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## Valuing the arts: a randomized controlled trial with school leaders

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### ABSTRACT

Prior studies demonstrating causal links between arts learning and educational outcomes have tended to rely on administrative data and closed-ended student survey responses. Consequently, these studies have limitations in terms of their examined outcomes. In this mixed-methods study, we conducted a focus group and interviews with school leaders, followed by a survey with 36 school principals who participated in a randomized controlled trial, to see how increases in school arts resources influenced their perceptions of arts education outcomes. By incorporating a qualitative component to our investigation, we provide a more comprehensive assessment of potential arts educational effects with key stakeholders who have significant influence on school instruction and climate. At baseline, principals were more likely to believe that arts education improves students' self-expression, school engagement, creativity, and school climate, and less likely to view the arts as a means for improving standardized test scores and empathy. After receiving increases in arts resources, principals are significantly more likely to view arts education as intrinsically valuable and more likely to perceive its positive impact on student empathy. These findings highlight underexplored and potentially overlooked benefits of arts education, suggesting that its value becomes more evident to school leaders as opportunities for arts learning expand.

### KEYWORDS

Arts education; randomized controlled trial; school leaders

### Introduction

State-issued standardized assessments have prompted school administrators to focus more on tested subjects (Dee et al., 2013; Grissom et al., 2017; Jacob, 2005; Murnane & Papay, 2010; West, 2007), thus reducing resources dedicated to arts education (Bassok et al., 2016; Farkas Duffett Research Group, 2012; Gadsden, 2008; Yee, 2014). Though school leaders tend to be supportive of arts education (Abril & Gault, 2006, 2008; Luehrman, 2002; Woodward, 2020), accountability pressures and the tradeoffs that come with resource scarcities have reduced arts funding (Farkas Duffett Research Group, 2012), limited instructional time (Rouse et al., 2013; von Zastrow & Janc, 2004), curbed the hiring of certified arts teachers (Gara et al., 2022), and narrowed educational objectives to those aligned with standardized assessments (Lee & Lee, 2020). Schools serving racially and economically marginalized communities that face heightened accountability pressures have been especially affected, resulting in steeper declines (Farkas Duffett Research

Group, 2012; Parsad & Spiegelman, 2012; Rabkin & Hedberg, 2011; von Zastrow & Janc, 2004).

Despite this landscape, there has been optimism in a potential restoration of arts learning opportunities. Arts learning is better aligned with broader educational outcomes that policymakers have increasingly incorporated in assessments of school performance, such as school climate indicators and social-emotional learning outcomes (Bowen & Kisida, 2023). Firmly establishing links between arts education and these outcomes may lead to the arts having a more prominent role in K-12 schooling. Several quantitative studies have shown links between arts learning and academic achievement, such as critical thinking (Bowen et al., 2014; Kisida et al., 2016), school engagement (Bowen & Kisida, 2023; Catterall, 1998; Thomas et al., 2015), school climate (Bowen & Kisida, 2024), tolerance (Erickson et al., 2024; Greene et al., 2014, 2018), empathy (Bowen & Kisida, 2023; Goldstein & Winner, 2012; Greene et al., 2014; Kisida et al., 2020), self-concept (Catterall, 1998; Wan et al., 2018; Winner et al., 2013), emotion regulation

(Goldstein et al., 2013; Winner et al., 2013), and spill-over effects in other subject areas (Bowen & Kisida, 2023; Catterall et al., 2012; DiMaggio, 1982; Guhn et al., 2020). However, many of these studies have been limited to correlational analyses that do not sufficiently address selection bias (Ludwig et al., 2017; Wan et al., 2018; Winner et al., 2013; Winner & Cooper, 2000) and are often confined to narrow outcomes due to their reliance on administrative and closed-response student survey data.

We address these limitations with a mixed-methods study conducted in the context of a large-scale randomized controlled trial (RCT), which included a focus group with five treatment group principals, semi-structured interviews with an additional five treatment group principals, and a survey issued to all 42 principals (21 from the treatment group; 21 from the control group), who were participating in the RCT evaluation of Houston's Arts Access Initiative (AAI), a multi-sector collaborative effort that substantially increased arts learning opportunities for elementary and middle school students in Houston's Independent School District (HISD). This combination of qualitative and quantitative data collected in the context of an RCT presents the opportunity for a more open, exploratory approach when identifying potential arts learning impacts. Using the qualitative data collected from our focus group and interviews, our first research question investigates what principals view as student effects from arts learning. The findings from these qualitative data then informed the construction of a survey where treatment and control group principals indicated the extent to which they agreed with statements about arts learning impacts. The data collected from these surveys within the context of an RCT allows us to address our second research question: whether increasing arts learning opportunities affects principals' views of their impacts.

From the focus group and interviews, we find that principals perceived a broader array of arts educational effects than typically examined in quantitative studies. In addition to corroborating empirical evidence that the arts can positively affect school climate, student engagement, attendance, and test scores, principals also perceive positive impacts on students' confidence and self-esteem, communication skills, creativity, and self-expression. When we examine variations in perceptions using our survey sample, we find that principals, at baseline, are more likely to strongly agree that the arts positively affect students' self-expression (94%), creativity (88%), school engagement (88%), and school climate (88%), than standardized test scores (50%) and empathy (50%). After

participating in the Arts Access Initiative, treatment group principals were 28 percentage points more likely to contend that arts learning has intrinsic value and 30 percentage points more likely to recognize that arts learning increases student empathy.

These findings contribute to a growing body of research identifying and demonstrating arts educational benefits. Principals' views that arts learning improves student engagement and school climate corroborate large-scale experimental and quasi-experimental studies (e.g., Bowen & Kisida, 2023, 2024). Positive perceptions regarding impacts on creativity and self-expression are supported by theoretical contentions and empirical findings from smaller-scale laboratory studies (American Academy of Arts & Sciences, 2021; Hetland et al., 2013; Winner et al., 2013) but have yet to be investigated in studies that further investigate the generalizability and internal validity of these findings. Moreover, our findings that substantial increases in arts learning opportunities generate more positive perceptions about the intrinsic value of the arts and its role in building student empathy suggest that school leaders gain greater appreciation and recognition of arts educational benefits with firsthand experience.

## **Background**

### **Policy context**

In addition to being intrinsically valuable, arts learning theoretically promotes a broad array of valued educational outcomes (American Academy of Arts & Sciences, 2021), including empathy (Dewey, 1919; Eisner, 1992; Konrath & Kisida, 2021; Tay et al., 2018), acceptance of others (Gadsden, 2008; Konrath & Kisida, 2021), social and emotional development (Deasy, 2002; Farrington et al., 2019), self-expression (Eisner, 1992; Gadsden, 2008; Halverson, 2021), creativity (Deasy, 2002; Eisner, 1992; Halverson, 2021), and school engagement (Deasy, 2002). However, states rarely include such educational outcomes in their school accountability systems (Education Commission of the States, 2022; Kisida et al., 2017), and rigorous empirical investigations of arts education are uncommon (Elpus, 2013; Winner et al., 2013), thus posing challenges for assessing and making the case for the value of K-12 arts education.

The status of the arts has been largely dependent on the strength and composition of state accountability systems. Since the late twentieth century, state accountability systems have mainly focused on students' math and reading standardized test scores (Figlio & Loeb, 2011; Hanushek & Raymond, 2005;

Loeb & Byun, 2019). These systems have rarely included outcomes tied to explicit arts learning objectives (Elpus, 2013; Kisida et al., 2017; Ludwig et al., 2017; Wan et al., 2018). Consequently, there have been declines in arts education, especially for schools disproportionately serving students from racially and economically marginalized communities (Farkas Duffett Research Group, 2012; Gara et al., 2022; Parsad & Spiegelman, 2012; Rabkin & Hedberg, 2011).

The reauthorization of the Elementary and Secondary Education Act in 2015 replaced No Child Left Behind (NCLB) with the Every Student Succeeds Act (ESSA). This shift has provided the potential for improving the state of arts education. ESSA returned substantial autonomy to local jurisdictions and requires states to broaden measures of school effectiveness (Batel, 2017). The Department of Education required all states to complete ESSA plans, including indicators of their new accountability systems, by the 2017–2018 school year (Batel, 2017). A review of these plans indicated that ESSA-induced accountability metrics are potentially better aligned with arts learning. Twenty-eight states submitted ESSA plans that hold schools accountable for providing students with a well-rounded education, which includes arts education. Six states decided to explicitly hold schools accountable for students' arts course participation in their ESSA plans (Denhalter, 2020). States also added accountability measures that were better aligned with arts learning objectives; 37 states included attendance as an accountability measure; and 20 states included assessments of school climate and/or social and emotional learning (Denhalter, 2020). This shift aligns with a growing body of research showing the impact of these broader indicators on long-term student outcomes, such as high school completion and college attendance (Jackson, 2018; Jackson et al., 2020; Kraft, 2019; Soland et al., 2013).

## Review of literature and study context

### *Arts learning impacts on educational outcomes*

The arts provide powerful educational opportunities for students to reflect on their own experiences and cultures as well as those of others, thus promoting social and emotional learning and development (Dewey, 1919; Eisner, 1992; Farrington et al., 2019; Nagaoka et al., 2015). However, there is limited empirical research that has rigorously investigated the cause-and-effect relationships between arts learning and educational outcomes (Ludwig et al., 2017; Wan et al., 2018; Winner et al., 2013). Notable exceptions

include an RCT investigation of Houston's AAI, where researchers found that increasing arts education opportunities increased students' compassion for others, school engagement, and standardized writing test scores (Bowen & Kisida, 2023); an earlier set of RCT studies found that student visits to the Crystal Bridges Museum of American Art positively affected students' critical thinking (Bowen et al., 2014; Kisida et al., 2016), desire to further engage in the arts (e.g., return to the museum for a subsequent visit), tolerance, and empathy (Greene et al., 2014).

Correlational, quasi-experimental, and smaller scale RCT studies have also found evidence suggesting positive effects from arts education. Such studies have found that arts learning opportunities are positively related to students' attendance (Catterall, 1998), social climate (Bowen & Kisida, 2024; Eerola & Eerola, 2014; Spychiger et al., 1995), emotion regulation (Goldstein et al., 2013), self-control (Alemán et al., 2017; Koshland et al., 2004), classroom behavior (Alemán et al., 2017; Koshland et al., 2004; Lacoé et al., 2020; Lobo & Winsler, 2006), social cognitive skills (Goldstein & Winner, 2012; Lobo & Winsler, 2006), and standardized test scores (Catterall et al., 2012).

### *Principals' perceptions of arts education*

School principals face remarkable challenges, yet have some autonomy when setting educational goals and managing school resources (Abril & Gault, 2008; Grissom et al., 2021; Lee & Lee, 2020; Sinnema & Robinson, 2012). Consequently, principals can exert significant influence on the status of the arts in their schools (Luehrman, 2002; Woodward, 2020). This influence is especially true in school systems, such as HISD, that have allowed principals greater discretion in school operations (Binkovitz, 2018; Fitzpatrick, 2012; Gunnarsson et al., 2009).

Prior studies indicate that principals are generally supportive of arts education (Abril & Gault, 2008; Fitzpatrick, 2011; Illinois Creates: The Illinois Arts Education Initiative, 2005; Luehrman, 2002). When asked about their perceived benefits of arts education, principals have cited academic benefits, social and emotional development, student engagement, family and community engagement, and career exploration and opportunities (Woodward, 2020). In a survey of 751 principals in Illinois, 94% of principals agreed that "the arts are an essential part of a quality education," and 87% agreed that "students who study the arts have greater success in other academic subjects" (Illinois Creates: The Illinois Arts Education Initiative, 2005).

Despite their support, schools throughout the United States have cut arts educational time and resources, with principals citing accountability pressures as a driving force (Abril & Gault, 2006; von Zastrow & Janc, 2004). In a survey of principals who were serving schools in Illinois, Maryland, New Mexico, and New York, von Zastrow and Janc (2004) found that 25% of principals reported declines in arts instructional time (relative to pre-NCLB), and 33% anticipated future decreases. Principals who were serving schools where the majority of students were African American and/or Hispanic were more likely to report such declines; 36% reported a decrease in instructional decline, and 42% anticipated future decreases (von Zastrow & Janc, 2004). Further unpacking these trends with a national survey of school principals, Lee and Lee (2020) found that NCLB accountability policies have affected these leaders' educational goals, reflected in decreased prioritization of students' "personal growth" in favor of "academic excellence."

The studies we identified that have investigated the relationship between school accountability and arts learning resources have been confined to analyses focused on the onset and immediate aftermath of NCLB. ESSA and COVID-19 have precipitated shifts in school leaders' educational priorities (Heys, 2025; Rochester & Sanders, 2023; Weddle et al., 2022), yet whether, and the extent to which, these policy shifts have translated into reallocations of arts instructional time and resources remain unclear (American Academy of Arts & Sciences, 2021). ESSA has shifted from requirements that yielded more robust data on educational inputs and outcomes employing common measures (U.S. Chamber of Commerce Foundation, 2023). This shift has potentially inhibited large-scale longitudinal research on this subject, such as investigations of nationwide allocations of arts instructional time post-NCLB.

### ***The Arts Access Initiative***

Houston's AAI launched as a multi-sector collaborative effort that included HISD, a broad set of more than 30 cultural institutions and arts education organizations, local philanthropies, representatives from the mayor's office, researchers, and a "backbone" organization that facilitated this collaborative effort. Such partnerships have become a common strategy for addressing deficiencies in arts education (Bowen & Kisida, 2023; Shaw & Bernard, 2025). The National Center for Education Statistics (2009–2010) survey of school arts resources and opportunities found that

42% of public PK-12 schools partner or collaborate with cultural or community organizations, 31% with individual artists, 29% with museums, and 26% with performing arts centers (Parsad & Spiegelman, 2012). Examples of these coordinated efforts can be found in many large school urban districts, including Boston, Chicago, Dallas, Houston, Los Angeles, New Orleans, and Seattle (Bowen & Kisida, 2017; Gibson, 2016; Perille, 2016).

The AAI's focus was increasing arts access for students throughout the community with an emphasis on equity (Shaw & Bernard, 2025). The AAI coalition constructed a campus-level inventory revealing that 29% of HISD's K-8 campuses had no full-time arts specialist; 39% had either one or no community arts partners and 30% lacked any form of arts programming taking place outside of regular school hours. These findings motivated stakeholders to recruit elementary and middle school campuses with the lowest levels of arts resources to participate. The decision to participate was voluntary, and principals had to commit to the mission of the Initiative, engage in strategic arts planning with the AAI director, designate a campus-level arts liaison to coordinate AAI-related efforts, participate in arts-integration professional development, and attend peer-network mentoring sessions. It is worth noting that the initial AAI strategy was to primarily expand arts access through community partnerships and exposure-based opportunities, rather than through the funding of sequential, standards-based instruction. Participating schools were required to commit a match between \$1 to \$10 per student for AAI funding, dedicated to providing arts educational experiences through partnerships with arts organizations that provided teaching-artist residencies, in-school professional artist performances, field trips, and before- and after-school programs.

The first two years of the AAI evaluation were implemented under a gradual rollout strategy, with seven schools participating in the first year and fourteen additional schools in the second year. Demand for participation in its first two years exceeded supply. Sixty schools applied to participate in the AAI during this rollout phase; 32 schools in the first year, and an additional 28 schools in the second year. After consulting with our research team, AAI stakeholders agreed to randomly assign participation among 42 schools in the first two years to determine which 21 schools would participate in the Initiative's first two years, while the other 21 schools would serve as the control group and have their participation deferred.

The AAI director and staff worked with the randomly selected treatment group principals to

understand their goals for the upcoming year and to help guide arts programming that would support their educational objectives. As part of the program selection process, the director and staff encouraged principals to budget for a diversity of programs such that all major arts disciplines were included: dance, music, theater, and visual arts. A private local philanthropic institution provided a one-to-one dollar match for each school's financial commitment. Including matched funds, AAI schools had an average annual budget of \$14.67 per student to facilitate and enhance partnerships with arts organizations and institutions. The AAI director and staff assisted principals with determining how best to allocate funds, but final decisions

remained with the principals. As a result, AAI implementation varied substantially across schools. See [Table 1](#) for a complete list of partnering arts organizations by type and modality.

## Data and methods

We employed an exploratory sequential mixed methods design with an initial qualitative phase of data collection and analysis, followed by a quantitative phase. The purpose of this design was to first explore arts educational impacts from the perspectives of school leaders, and then use those findings to develop a survey instrument that would be administered to

**Table 1.** Participating arts organizations, disciplines, and modalities.

Arts organization	Discipline(s)	In-school residency	Work-shops	On-campus performance	Off-campus performance	Field trips	After-school programs
Alley Theater	Theater	X		X			
American Festival for the Arts	Music	X					X
Aperio, Music of the Americas	Music	X			X		
Apollo Chamber Players	Music			X			
Ars Lyrica	Music		X	X	X		
Art League Houston	Visual Arts	X					
Arte Publico Press	Literary Arts		X				
Brave Little Company	Theater	X	X	X			
Brazilian Arts Foundation	Dance, Music		X	X			
Break Free Hip Hop School	Dance, Music		X			X	
City ArtWorks	Visual Arts						X
Contemporary Arts Museum Houston	Visual Arts					X	
Da Camera of Houston	Music	X	X	X		X	
Dance of Asian America	Dance		X	X			
Ensemble Theater	Theater	X		X		X	
Express Children's Theater	Theater	X		X		X	X
Fly Dance Company	Dance, Music	X	X	X			
FotoFest	Visual Arts	X				X	X
Hobby Center for the Performing Arts	Theater, Dance		X			X	
Houston Aztec Dance	Dance, Music	X		X			
Houston Ballet	Dance	X	X				
Houston Center for Photography	Visual Arts	X					X
Houston Chamber Choir	Music		X	X			
Houston Grand Opera	Music			X			
Houston Symphony	Music		X	X	X	X	
Impande Ye Africa	Dance, Music			X			
Interactive Theater	Theater			X			
Independent teaching artists	Multi-Disciplinary	X	X	X			X
JAWAD & Joseph	Music		X				
Marionette Playhouse	Theater	X	X	X			
Main Street Theater	Theater	X	X	X	X	X	X
MECA	Multi-Disciplinary	X					X
Mercury Chamber Orchestra	Music			X			
Met Dance	Dance		X				
Mixteco Ballet Folklorico	Dance		X	X			
Musiqqa	Music	X	X		X	X	
Museum of Fine Arts Houston	Visual Arts					X	
Nameless Sound	Music		X				
Open Dance Project	Dance	X	X	X			
Prelude Music Foundation	Music	X					
Psophonia	Dance	X		X			
Puppet Pizzazz	Theater	X	X	X			
River Oaks Chamber Orchestra	Music				X		
Society for the Performing Arts	Music, Dance, Literary Arts	X			X		
Texan-French Alliance for the Arts	Multi-Disciplinary	X					
Theater Under the Stars	Theater	X				X	X
Tom's Fun Band	Music			X			
Writers in the Schools	Literary Arts	X					
Young Audiences Houston	Multi-Disciplinary	X	X	X		X	X

all principals participating in the AAI RCT. This allowed us to more thoroughly investigate whether increases in arts resources impacted initial perceptions. This sequential approach was selected for two strategic reasons. First, it allowed us to identify perceived outcomes that might not be reflected in prior literature. Second, while in-depth qualitative work with the control group was not feasible due to the burden it places on administrators not receiving the intervention, the subsequent survey allowed us to efficiently capture the perspectives of the full sample. This survey enabled the statistical comparison necessary to satisfy our second research question regarding the causal impact of the AAI on principals' perspectives.

Our research team first conducted a semi-structured 90-minute, in-person focus group with a purposive sample of five principals from the treatment group in the latter half of the second year of AAI's implementation. Informed by themes identified from the focus group, we then conducted semi-structured 30-minute phone interviews with five additional randomly selected AAI principals to obtain deeper insights about their participation. The focus group and interviews were designed to investigate principals' perceptions of arts educational benefits using the following prompts:

- What made you want to bring this program to your students?
- Why is arts education important to you to include in your curriculum?
- What do you think should be the role of the arts in PK-12 education?
- What learning outcomes did you hope the AAI would generate or improve among your students?
- In what ways do you feel that the program has affected students?
- In what ways does the program meet the needs of your diverse student populations?

We audio recorded and transcribed the focus group and one-on-one interviews. Qualitative themes were used to directly inform the item construction for the quantitative survey. We used a funneled approach to data collection, beginning with a focus group to generate a broad landscape of potential outcomes, followed by individual interviews to refine and saturate emerging themes. We then inductively coded our qualitative data by identifying all instances where principals explicitly referenced or alluded to arts educational impacts. Next, we administered an online survey with all treatment and control group principals who were participating in the RCT. This survey contained

a series of Likert-scaled items where we asked each principal to assess the extent to which they agreed (strongly agreed, agreed, disagreed, or strongly disagreed) with the different potential arts educational impacts identified from the focus group and interviews. We also included two additional outcomes in our survey that are often discussed in the arts educational literature that the principals in our focus group and interviews did not mention: tolerance and parent and community school engagement (American Academy of Arts & Sciences, 2021; Bowen & Kisida, 2024; Konrath & Kisida, 2021; Tay et al., 2018).

### **Sample**

The sample was comprised of 42 principals who were participating in the AAI RCT study. These principals had an average of 21 years of experience working in PK-12 education. Eighty-one percent of the principals were female; 43% identified as African American, 40% as Hispanic, and 14% as white. Their schools enrolled an average of 619 students. Eighty-seven percent of their students were eligible for free- or reduced-price lunch. In terms of their schools' student racial/ethnic demographics, 31% of students identified as African American, 62% Hispanic, and 3% white. Seven percent of their students were receiving special education program services, and 35% were participating in English Language Learner programming. Before AAI's implementation, 30% of these students were identified as "proficient" in terms of meeting state standards in reading, and 31% were proficient in math. Before the AAI, these schools had, on average, the full-time equivalence of one arts teacher and 2.8 partnerships with arts organizations and institutions. It is worth noting that the AAI treatment and control schools were statistically similar in terms of their observed demographics (Table 2).

### **Data collection**

Due to substantial variation in principal and student demographics across AAI schools, we selected a purposeful sample of focus group participants to obtain a broad array of perspectives and experiences that may have coincided with variations in principal and student demographics. Due to time and resource constraints, we limited participation to principals in the treatment group. We obtained commitments from the first five recruited AAI principals, and they all attended our 90-minute focus group session. We then randomly selected our semi-structured phone interview participants from the remaining pool of AAI treatment principals. We recruited and obtained commitments from

**Table 2.** Principal and student descriptive statistics by treatment status.

Variable	Treatment	Control	Difference
<b>Principals</b>			
Years of experience	21.57 (2.543)	20.30 (1.863)	1.271 (3.104)
Female	0.762 (0.095)	0.857 (0.078)	-0.095 (0.123)
Race/ethnicity			
African American	0.524 (0.112)	0.333 (0.105)	0.190 (0.154)
Hispanic	0.333 (0.105)	0.476 (0.112)	-0.143 (0.154)
White	0.095 (0.066)	0.190 (0.088)	-0.095 (0.110)
<b>School</b>			
Student enrollment	644.6 (50.87)	594.0 (57.71)	50.52 (76.93)
Grade level	3.117 (0.354)	3.169 (0.349)	-0.052 (0.497)
FRL status			
Not FRL	0.124 (0.039)	0.137 (0.034)	-0.013 (0.051)
FRL eligible (non-poverty)	0.327 (0.026)	0.327 (0.028)	0.001 (0.038)
FRL eligible (poverty)	0.548 (0.037)	0.536 (0.035)	0.012 (0.051)
Race/ethnicity			
African American	0.314 (0.072)	0.309 (0.072)	0.005 (0.102)
Hispanic	0.623 (0.073)	0.624 (0.071)	-0.000 (0.624)
White	0.025 (0.017)	0.043 (0.020)	-0.017 (0.027)
Special education	0.071 (0.006)	0.078 (0.006)	-0.007 (0.008)
English language learner (ELL)	0.364 (0.046)	0.339 (0.044)	0.025 (0.064)
Percent proficient reading	0.334 (0.041)	0.270 (0.025)	0.064 (0.048)
Percent proficient math	0.326 (0.043)	0.287 (0.029)	0.039 (0.052)
Baseline school arts partnerships	2.762 (0.497)	2.800 (0.473)	-0.038 (0.686)
Baseline arts teacher FTEs	1.143 (0.221)	0.857 (0.159)	0.286 (0.272)
School <i>N</i>	21	21	42

Notes: Standard errors in parentheses; none of these differences are statistically significant at  $p < 0.05$ .

the first five principals selected for these interviews. Each of these phone interviews lasted approximately 30 minutes.

After reviewing the focus group and interview transcript data, we created and administered an online survey that was distributed to all 42 principals whose schools were participating in the AAI study. Forty principals (95%) responded to at least one item on the survey, and thirty-six principals (86%) completed the entire survey. Four of the six principals with incomplete surveys did not respond to the items about perceived arts educational benefits and are therefore not included in our analyses. Twenty of the 21 principals (95%) from both the treatment and control group schools completed at least part of the survey. Twenty principals (95%) from the treatment group and sixteen (76%) from the control group provided survey responses on our outcomes of interest, a noteworthy but not statistically significant difference in completion rate.

### Analysis

Three members of the research team independently analyzed the focus group and interview data by

descriptively coding all instances of principal-identified arts educational impacts. These open-ended qualitative data provided us with the opportunity to identify rich, nuanced, and potentially novel insights about arts educational impacts (Collins et al., 2006; Miles & Huberman, 1994; Rossman & Wilson, 1985; Sieber, 1973). While the qualitative data were essential for identifying principals' perceptions of arts impacts, the quantitative data take primacy in our final analysis because it allows us to determine and compare principals' assessments of a broader array of arts educational impacts, including ones that they may not have independently considered, and leverage the RCT design to assess cause-and-effect relationships. The primary objective of this study was not only to catalog perceptions, but to determine how generalizable those perceptions were to the rest of our sample and determine if an increase in arts resources caused a shift in those perceptions.

We assessed variations in the control group's perceptions of arts educational impacts based on the percentage of principals who "strongly agreed" with each survey statement. We restricted this initial analysis to the control group out of concern that the AAI treatment may have influenced those principals' perspectives. We initially conducted multinomial logistic regressions to assess differences in perceptions. However, there was only one principal in our sample who disagreed with any of the statements. This one principal disagreed with two of the prompts: the arts positively affecting students' tolerance and communication. Therefore, we coded all responses as a dichotomous variable, indicating whether principals "strongly agreed" or not with each assessed outcome. This analytical strategy did not affect our qualitative interpretations but simplifies the reporting and interpretations of our findings.

We then leveraged the random assignment of schools' arts learning opportunities provided through the AAI to investigate whether they impacted principals' perceptions of arts educational effects. We estimated these effects with logistic regressions, where the dependent variable was a dichotomous indicator of whether the principal strongly agreed with each statement about arts educational impacts and the independent variable was an indicator for whether the principal served a school that was randomly assigned to the AAI. We used robust standard errors in these analyses to account for non-constant variance.

### Results

The focus group and interview participants identified ten arts educational impacts: empathy, social-emotional learning, confidence and self-esteem, communication

skills, test scores, school climate, students' school engagement, creativity, attendance, and self-expression. Multiple principals also made statements about arts learning opportunities being intrinsically valuable. Each of the identified impacts or benefits, along with a supporting quote from our focus group or interview transcripts, is provided in [Table 3](#). Large-scale studies that have investigated causal relationships between arts learning and educational outcomes have found evidence to support six of these identified effects: empathy, social-emotional learning, standardized test scores, school climate, student engagement, and attendance (Bowen & Kisida, 2023, 2024; Greene et al., 2014). The other four identified impacts have yet to be investigated in this manner.

Principals' qualitative responses also provided evidence of potential explanatory mechanisms for these perceived benefits. Principals frequently described the arts as the primary driver of a shift in school culture from "drudgery" to "joy." One focus group principal described the pre-AAI environment as suffering from a "lack of energy, lack of joy, lack of enthusiasm," noting that after AAI implementation, "what I notice now, there's artwork all over the place. There's energy." Principals viewed this shift as a counterbalance to high stakes testing pressures, with another focus group principal noting a preference for "well-rounded students that are happy" over "drilling on the STAAR [the state's standardized assessment]." An interviewed principal echoed this sentiment, arguing that "when

we only focus on academics, we really miss out on kids being able to kind of build the full child." This cultural shift may have functioned as a practical mechanism for engagement by increasing student enthusiasm for coming to school. As another focus group principal noted, "You really have to have something in the school to interest the children to make them want to come to school. You have to have interesting things.... Through Arts Access, I've provided dance instruction, and it has enlightened our children. They're so excited about coming to school."

Regarding individual student growth, principals perceived the arts as a unique domain for "alternative competence" that may not otherwise be tapped into without the arts. As one principal noted, the arts allow students to discover the "greatness in them" that they "didn't know existed." This dynamic often reshaped teachers' perceptions of students' capabilities; one focus group principal described how faculty were moved by witnessing "dyslexic children that cannot read very well" becoming "the stars of theatrical performances." Finally, principals suggested the arts may support academic transfer by fostering cognitive endurance and counteracting the "fast decision making" of modern technology. One focus group principal observed that "with art, you have to stop and you have to think," while an interviewed principal noted that "the skills and the discipline learned through the arts translate into academic success through promoting focus, commitment, and endurance."

**Table 3.** Principal quotes on arts educational impacts.

Perceived benefit	Sample quote
Intrinsic value	"Art is a part of life, it's all around us, it's what enriches life. It's one of the purposes. I feel that it's one of our purposes for living that's part of an educated, progressive civilization."
Empathy	"Yeah, I was going to comment on that play. It was just incredible because you're seeing that they're appreciating [neurodiversity], they know the importance, but also you see it through the eyes of an autistic kid."
Social-emotional learning (SEL)	"I've seen them more engaged, more focused, more willing to collaborate with each other. I mean, at this middle school level, sometimes they want to do their own thing, okay? But I've seen them more willing to work in groups, work in teams and so it's building those type of skills."
Confidence and self-esteem	"When the kids actually completed their project, they were just mesmerized as to say, 'Wow, I actually did this. I have the ability to do something of this caliber.' It just blew me away that the kids said, 'Wow, I had no idea I had this gift in me.' It's letting my kids see that there's something great inside of them, that they have greatness in them."
Communication skills	"We have a lot of students that are limited English proficient and this has kind of broadened their vocabulary"
Standardized test scores	"My scores are going up across the grade level, across the campus. They're learning to read. We're having summer school this year. I'm trying to find kids to come to summer school because they all met their promotion standards."
School climate	"It was [previously] all about academics, and it was really watered-down academics, if you will. It just was like, lack of energy, lack of joy, lack of enthusiasm. And what I notice now there's artwork all over the place. There's energy. There's kids that are excited, and we're doing stuff that I never thought could be possible."
School engagement	"You really have to have something in the school to interest the children to make them want to come to school. You have to have interesting things. When the principal wakes up and says I don't want to go, I'm not going, and you talk to yourself about 30 or 40 minutes to get up, put the leg out the bed, push yourself on out, and let's get to school. It's just one of the greatest things, I think that could really help a school."
Creativity	"For a couple different reasons, [when engaged in art] you're developing a different side of your brain than the academics, which will in turn enhance your capacity, I mean creative thinking, problem solving, definitely, and collaboration."
Student attendance	"For us on our campus, I think it helped with the increase for attendance as well."
Self-expression	"I want that opportunity for our students, for those who are talented, and for those who just want to find a way to maybe find expression in their lives."

Turning to our quantitative analyses using our survey data, we find that principals are generally positive about arts educational impacts, but there were substantial variations in their perceptions. The percentage of baseline agreement with arts learning outcomes, based on control group principals' responses, ranged from as high as 94% to as low as 50%. Principals were significantly more positive in their perceived impacts on student self-expression (94%), school climate (88%), school engagement (88%), and creativity (88%), relative to tolerance (63%), empathy (50%), and standardized test scores (50%) (McNemar test,  $p$ -value < 0.10). Relative to perceived impacts on self-expression, school climate, school engagement, and creativity, principals were also significantly less

likely to agree that the arts “provide unique learning opportunities valuable in themselves” (63%). The percentage of principals who strongly agreed with each assessed outcome is displayed in Figure 1.

All principals tended to be generally positive about arts educational impacts and benefits at baseline, yet increases in their schools' arts learning opportunities improved perceptions. Principals who were randomly assigned to participate in the AAI were more likely to strongly agree that the arts positively affect assessed outcomes, with differences as large as 30 percentage points (Figure 2). Treatment group principal perceptions were statistically higher than control group principals for two outcomes: the arts provide unique learning opportunities that are valuable in themselves,

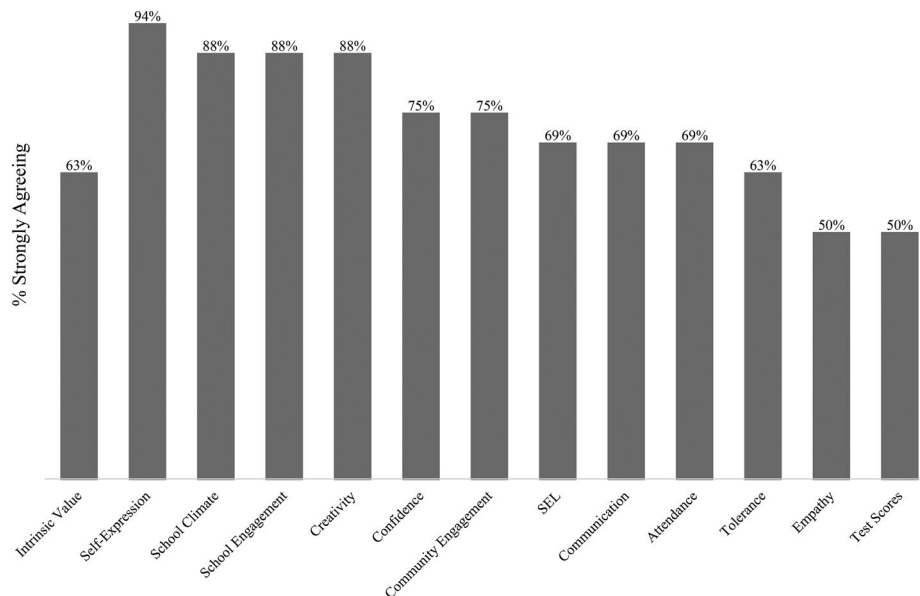


Figure 1. Baseline principal perceptions of arts educational benefits.

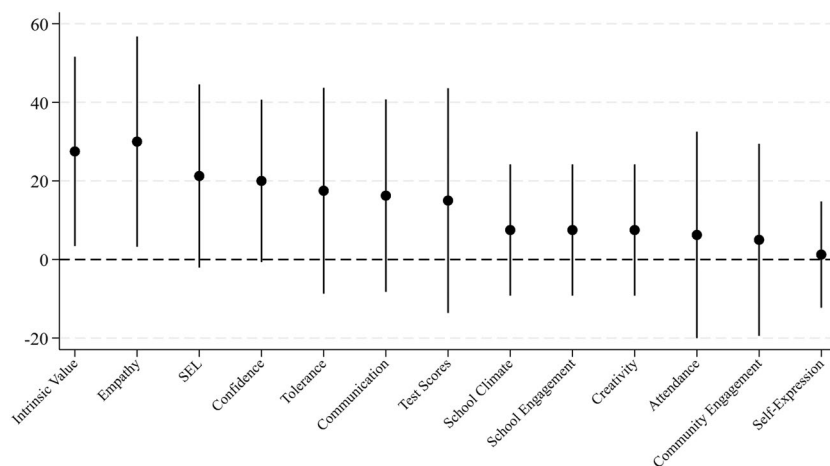


Figure 2. Treatment effects on principals' perceptions of arts educational benefits.

Note: Markers and confidence intervals (90%) reflect the percentage point difference between treatment and control group principals who strongly agreed with the arts affecting the identified outcome.

**Table 4.** Differences in perceptions of arts educational impacts.

Outcome	Treatment	Control	Difference
Arts have intrinsic value	0.90 (0.07)	0.63 (0.13)	0.28* (0.14)
Empathy	0.80 (0.09)	0.50 (0.13)	0.30* (0.16)
Social-emotional learning (SEL)	0.90 (0.07)	0.69 (0.12)	0.21 (0.14)
Confidence and self-esteem	0.95 (0.05)	0.75 (0.11)	0.20 (0.12)
Tolerance	0.80 (0.09)	0.63 (0.13)	0.18 (0.15)
Communication skills	0.85 (0.08)	0.69 (0.12)	0.16 (0.14)
Standardized test scores	0.65 (0.11)	0.50 (0.13)	0.15 (0.17)
School climate	0.95 (0.05)	0.88 (0.09)	0.08 (0.10)
Students' school engagement	0.95 (0.05)	0.88 (0.09)	0.08 (0.10)
Creativity	0.95 (0.05)	0.88 (0.09)	0.08 (0.10)
Student attendance	0.75 (0.10)	0.69 (0.12)	0.06 (0.15)
Parent and community school engagement	0.80 (0.09)	0.75 (0.11)	0.05 (0.14)
Student self-expression	0.95 (0.05)	0.94 (0.06)	0.01 (0.08)

Notes: \*Statistically significant (two-tailed) at  $p < 0.10$ ; robust standard errors in parentheses. Proportion reflects principals who indicated "strongly agree" in response to the statement that "Participation in the arts positively affects..."; for "Arts Have Intrinsic Value," principals were asked to rate the statement "The arts provide unique learning opportunities that are valuable in themselves." Differences were calculated using unrounded values; therefore, reported differences may not equal the arithmetic difference of the displayed percentages.

and the arts positively affect student empathy ( $p$ -value  $< 0.10$ ). All other differences are positive and, in many cases, substantial, but they do not achieve statistical significance; differences with robust standard errors are displayed in Table 4.

## Discussion and conclusion

School leaders face remarkable challenges when prioritizing educational goals. Test-based accountability pressures substantially increased in the U.S. around the turn of the twenty-first century and led to cuts and reallocations of arts educational resources (Gara et al., 2022; von Zastrow & Janc, 2004; Woodward, 2020; Woodworth et al., 2007). Consequently, public school principals prioritized "academics" at the expense of students' personal growth (Lee & Lee, 2020).

Recent policy developments may provide circumstances more conducive to improving the state of arts in schools. Changes in federal policy have enabled principals to increase arts learning opportunities (Bowen & Kisida, 2023), and recent RCT investigations have found arts learning to positively affect several outcomes that have become more commonly employed for school accountability purposes, such as student engagement, school climate, and social-emotional learning outcomes (Bowen & Kisida, 2023, 2024; Greene et al., 2014). However, these studies were limited regarding their investigations of narrow sets of educational outcomes and have likely not

fully captured the vast array of arts educational benefits. Moreover, these studies do not address critical questions regarding principals' perspectives of arts educational impacts, which may have significant influence over the role of the arts in schools.

Based on our mixed-method investigation with data from a focus group session, interviews, and surveys with principals who participated in Houston's AAI, we find that principals believe that the arts confer students a broad array of positive educational benefits and that increasing schools' arts learning opportunities improves these perceptions. The principals in our control group, whose schools had low levels of arts learning opportunities, were significantly more likely to perceive positive arts impacts on student self-expression, creativity, school engagement, and school climate, relative to that of standardized test scores and empathy. Baseline positive perceptions of arts learning impacts on student engagement and school climate corroborates recent, large-scale experimental and quasi-experimental studies (e.g., Bowen & Kisida, 2023, 2024).

Positive perceptions regarding impacts on self-expression and creativity are supported by theoretical contentions and findings from smaller-scale laboratory studies (Hetland et al., 2013; Hoffmann et al., 2021; Moga et al., 2000; Winner et al., 2013) but have not been investigated in larger-scale experimental studies. While these studies on self-expression and creativity generally find positive relationships, the findings from this study further motivate the need and likely benefit of conducting larger-scale experimental studies.

We also find that substantial increases in arts learning opportunities cause principals to develop more positive perceptions regarding the intrinsic value of arts education and its impact on student empathy. These findings suggest that the arts offer numerous educational benefits that manifest and gain greater appreciation with firsthand experience. It is worth noting that there also appear to be meaningful differences between treatment and control group principals' perceptions of arts learning impacts on social-emotional learning (21 percentage point difference), confidence and self-esteem (20 percentage point difference), tolerance (18 percentage point difference), and communication skills (16 percentage point difference). However, these differences failed to achieve conventional levels of statistical significance (with  $p$ -values ranging from 0.12 to 0.26). Given the magnitude of these differences, achieving statistical significance was likely hindered by sample size constraints.

This study is not without limitations. While our mixed-method approach allows us to identify and

assess variations in a broader array of arts educational effects than prior quantitative studies, we are limited in our reliance on principals' perceptions, which are less valid than student-level behavioral measures. Another limitation is that our study is confined to the AAI treatment and control schools, whose principals had to willingly commit to improving their schools' arts educational offerings. Treatment and control group principals were similar in that they all signed up to participate in the AAI, ensuring that our estimated effects are internally valid. However, principals who opted to participate could be different in ways that call into question the generalizability of our findings. Whether these effects would be comparable with other populations is difficult to determine. The enthusiasm and desire of AAI treatment and control group principals to secure additional arts education opportunities may be a critical prerequisite for obtaining positive outcomes. Conversely, the restriction of our sample to principals presumably predisposed toward valuing arts education may have induced ceiling effects that constrained post-treatment variability, thereby yielding effect estimates that represent a lower bound of the true causal impact on principals' valuations. This sample restriction was necessary for determining whether substantial increases in arts learning opportunities caused differences in principal perceptions. It is also important to contextualize these findings within the specific design of the AAI, which prioritized community partnerships and arts exposure rather than a more traditional model of sequential, standards-based instruction. While principals were asked about arts education in a generic manner, their experiences and subsequent shifts in perceptions may have been influenced by this specific partnership-based model. Arts learning encompasses a diverse array of disciplines and modalities that can differentially influence student outcomes (Holochwost et al., 2021), and in this study, we cannot disentangle whether the principals' valuations are attributable to "the arts" as a broad concept or specifically to the opportunities provided in the AAI.

These findings have important implications. They suggest that principals believe that the arts can have significant impacts on these broader educational outcomes. Moreover, after experiencing increases in their schools' arts education resources, principals' perceptions become more positive regarding the intrinsic value of arts education and their affect on student empathy. Bolstering principal buy-in for the intrinsic value of education carries implications for policy implementation and program sustainability. When school leaders conceptualize the arts as possessing

inherent value rather than peripheral to student learning, they may become stronger advocates for maintaining and expanding arts opportunities.

The juxtaposition of principals' strong endorsement of arts education against its persistent marginalization also highlights a critical misalignment between educational values and public policy. School leaders appear to consistently affirm the benefits of the arts (Abril & Gault, 2006, 2008; Luehrman, 2002; Woodward, 2020), but the structural incentives of high-stakes accountability facilitated a prioritization of tested subjects at the expense of the holistic experiences educators seem to value.

Federal policymakers have returned substantial authority to state jurisdictions, while also requiring states to measure broader indicators of school effectiveness. Moreover, recent developments suggest a growing refusal among stakeholders to accept cuts to valued educational experiences. The passage of Proposition 28 in California, a 2022 ballot measure that has mandated a dedicated funding stream for arts and music education, signals that parents, teachers, and the general public are willing to take more proactive approaches to ensure these opportunities exist (Bay, 2022; D'Souza, 2023). The success of Proposition 28, which passed with 64% of the vote, may serve as a forerunner for future policy, indicating that the unintended consequences of the accountability era are no longer acceptable to a public that, like the principals in this study, fundamentally believes the arts provide essential educational value.

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## Ethical approval

Ethical approval was obtained for all protocols for this study from the Texas A&M University institutional review board (#2016-0220) to confirm that this study meets national and international guidelines for research on humans.

## Disclosure statement

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