary: The article examined the effects of creative drama activities on self-concept, problem behavior, and social skills for students in Grades 3 and 4. Students in the treatment group participated in creative drama activities one day a week for 18 weeks. The control group did not participate in creative drama activities. Students completed the Student Self-Concept Scale to measure self-concept, and the teachers completed the Social Skills Rating System to measure students’ social skills and problem behavior.

Major Findings: The study suggests that creative drama does not improve self-concept, problem behavior, or social skills of 3rd- and 4th-grade students.

Quality Level: High **Arts:** Music, Dance, Visual arts

Citation: Brown et al., 2010 (1)

Summary: This study examined achievement within an arts enrichment preschool that served low-income children. Arts were integrated into the day and students received arts integration for between one and two years. Outcomes included children’s developmental level and pre-academic achievement. The control group attended a traditional preschool.

Major Findings: Results indicated that students practiced school readiness skills through early learning, music, creative movement, and visual arts classes.

Quality Level: High **Arts:** Music, Dance, Visual arts

Citation: Brown et al., 2010 (2)

Summary: This study examined achievement within an arts enrichment preschool that served low-income children. Arts were integrated into the day and students received arts integration for one to two years. Outcomes included children’s receptive vocabulary. The control group attended a traditional preschool.

Major Findings: Children at Kaleidoscope showed greater end-of-year receptive vocabulary than children at the comparison preschool.

Quality Level: High **Arts:** Music, Dance, Visual arts

Citation: Brown et al., 2013

Summary: This study examined the effect of attendance for low-income children attending Settlement Music School's Kaleidoscope Preschool Arts Enrichment Program. The program includes art integration into the school day. Outcomes included teacher-rated emotional regulation and a vocabulary test. The control group attended a traditional preschool without arts integration.

Major Findings:

- Children in the treatment showed greater observed positive emotions such as interest, happiness, and pride.
- Children in the treatment also showed greater growth in teacher-rated levels of positive and negative emotion regulation.

Quality Level: High **Arts:** Visual arts

Citation: Borman et al., 2009

Summary: In this randomized field trial of KindergARTen Camp, a 6-week summer enrichment program in literacy and the fine arts, researchers analyzed the summer learning outcomes of 93 treatment and 35 control students from high-poverty schools in Baltimore, Maryland. This experiment offers evidence concerning the causal effect of the program on five measures of students' literacy achievement.

Major Findings: KindergARTen Camp students scored significantly higher on the Developmental Reading Assessment (DRA) and the Word List A assessments compared to the control students.

Quality Level: High **Arts:** Visual arts, Theatre

Citation: Pepler et al., 2014

Summary: This study included the Learning and Achieving Through the Arts (LATA) program in which students engage in art classes for multiple art forms twice per week. The study compared multiple cohorts and schools to examine longitudinal impact. The control group did not attend the LATA program. Outcomes included the California State Test of English Language Arts.

Major Findings:

- Treatment students were significantly less likely to pass the ELA exam at baseline than control students, but more likely to be proficient on the ELA exam in years 1–3 after receiving LATA arts programming and integration, providing strong support for the model at the school-wide level.
- ELL treatment students were significantly more likely than ELL control students to pass the ELA exam in years 1–3 after participating in the LATA model of arts programming and integration.

Quality Level: High **Arts:** Music

Citation: Bilhartz, Bruhn, & Olson, 1999

Summary: The relationship between participation in a structured music curriculum (Kindermusik) and cognitive development was studied. First grade, kindergarten, and pre-kindergarten students participated in a 30-week, 75-minute weekly, parent-involved music curriculum. The other half of the participants did not receive music curriculum. Children were pre- and post-tested with six subtests of the Stanford-Binet Intelligence Scale, fourth edition, and the Young Child Music Skills Assessment.

Major Findings:

- Kindermusik instruction enhances cognitive development in abstract reasoning abilities.
- The study suggests a relationship between early music instruction and spatial-temporal reasoning abilities.

Quality Level: High **Arts:** Music

Citation: Courey et al., 2012

Summary: This article examined the effects of an academic music intervention on conceptual understanding of music notation, fraction symbols, fraction size, and equivalency. Third grade classes were provided general mathematics instruction or to academic music instruction for two 45-minute sessions per week over the course of six weeks. Students were pre- and post-tested with a music test, fractions concepts test, and fraction worksheet to measure program impact.

Major Findings:

- The use of music to teach fraction concepts in the elementary curriculum is a promising practice.
- Academic music intervention is effective in closing the gap for students who start with a lower than average understanding of fractions (than higher achieving peers).

Quality Level: High **Arts:** Music

Citation: Piro et al., 2009

Summary: The study sought to examine the effects of a scaffolded music instruction program on the vocabulary and verbal sequencing skills of students. One cohort of 2nd grade students studied piano formally for a period of three consecutive years as part of a comprehensive instructional intervention program. The second group had no exposure to music lessons, both in and outside of school. Both groups were assessed on two subtests from the Structure of Intellect measure.

Major Findings: Integrated music training in the content area of reading is associated with higher performance on literacy tasks.

Quality Level: High **Arts:** Music

Citation: Wallick, 1998

Summary: This study examined the effects of a pullout string program on 4th grade student achievement in the writing, reading, mathematics, and citizenship sections of the Ohio Proficiency Test. Students were matched by their performance on a standardized test. The pullout program met twice a week for 30 minutes. The non-string students did not engage in the pullout program. The study outcome was the Ohio Proficiency Test.

Major Findings:

- Students who were pulled out for string instruction scored significantly higher on the OPT reading and citizenship sections.
- Students who were pulled out for string instruction did not score lower on any of the OPT sections.

Quality Level: High **Arts:** Dance

Citation: Lobo & Winsler, 2006

Summary: The study examined the effect of a creative dance/movement program on the social competence of preschool children of low socioeconomic status. Preschool students were assigned to participate in either an experimental dance program or an attention control group, which met for eight weeks. Teachers and parents, uninformed of the children's group membership, rated children's social competence before and after the program, using the Social Competence Behavior Evaluation: Preschool Edition.

Major Findings: Small-group creative dance instruction is associated with positive gains in social competence and behavioral issues for at-risk children.

Quality Level: Medium **Arts:** Music

Citation: Miller & Orsmond, 1999

Summary: Offers a scholarly paper on the effects of early music instruction of children on music perception as well as on specific areas of cognitive development. Details the methodology and results of the experiment, which examined an array of musical and cognitive behaviors in children beginning private music lessons and again after four months of lessons. Focuses on children enrolled in Suzuki music lessons and considers how the results of this research have several practical implications for music education.

Major Findings:

- Music training did not enhance receptive vocabulary.
- Music training did enhance spatial skills for some of the measures, but not for all.
- Music lessons were specifically effective for increasing visual-motor integration.

Quality Level: Medium **Arts:** Music

Citation: Eastlund Gromko & Smith Poorland, 1998

Summary: The study examined the effects of music training on spatial-temporal task performance. Preschool students in the treatment group met once a week for music class for seven months. The control group did not receive music training. Both groups were measured before and after program implementation for Performance IQ using the Wechsler Preschool and Primary Intelligence Scale Revised.

Major Findings:

- Music training was associated with more gains in the ability to perform spatial temporal tasks shown by Performance IQ.
- The gains in IQ were greater for the younger preschool students compared to their older classmates.

Quality Level: Medium **Arts:** Theatre

Citation: Greenberg, 2010

Summary: This study examined if involvement in an after-school theatre program can be associated with low-income middle school students' social and academic growth. Students participated in an after-school theatre program, attending 19 weekly rehearsals. A second group of students with a similar baseline of self-reported social and academic confidence served as a control and did not participate in theatre programs. At the beginning and the end of the school year, both groups of students completed a survey to measure social and academic growth.

Major Findings:

- Involvement in after-school theatre programming is associated with low income adolescents' social and academic growth.
- Participants reported personal growth in the ability to make new friends, increased self-esteem, deeper commitment to teamwork, and better memorization and public speaking skills.

Quality Level: Medium **Arts:** Visual arts, Music, Dance, Theatre

Citation: Luftig, 2000

Summary: This study examined the effects of an arts infusion program (SPECTRA+) on 3rd-, 4th-, and 5th-grade students from four schools in two school districts. Students either were enrolled in an arts infusion program, a modified control group, or a full control group that did not receive any arts infusion. The outcomes included student scores on standardized tests in academic achievement, self-esteem, locus of control, and appreciation for the arts.

Major Findings:

- Results for the SPECTRA+ program were not consistent.
- SPECTRA+ boys scored higher in math than all other groups but SPECTRA+ girls scores lowest.
- In one school the SPECTRA+ students scored higher in reading than the control group, but this did not occur in the other schools.

Quality Level: Medium **Arts:** Theatre

Citation: Walker, Bosworth McFadden, Tabone & Finkelstein, 2011

Summary: The integrated strategies project involved artists and teachers collaborating on the instruction of 40 drama-based lesson plans that were linked to the district mandated literary texts for the 6th and 7th grades and taught over the course of the academic year. Beginning in October, all teachers in the treatment group were given training on drama and related arts techniques and were provided an opportunity to practice these with students and receive constructive feedback on the lesson implementation. Once the study began in the classrooms, teachers and teaching artists implemented the lesson and then debriefed with one another about what they observed that went well, how students responded, and what pedagogical changes needed to be made for the next lesson.

Major Findings:

- The only factor that was found to be significant in predicting whether a student would be successful on the state assessment in language arts was whether or not that student received his or her language arts instruction in a classroom in which drama is used to support language arts skill development
- The odds of passing the state assessment in mathematics was increased by 42% for students in the drama-integrated language arts classrooms
- There was not a significant difference in absenteeism for students in the integrated classroom compared to the control group

Quality Level: Medium **Arts:** Music

Citation: Runfola et al., 2012

Summary: This study examined the impact of a program that included one year of intensive professional development for teachers and one year of curriculum implementation of a music integration curriculum. Musically-trained early childhood specialists worked with preschool students for one year. The control group did not receive this curriculum. Outcomes included music and literacy measures.

Major Findings:

- Preschool children who received this music intervention demonstrated better achievement in both music (early audiation of tonal elements) and aspects of emergent literacy (oral vocabulary and grammatical understanding).
- Music achievement of young children was improved through effective and systematic professional development of early childhood specialists.

Quality Level: Medium **Arts:** Theatre

Citation: Walker et al., 2011

Summary: The impact of integrating theatre arts into the language arts and social studies curricula on students' cognitive, procognitive, and prosocial development was studied. Classrooms of 4th- and 5th-grade students were assigned to an arts-integrated curriculum in which drama-based strategies were integrated in the social studies and language arts curriculum, or a control group of regular language arts and social studies instruction. Impact was measured with the state assessment (the New Jersey Assessment of Skills and Knowledge), class grades, and a researcher-developed instrument to measure prosocial and precognitive gains and attitudes toward the arts.

Major Findings:

- Integrating theatre arts into core curriculum improves performance in the traditional curricular areas.
- Fusing arts into social studies and language arts instruction produces better learning outcomes than typical direct instruction that lacks arts integration.

Quality Level: Medium **Arts:** Theatre

Citation: Rose et al., 2000

Summary: The effect of drama-based reading instruction and reading comprehension was studied. Grade 4 students participated in a drama-based reading comprehension program for 20 hours over the course of 10 weeks. Another group of students served as a control and did not participate in the drama-based program.

Both groups were pre- and post-tested to assess the impact of the drama-based instruction on students' test scores on the reading comprehension portion of the Iowa Tests of Basic Skills and change on the researcher-developed performance assessment.

Major Findings: Drama-based reading instruction improves students' reading skills more than traditional approaches, as evidenced by gains in standardized test scores and on a performance assessment.

Quality Level: Medium **Arts:** Music

Citation: Eastlund Gromko, 2005

Summary: This study determined the relationship between music instruction and improvement in the development of young children's phonemic awareness. Kindergarteners received music instruction for 30 minutes a week over four months. Kindergarten children at a different elementary school served as the control group. Students were assessed before and after with three subtests of the DIBELS.

Major Findings:

- Kindergarten children who received four months of music instruction showed improvement in the development of their phoneme-segmentation fluency.
- Active music-making and the association of sound with developmentally appropriate symbols may develop cognitive processes similar to those needed for segmentation of a spoken word into its phonemes.

Quality Level: Low **Arts:** Theatre

Citation: Otten, Stigler, Woodward, & Staley, 2004

Summary: This study examined a dramatic art-based history program for 5th-grade students. The program included student participation in musical theatre shows that were specific to historical events. Historical information was embedded within the musical dramas in which students performed. The control group enrolled in traditional history curricula and did not have access to the program. Outcomes included students' enjoyment of history and knowledge of history.

Major Findings:

- Students who participated in the program showed higher levels of history knowledge and enjoyment of history than those in the control group
- The effect on knowledge was partially mediated by level of enjoyment of history, which also predicted later scholastic achievement in history

Table 2. Correlational Studies

Citation: Babo, 2004

Arts: Music

Summary: The article studied the relationship between involvement in instrumental music and academic achievement for middle school students.

Major Findings: Instrumental music participation is associated with higher language arts assessment scores, and mathematics scores to a lesser degree.

Citation: Elpus, 2012

Arts: Music

Summary: The study analyzed the scores and academic performance of students who participated in music and their peers who were not involved in music activities.

Major Findings: Participation in music did not result in higher SAT or standardized math tests scores.

Citation: Fitzpatrick, 2006

Arts: Music

Summary: This study reviewed state assessment results of instrumental music students and their non-instrumental classmates by socioeconomic status at Grades 4, 6, and 9.

Major Findings: Overall, instrumental students outperformed their peers on state assessments. Participation in instrumental music helps close the achievement gap for low socioeconomic students, surpassing their non-instrumental peers by Grade 9 in all subjects.

Citation: Helmrich, 2010

Arts: Music

Summary: The study examined White and African American students to observe the association between the mode of music instruction received during Grades 6–8 and subsequent scores in introductory algebra (taken in Grade 8 or 9), as measured by the Maryland Algebra/Data Analysis high school assessment.

Major Findings:

- Students enrolled in formal instrumental or choral music instruction during middle school had higher assessment scores.
- For African American students, choral music instruction is associated with higher performance.

Citation: Johnson et al., 2006 **Arts:** Music

Summary: This article examined the relationship between music programs of varying quality and standardized test scores (Grades 3 or 4, Grades 8 or 9).

Major Findings:

- At the elementary level, students in exemplary music education programs scored higher on English and mathematics tests.
- For English and math, middle school students in both exceptional music programs and deficient instrumental programs scored better than those in no music classes or deficient choral programs.

Citation: Kinney, 2008 **Arts:** Music

Summary: This study examined achievement test scores of 6th and 8th grade students prior to their participation in performance ensemble (Grade 4) and during participation (Grade 6 or Grade 8).

Major Findings:

- Sixth-grade band students had higher performance on achievement tests than choir students and nonparticipants.
- Eighth-grade band students scored higher than nonparticipants on 4th grade reading and math and 8th grade reading, math, science, and language arts.
- Similar results for both cohorts suggest that band may attract higher achieving students from the outset and that test score differences remain stable over time.

Citation: Miksza, 2007 **Arts:** Music

Summary: The article examined the relationship between music, socioeconomic status, and standardized achievement (i.e., math, reading, social studies, science) for high school students. Students participating in music may have higher academic achievement levels in math, reading, science, and social studies.

Major Findings: The higher levels of achievement music participants are likely to apply regardless of socioeconomic status.

Citation: Miksza, 2010 **Arts:** Music

Summary: The study aimed to examine the relationship participation in high school music ensemble and extra-musical educational outcomes (i.e., math achievement, community ethic, commitment to school).

Major Findings: Students in high school music ensembles are more likely to have higher standardized math achievement scores, be more concerned about community ethics, and be more committed to school.

Citation: Scripp et al., 2014 **Arts:** Visual arts

Summary: The study examines positive impacts of a three year arts integration program on students in academic and arts-focused elementary schools.

Major Findings:

- Students at schools with an arts focus combined with arts integration programming scored higher on state assessments than students who received academic or conventional arts instruction.
- The achievement gap between previously designated low, average, and high performing students narrows or disappears with arts integration.

Citation: Southgate et al., 2009 **Arts:** Music This article investigates the music involvement and academic achievement in childhood and adolescence using measures of music participation: in school, outside of school, and parental involvement in the form of concert attendance.

Major Findings: Music participation, both inside and outside of school, is associated with higher academic achievement for children and adolescents.

Citation: Vaughn et al., 2000 **Arts:** Dance, Music, Theatre, Visual arts

Summary: This study demonstrates the relationship between students who take art course(s) in high school and SAT scores. Students who take art course(s) in high school have higher SAT scores (both math and verbal).

Major Findings: Those who take four years of arts courses have higher SAT scores than those who take one to three years of art.

Citation: Catterall et al., 2012 **Arts:** Dance, Music, Theatre, Visual arts

Summary: This report examines the academic and civic behavior outcomes of teenagers and young adults who had high levels of engagement with the arts.

Major Findings:

- High school students who had high levels of arts engagement:
- Earn better grades
- Demonstrate higher rates of college enrollment and attainment
- Are five times more likely to graduate
- Enroll in competitive colleges and in more four-year colleges
- Are three times more to earn a bachelor's degree
- Are more likely to earn mostly A's in college

Appendix A – Methodology

Article Identification

The Initial Search

We identified articles to include in this synthesis using a multi-step process. We first conducted an electronic search of articles published between 1986–2016 in Education Source, Academic Search Ultimate, ERIC, PsycINFO, Social Science Citation Index, Art and Architecture Source, Music Index, Arts and Humanities Index, Social Sciences Full Text, Humanities Source, Humanities Source Ultimate, and International Bibliography of Theater and Dance Full Text. Variations of key search terms for student outcomes (*student achievement, college readiness, academic achievement, student outcomes, academic performance, social emotional*), were combined with key terms related to effect (*impact or benefit or effect*), subject area (*fine arts, art, music, theater, dance, visual arts, media arts*), and study design (*comparison, control, quasi-experimental, experimental, correlation, causal*) to capture relevant articles. This initial search yielded 378 potential articles for consideration.

We then manually reviewed every abstract of the 378 articles, excluding articles outside the scope of this review. To be included in the synthesis, articles had to meet the following criteria:

- Studies were conducted in the United States and reported in English.
- The article was published in a peer-reviewed journal (i.e., articles that were written by subject matter experts and reviewed by several other subject matter experts before publication).
- Participants were in grades PK–12.
- Acceptable research designs were experimental, quasi-experimental, or correlational.

Application of these criteria resulted in the exclusion of studies that were conducted outside of the United States (e.g., Hallam, S. & Price, J., 1998; Kılınçaslan, H. & Özdemir Simsek, P., 2015) or were specific to college-age students (e.g., De Petrillo, L., & Winner, E., 2005; Rauscher, F.H., Shaw, G.L., & Ky, K.N., 1993). This manual review trimmed our list to 51 articles. A team of two researchers then read each study to further eliminate articles that did not meet our criteria for inclusion. This further trimmed our total to 20 articles for coding, which is a formal process of organizing and labeling data. In this review, coding consisted of recording information about a number of components of each article to allow for comparison and summarization of the body of literature. This process is further detailed below.

Other Methods for Identifying Articles

Reference Chase

A team of two researchers conducted a reference chase of each of the 20 articles to identify articles that may not have been identified by the search. This included seeking out topical references from the literature review of each article. When the literature review text referred to research that seemed related to the present systematic review, we recorded the citation and then added the article to our list of 20 articles. We identified an additional 58 articles to review using this method. After reviewing each of these articles, we eliminated 42 articles, giving us a net total 36 articles.

Articles Identified from Other Systematic Reviews

A third researcher conducted a review of previous systematic reviews, meta-analyses, white papers, and reports related to our topic and identified 10 articles for consideration for inclusion in the present systematic review. The team of two researchers reviewed each of these articles applying the previously described inclusion/exclusion criteria. Five articles were eliminated during this process, bringing the total number of articles to 41.

Coding

To organize essential information about each article, researchers coded articles using a comprehensive coding document based on code sheets used in previous syntheses (Vaughn, Linan-Thompson, & Hickman, 2003) and reflecting elements from the evidence standards as established by the What Works Clearinghouse (U.S. Department of Education, Institute of Education Sciences, 2014). Essential information coded included the following:

- Whether article was found through the reference chase
- Whether article was found through systematic review references
- Who the article was coded by
- Why the article was eliminated
- Article citation
- Article abstract
- Arts represented
- Timing (e.g., during school day, summer, after school)
- Duration (e.g., school year, 6 weeks)
- Student grade(s) represented in study

- Percent of students eligible to receive free and reduced meals
- Percent of students who are minority (non-Caucasian)
- Percent of students who are female
- Research design (e.g., experimental, quasi-experimental)
- Participant assignment (e.g., random selection, matched/paired)
- Notes on participant attrition
- Fidelity of implementation check (i.e., if the treatment should be implemented in a specific way, were there checks of fidelity?)
- Statistics used (e.g., t-test, ANOVA)
- Outcomes type (for each study outcome) (e.g., academic achievement, social and emotional learning)
- Source of data (for each study outcome) (e.g., standardized test, validated instrument)
- Data description (for each study outcome)
- Summary of conclusions

Coding used a combination of forced-choice items (e.g., research design), open-ended items (e.g., grade in school), and a description of the treatment condition.

Reliability

A team of two researchers first coded four articles together to establish reliability. In each instance, the researchers individually coded the same article and then met to discuss how individual coding matched. Inter-rated reliability was 95% or greater. After establishing reliability, the two researchers divided the 41 articles, each coding 20 or 21. Throughout the coding process the researchers met frequently to clarify coding decisions or resolve differences that arose, thus ensuring that coders were consistent in their choices.

During coding, articles continued to be eliminated from the synthesis if they did not meet inclusion criteria. The total number of articles fully coded and included in this synthesis is 20. One of the articles contained two studies, so there are 21 studies that were coded. Table 1 reflects an abbreviation version of the information captured on our coding sheet, with information most pertinent to the Oklahoma Arts Council, followed by an overview of findings and implications.

Quality of Studies

Researchers developed criteria to use in determination of the quality of each study included in coding. This instrument was titled the “Quality Indicator Checklist” and included nine items that were rated. The instrument is included in **Appendix B**. Items investigated included participant selection (e.g., random sampling, matching), attrition, validity and reliability of outcome measures, and analyses (e.g., unit of analysis, effect sizes). Randomized controlled trials (RCTs—studies that include randomly selected control and treatment groups) could obtain as many as 18 points, and quasi-experimental studies could obtain as many 19 points. We classified high-quality studies as obtaining 14 (RCTs) or 15 (quasi-experimental) points or above. Medium-quality studies obtained between 10–13 (RCTs)/11–14 (quasi-experimental) points. Low-quality studies obtained less than or equal to 9 (RCT) or 10 (quasi-experimental) points. We had a total of 11 high-quality studies, nine medium-quality studies, and one low-quality study.

Appendix B – Quality Indicator Checklist

(Randomized Controlled Trial/RCT) How was random assignment performed?

- 1 Computer generated
- 1 Random numbers table
- 1 Coin toss/dice/shuffling/pulling names from hat
- 0 Not reported or unclear description

(Quasi-Experimental) How were groups matched?

- 1 Matched on pre-test measure
- 1 Matched on demographics
- 2 Matched on both of the above
- 0 Did not use matching or not enough information to determine

(ALL)

Results of statistical comparisons of baseline differences

- 2 Clear evidence of no statistically significant differences (randomization, no differences in any pre-tests of all outcomes, grade/age, race)
- 1 Possible important significant differences, but need further investigation
- 0 Not reported

If groups were non-equivalent at baseline, were statistical controls used?

- 1 Yes
- 1 N/A—groups were randomly assigned or no sig. pre-test differences
- 0 No, not reported, or unclear

Are participants adequately described (age, number, selection criteria)

- 2 Yes, adequate
- 1 Some information missing
- 0 No, or not reported

Did the study have high attrition (> 20% for either or both groups)?

- 1 No
- 0 Yes, not enough information to calculate

Were outcome measures used reliable and valid?

- 3 Yes
- 0 No, or not reported

Is the independent variable clearly described (e.g., dosage, # sessions, activities, duration)?

- 2 Yes, clearly
- 1 Yes, but some information lacking
- 0 No, or very unclear

Were the analyses (check all):

- 1 Of the correct unit of analysis
- 1 Appropriate and linked to key research hypotheses
- 1 Appropriate to the conclusions drawn
- 1 Inclusive of effect sizes

Were the results presented in a clear and coherent fashion?

- 2 Yes
- 0 No, or not reported

High Quality = 14 (RCT) or 15 (Quasi) or above

Medium Quality = 10-13 (RCT) or 11-14 (Quasi)

Low Quality = < 9 (RCT) or < 10 (Quasi)

Appendix C – Previous Compilations of Literature

Citation: Fiske, 1999

Summary: This multi-chapter report compiles seven separate research studies that explore why and how young people are changed through their arts experiences. Evidence is presented for why the arts should be more widely recognized and the ways in which they can contribute to the improvement of education in the United States.

Conclusions or Findings:

- Successful arts learning outside of schools can enhance the sense of accomplishment and well-being among young people.
- Involvement with the arts should be a basic part of the learning experiences.

Citation: Hetland & Winner, 2001

Summary: Reviewing Education and the Arts Project (REAP) conducted a comprehensive search for all studies from 1950–1999 that have tested the claim that studying the arts leads to some form of academic improvement. The research team calculated 275 effect sizes and conducted 10 meta-analyses of the studies included.

Conclusions or Findings:

- A substantial number of studies demonstrated a clear causal link between education in an art form and achievement in a non-arts area. The three areas identified with reliable causal links included: listening to music and spatial-temporal reasoning; learning to play music and spatial reasoning; and classroom drama and verbal skills.
- Areas where the research showed some slight causal link area included learning to play music and mathematics, and dance and nonverbal reasoning.
- Areas where they found no reliable causal relationship included arts-rich education and improvement on verbal or mathematics scores; arts-rich education and creative thinking; learning to play music and reading; visual arts and reading; and dance and reading.

Citation: Deasy, 2002

Summary: This compendium provides summaries of 62 research studies related to the effect of arts learning on student academic and social development. The report compiled articles related to five areas: dance, drama, multi-arts, music, and visual arts.

Conclusions or Findings: Authors provide several recommendations for future research:

- Define with greater depth, richness, and specificity the nature of arts learning.
- There is a need for more creative research designs that better probe complex learning experiences in the arts.
- Further research is needed related to how learning in the arts transfers to learning and behavior in other non-arts contexts, as well as how these effects are seen over time rather than in a single study “snapshot.”
- “Well-crafted” arts experiences produce positive academic and social effects. For example, the use of drama in preschool and primary grades has been found to contribute to the development of critical academic skills (i.e., literacy, numeracy).
- Music learning has been associated with the development of cognitive skills such as spatial reasoning.

Citation: Burnaford, Brown, & Doherty, 2007

Summary: The authors conducted an inclusive literature review of reports, books, articles, and research summaries written between 1995 and 2007 that examine the impact of arts integration. They examined large-scale research and evaluation studies; meta-analyses; discrete, small-scale arts integration studies; and arts integration dissertations.

Conclusions or Findings: While authors did not synthesize findings across studies, they summarize each study and state their hope that the review will, “contribute to continued dialogue and increasing rigor in research and practice with respect to how, when, and to what degree arts integration becomes an accepted and well-defined element of the curriculum.” Many of the studies included in this report are also found in reports found elsewhere on this table.

Citation: Hanna, Patterson, Rollins, & Sherman, 2011

Summary: The National Endowment for the Arts (NEA) in partnership with the U.S. Department of Health and Human Services (HHS) convened to showcase some of the nation’s most compelling studies and evidence-based programs that have identified cognitive, social, and behavioral outcomes from arts interventions. The resulting white paper proposes a framework for long-term collaboration among the NEA, HHS, and other federal agencies to build capacity for future research and evidence-sharing about the arts’ role in human development.

Conclusions or Findings:

- Music training in preschool children from low socioeconomic status (SES) families resulted in significant gains in non-verbal IQ, numeracy, and spatial cognition (Neville, et al. 2008).
- An “arts enrichment” preschool improved in-school readiness skills (Brown, Benedett, & Armistead 2010).

- Preschool children participating in an arts integration model improved in multiple domains, including initiative, social relations, creative representation, music and movement, language, literacy, and logic and mathematics, (Social Dynamics, LLC 2005).

Citation: Hetland, 2000

Summary: Hetland reports the findings of three meta-analyses. The first, largest analysis examined of data from 15 studies that tested the hypothesis that active instruction in music enhances performance on spatial-temporal tasks during and immediately after the music instruction for 3–12-year-old participants. The second, smaller analysis examined findings from three studies that used the same nonverbal measure of general or logical intelligence. The third meta-analysis combined nine effect sizes from eight studies that reported on a range of spatial abilities. Music programs included in these studies were generally aligned with the standards of professional music education described by the National Standards of Music Education.

Conclusions or Findings:

- Active instruction in music appears to enhance spatial-temporal performance for preschool and elementary-aged children.
- A small effect was observed on tests that are not strictly spatial-temporal.
- Findings support near-transfer theory, meaning that music might enhance other non-spatial-temporal spatial processes that might require spatial recognition, memory, mental rotation, and/or visualization.
- Ongoing, active engagement in music combined with programs of sound instruction in spatial skills can aid in at least one kind of spatial learning.

Citation: Butzlaff, 2000

Summary: One meta-analysis of six experimental research studies examining the *effect* of music (e.g., school music programs) on reading achievement, and 24 correlational research studies investigating whether music (e.g., school music programs) are associated with reading achievement.

Conclusions or Findings:

- Correlational research findings are consistent with the interpretation that music study enhances reading ability.
- The six experimental studies yielded no reliable effect.

Citation: Moga, Burger, Hetland, & Winner, 2000

Summary: Moga et al. conducted an analysis of eight empirical studies that investigated whether learning in the arts leads to creative thinking skills. The authors also conducted a secondary analysis looking at evidence for transfer from arts education to verbal vs. visual creative thinking.

Conclusions or Findings:

Modest evidence exists suggesting a causal relationship between arts study and creativity measures, but only with figural creativity measures.

When the measure was verbal/conceptual, no evidence for a causal relationship was found.

Some transfer appears to occur when the bridge is narrow from experience in the arts but no transfer when the bridge is wide.

Citation: Winner & Cooper, 2000

Summary: The authors conducted a search for empirical studies published from 1950–1998 examining whether academic achievement improves when students are exposed to the arts. They also summarized a body of correlational research that examined whether there was a correlation between arts study and academic achievement.

Conclusions or Findings:

- A positive relationship exists between studying the arts and academic achievement
- There is insufficient evidence to suggest a causal relationship between arts study and verbal or math achievement.

Citation: Lee et al., 2014

Summary: The authors' comprehensive literature search revealed 47 quasi-experimental drama-based pedagogy (DBP) intervention studies conducted between 1985–2015.

Conclusions or Findings:

- Research designs were weak overall for making causal inferences
- Results suggest that DBP has a positive, significant effect on achievement outcomes in educational settings.
- The strongest effects were noted when the intervention (a) was led by a classroom teacher or researcher, (b) included more than five lessons, and (c) was integrated into English language arts or science curriculum compared to other domains.

Appendix D – Reference List

*** Indicates that the study was included in the systematic review of literature.**

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