



## Beverly Taylor Sorenson Arts Learning Program: Report on Effective Practices and Barriers to Participation

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# Executive Summary

## Overview of Program and Research Study

The Beverley Taylor Sorenson Arts Learning Program (BTS Arts) provides arts-integrated instruction to elementary students across the state of Utah. The BTS Arts goal is to improve student outcomes, including in language arts, social studies, mathematics, and science (BTS Handbook, 2023). In September 2023, the University of Utah was awarded grant funding from the Utah State Board of Education to study the implementation practices, outcomes, and barriers to participation in BTS Arts. The research study was conducted by researchers from the Utah Education Policy Center (UEPC) in collaboration and coordination with scholars and staff from the College of Fine Arts (CFA), the Sorenson Impact Institute (SII) and the Utah State Board of Education. In addition, the study team collaborated with a Study Advisory Team, who provided guidance and feedback on each stage of the research including research design, preliminary findings, and the final report.

## Research Questions

Key goals of the research study were to answer three research questions related to effective practices among students attending LEAs that participate in BTS Arts and two research questions related to barriers to participation among LEAs who do not participate in BTS Arts.

Research Questions on Effective Practices
<ol style="list-style-type: none"><li>1. How does a school-wide or district-wide BTS Arts Learning program impact elementary students' learning of educational aspirations found in <u>Utah's Portrait of a Graduate</u>?</li><li>2. Which BTS Arts implementation models most effectively support student learning of the educational aspirations found in Utah's Portrait of a Graduate?</li><li>3. What instructional and collaborative planning strategies/methods are used to implement a school-wide or district-wide BTS Arts Learning program in participating LEAs? Which ones are yielding the most impact on student learning through arts integration?</li></ol>
Research Questions on Barriers to Participation
<ol style="list-style-type: none"><li>1. Why has your school/LEA chosen to not participate in the BTS Arts Learning program (e.g., lack of qualified personnel, part-time staffing model, education resources or supports, unaware or misconceptions of what BTS is)?</li><li>2. What would need to change for your school or LEA to choose to participate in the BTS Arts Learning Program (e.g., 80/20 match, part-time staffing)?</li></ol>



## Report Organization

The report is divided into five sections. In the first section, we provide an overview of the BTS Arts program and the context of the current study. In section two, we offer background for the current report by providing a brief review of the research and evaluation literature on arts integration programs such as BTS Arts. In the third section, we present findings from analyses examining three research questions related to effective practices. In the fourth section, we present findings from analyses examining two research questions related to barriers to participation. Finally, in the fifth section, we offer a summary of the findings and recommendations for ongoing program improvement.

## Key Findings

While detailed findings are presented in each report subsection, here we summarize the primary findings for the Effective Practices and Barriers to Participation research questions.

The level of implementation of BTS Arts integration, as measured by the Assurance Survey, was strong in some areas but showed room for improvement in others. Most schools reported that all students at the participating school had access to BTS Arts, but 38-51% of schools with BTS Arts reported that students had fewer than 30 minutes of BTS Arts instruction per week. Collaboration between BTS Arts educators and classroom teachers was stronger for beginning-of-year sharing of curriculum maps, but weaker for regular meetings or classroom teacher participation during arts instruction.

The only significant relationship observed between BTS Arts implementation and student outcomes was that for every year that a school participated in BTS Arts, the school's average score on math, reading, and science assessments increased between 0.023 and 0.027 standard deviations on the student-level assessment scale. This increase was statistically significant at  $p < .001$  but is modest in size.

The analysis of student attendance was frustrated by a state-wide surge in the rate of chronic absenteeism. The absence of significant relationships between specific implementation measures (e.g., classroom teacher participation in arts instruction) and student outcomes means that there are no clear answers to the research questions about the relative impact of various implementation models or methods. That is, none of the implementation measures showed better outcomes than others.

The BTS Barriers survey reveals that familiarity with the BTS Arts program was greater among district/LEA-level (e.g., superintendent) respondents than among principals. In addition, study participants from districts and schools not currently implementing BTS Arts cited resource and time constraints as barriers to their decision to participate. Specifically, the primary barriers to participation in the BTS Arts program were 1) an inability to offer BTS Arts educators full-time employment and availability of school funding and 2) time for classroom teachers to co-plan, co-teach lessons, or engage in professional development with BTS Arts educators.

## **Key Considerations**

The BTS Arts program continues to serve students statewide, as many Utah schools and LEAs have emerged as active participants in the program. The BTS Arts program has also uniquely forged partnerships between the Utah State Board of Education, LEAs, schools, universities, and advocates for arts in schools. To address the barriers cited to participation, we provide considerations to address the allocation of staff FTE, engagement of additional collaboration opportunities, and reconsideration of the model and flexibility for the model implementation requirements to create a supportive environment conducive to arts education and student success. Finally, considerations are provided for future research and evaluation studies and revisions to the existing BTS Arts Assurance Survey.

# 1 | Overview

## Program Overview

The Beverley Taylor Sorenson Arts Learning Program (BTS Arts) program, which was the namesake adopted by the Utah State Legislature in 2008 for this model of arts education, supports arts-integrated instruction for elementary students throughout Utah. In 2023, the program was offered in at least 409 elementary schools (K-6) and charters statewide<sup>1</sup>. The BTS Arts program has a long history of collaboration with the Utah State Board of Education (USBE), higher education institutions, Art Works for Kids, the Utah Division of Arts & Museums, Utah PTA, and other community organizations to provide children across the state with arts-rich educational opportunities. Currently, local education agencies (LEAs) (i.e., districts and charters) apply for BTS Arts funding annually. Awarded sites provide a 20% funding match to cover program activities and staffing. BTS Arts educators who participate in the program must be licensed secondary or elementary educators with an endorsement in a fine arts form. Collaborative planning between classroom teachers and BTS Arts educators and the implementation of integrated curriculum via side-by-side and collaborative teaching models are key components of the BTS Arts model.

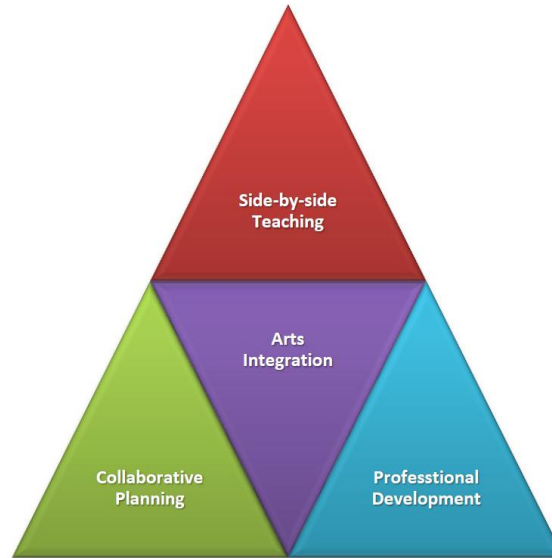
As depicted in Figure 1, the BTS Arts Learning Program was designed to support arts integration with the core curriculum via collaborative planning, side-by-side teaching and collaborative co-teaching, and professional development. *Collaborative Planning* is when classroom teachers and BTS Arts educators co-design lessons that integrate arts core standards and academic core subject standards for teaching content and developing skills. *Side-by-Side Teaching* and *Collaborative Co-Teaching* refers to when classroom teachers and BTS Arts educators conduct lessons together and leverage their individual and collective expertise during instruction to improve student engagement and mastery of content knowledge and skills. *Professional Development* occurs in collaboration with the program's *Professional Development Partners* (i.e., university and college partners), which provide BTS Arts educators and/or classroom teachers with coaching, instructional planning support, and resources to assist them with arts integration and instruction.<sup>2</sup>

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<sup>1</sup> The number 409 is based on the number of unique schools listed in the BTS Arts Assurance Surveys submitted for 2023. The actual number of schools involved in the program may be greater. BTS Arts personnel report that 458 schools were served in 2024.

<sup>2</sup> See the Beverley Taylor Sorenson Arts Learning Handbook, 2022-2023, for additional information about the current BTS Arts program. Additional information about the implementation of the program can be found in the UEPC evaluation reports. Evaluation reports and executive summaries for the BTS Arts program from 2008-2015 can be found at [uepc.utah.edu](http://uepc.utah.edu).

**Figure 1. Components of the BTS Arts Learning Program**



Source: BTSALP Year 1 Implementation Evaluation Report (Utah Education Policy Center, 2008-2009).

## **Study Purpose**

In August 2023, the USBE awarded a grant to a collaborative of the University of Utah College of Fine Arts (CFA), the Utah Education Policy Center (UEPC), and the Sorenson Impact Institute (SII) to conduct a research study. The purpose of this study, which was conducted by researchers from the UEPC in collaboration and coordination with scholars and staff from the CFA, SII, and USBE, was two-fold: (1) to research the efficacy of the program at participating schools throughout the state and (2) to learn more about what barriers led other schools not to participate in this program. Drawing upon their prior interactions and experiences with the BTS Arts program, the research partners for this study brought depth and breadth of understanding of the statewide implementation of the BTS Arts program, previous BTS Arts program evaluation experience, methodological expertise, and strong relationships with myriad educational and research partners to support this research effort.

## 2 | Background Research

### A Brief History of Arts Education

The United States has a long-standing history of arts education in public schools (Burnaford et al., 2007). For instance, drawing was introduced as part of the common school curriculum in Massachusetts in the 1870s (Whitford, 1923). The introduction of the arts into the public-school curriculum continued with a boost in attention in the 1960s with support from the Kennedy and Johnson administrations and the Rockefeller Brothers Fund, culminating in the establishment of the National Endowment for the Arts (NEA) (Burnaford et al., 2007; Remer, 2003).

Throughout its history, debates about the role that arts education should play in public schools has remained (Remer, 2003). These debates took on new significance with the publication of *A Nation at Risk* in 1983, which called for comprehensive education reforms to address declining student academic performance and competitiveness. Many advocates of arts education view this report as a turning point away from arts education, particularly as it launched what is now a 40-year focus on core subject matter performance and accountability. The passage of the *No Child Left Behind* (NCLB) Act of 2001 further increased the accountability of schools for student outcomes, including expectations in every state for the adoption and use of high-stakes testing in the “core academic subjects” of reading, language arts, mathematics, and science (Dee et al, 2013; Robinson, 2007). Since the passage of NCLB, there have been notable reports of reductions in instructional time (Government Accountability Office, 2009; Lajevic, 2013; Spohn, 2008; Zakaras & Lowell, 2008) and funding (Spohn, 2008; Zakaras & Lowell, 2008) for arts education in the United States as subject areas that are the focus of standardized tests are prioritized over the arts (Amrein-Beardsley, 2009; Lajevic, 2013; Murillo & Flores, 2002; Purnell, 2004; Spohn, 2008; Zakaras & Lowell, 2008). The decreased emphasis on and access to arts education has disproportionately impacted students in high-poverty schools (Melnick et al., 2011; Mishook & Kornhaber, 2006; Zakaras & Lowell, 2008), especially in the wake of the COVID-19 pandemic (Sabol, 2022).

In response to these changes, arts education advocates have argued that the arts are facing a “grave threat” (American Academy of Arts and Sciences’ Commission on the Arts, 2021, p. v). Advocates continue to assert that the arts are essential for a well-rounded education that nurtures the whole child (West, 2000), and that arts education is uniquely positioned to facilitate the development of 21<sup>st</sup> century skills, including creativity, critical thinking, problem solving, communication, and collaboration (Corbisiero-Drakos et al., 2021). Advocates further argue that arts education can play an important role in pandemic recovery efforts, including by improving school climate, promoting student engagement, encouraging students to explore careers and associated skills, and supporting civic and community engagement (American Academy of Arts and Sciences’ Commission on the Arts, 2021).

### An Introduction to Integrated Arts Education

Over the past 20 years, “Arts Integration” has emerged as an educational strategy that seeks to

leverage concepts and strategies from visual and performing arts to promote the development of targeted knowledge and skills in other fields of study, including language arts, history, and mathematics (Ludwig, Boyle, & Lindsay, 2017). This type of integrated approach to curriculum and instruction is not new. It has roots in the “Project Method” introduced by John Dewey and his associate William Heard Kilpatrick in the early 1900s. This approach is also well-aligned with the seminal report from the 2007 National Council of Teachers of English (NCTE), *A Correlated Curriculum*, which outlined the value of ensuring that different school subjects are taught in a way that emphasizes their interconnections (Burnaford et al., 2007). It is upon these foundations that the integration of arts with other subjects has emerged as a school reform and curriculum strategy that is designed to maintain students’ access to arts education amidst the multitude of competing priorities in the contemporary educational landscape (Belbase et al., 2022; Lackey, 2016). Similar to the goals of arts education more broadly, arts integration strategies aim to increase student engagement (Arts Education Partnership, 2007; Hardiman et al., 2009), enhance collaboration (Arts Education Partnership, 2007; Ruppert, 2006), create more positive school environments (Arts Education Partnership, 2013; 2007; 1999; Ruppert, 2006), foster social/emotional learning (Arts Education Partnership, 2013), and increase academic achievement (Connor et al., 2015; Weyer & Dell’Erba, 2022; Winner & Cooper, 2000). Recent efforts to develop STEAM programs that combine arts education with opportunities in STEM (i.e., Science, Technology, Engineering, and Math) share these goals (Belbase et al., 2022; Weyer & Dell’Erba, 2022).

## **Promising Practices & Barriers for Integrated Arts Education**

Many factors have been identified for increasing the effectiveness of arts integration. For instance, the delivery of effective integrated arts education requires clear policies and appropriate funding (Arts Education Partnership, 2012), strong professional development and assessment (Andrews, 2006; Brophy, 2011; Chicago Public Schools Office of Arts Education, 2013; Conway et al., 2005; Remer, 2010; Seidel et al., 2009), and the vision and cooperation of multiple partners, including administrators, classroom teachers, and arts providers (Bamford, 2010; Bodilly et al., 2008; Lorimer, 2009; Miksza, 2013). Although there is evidence that careful collaboration between arts educators and classroom teachers plays a particularly important role in successful arts integration, there is also evidence that this is one of the most challenging aspects of arts integration and can be exacerbated by constraints on classroom teachers’ time and a lack of administrator buy-in and support (Carpenter Estrada et al., 2022; May & Robinson, 2016; Rorrer & Groth, 2009; Rorrer, Groth, & Raphael, 2010; Rorrer et al., 2011; Rorrer et al., 2012; Rorrer et al., 2013).

## **Benefits of Integrated Arts Education**

The extant literature on the benefits of arts education and integration has historically lacked the rigor needed to definitively demonstrate measurable impacts (Bowen & Kisida, 2023). Many studies have been qualitative, focusing on descriptions of participants’ experiences (Boyes & Reid, 2005). However, a spate of recent correlational and quasi-experimental studies designed to assess impact have yielded new insights. Some studies report positive associations between arts integration programs and student outcomes, including stronger academic skills and test scores (Baker, 2012; Butzlaff, 2000; Melnick et al., 2011; Smithrim & Uptis, 2005; Walker et al., 2011) as well as improved attendance (Walker et al., 2011; Thomas & Arnold, 2011), engagement (Kosky & Curtis, 2008; Smithrim & Uptis,

2005), creativity (Arts Education Partnership, 2007; Hardiman et al., 2009), and collaboration and community involvement (Arts Education Partnership, 2007; Ruppert, 2006). However, other studies have found no significant relationships (Burger & Winner, 2000; Thomas & Arnold, 2011) or mixed results across outcomes (Luftig, 2000). In a recent meta-analysis conducted by the American Institutes for Research (AIR), the authors found generally positive, but modest, effects of arts integration on student outcomes (Ludwig, Boyle, & Lindsay, 2017).

High-quality, randomized control trials (RTC) of arts education and arts integration programs are rare (Ludwig et al., 2017). However, two recent RCTs have found significant impacts of arts learning on student outcomes (Bowen & Kisida, 2023; Corbisiero-Drakos et al., 2021). The study by Bowen & Kisida (2023) found significant impacts on students' behavioral outcomes, writing achievement, social-emotional skills, and college aspirations at schools that provided their students with more arts educational experiences as a result of schools' participation in an arts access initiative. In relation to specific student populations, the results of this study showed that arts education was particularly beneficial for elementary English Language Learners (ELLs). Like the BTS Arts program, this initiative was voluntary, required principal buy-in and management support, and a commitment of funds to support program activities, which included educational arts experiences offered through partner organizations via on- and off-campus performances and workshops, teaching-artist residencies in schools, after school programs, and field trips. The study by Corbisiero-Drakos et al. (2021) focused more specifically on the integration of arts into 2<sup>nd</sup> to 4<sup>th</sup> grade classroom instruction in high-poverty schools by forging partnerships between teaching artists and classroom teachers or school-based specialists to create integrated curricula and lessons. During this three-year study, students at schools participating in the program were engaged in arts-integrated instruction in various modalities (i.e., visual arts, theater, music, and dance) that centered on works of art (e.g., exhibits or performances) for five weeks at a time. The findings of this study showed that students' engagement in arts-integrated curriculum and instruction was significantly related to higher 21<sup>st</sup> century skills, particularly in relation to critical thinking.

In addition to benefits related to student outcomes, some studies have also highlighted the impacts of arts integration on teachers' perceptions of their ability to reach disengaged students and be responsive to the needs of students with different learning needs (Lackey & Huxhold, 2016; Scripp & Gilbert, 2016). Furthermore, qualitative data from Corbisiero-Drakos et al.'s (2021) three-year implementation of an arts-integrated curriculum found evidence that classroom teachers found renewed joy in teaching with this curriculum, felt better able to prepare hands-on lessons, felt better able to support student creativity, and felt better prepared to be flexible and resourceful in seeking support for this new way of teaching.

## **Prior Evaluation and Research on the BTS Arts Program**

The Utah Education Policy Center (UEPC) served as the evaluator for the BTS Arts program from 2008-2014 (Rorrer & Groth, 2009; Rorrer, Groth & Raphael 2010; Rorrer et al., 2011; Rorrer et al., 2012; Rorrer et al., 2013) and provided a Technical Assistance Guide to support program expansion and effectiveness (UEPC, 2015). Prior evaluation and research conducted by the UEPC has found the following key findings:

- participation in the BTS Arts program was associated with small, positive effects on student achievement outcomes in language arts, science, and mathematics;
- increased fidelity to the program resulted in slightly higher student achievement;
- arts integration increased with other content core areas over time;
- perceived social/emotional benefits for students, increases in students' exposure to the arts, increased parent and community engagement, and improved school climate or sense of community;
- perceived positive impact on student attendance;
- leadership (i.e., principals, district representatives) served an important role in establishing clear expectations and organizational structures to support arts education and collaborative planning;
- side-by-side teaching implementation varied across participating sites, with the most common form of side-by-side teaching being BTS Arts educators leading the lessons and classroom teachers assisting;
- university partners served in a unique and important role as they provided professional development to BTS Arts educators.

More recently and similar to previous UEPC evaluation reports, studies by May and Robinson (2016) and Carpenter Estrada et al. (2022) have also reported challenges to program implementation, including limited collaboration between BTS Arts educators and classroom teachers, constraints on educators' time for co-planning and side-by-side teaching, lack of administrative buy-in and support for program implementation, and additional professional development needs for BTS Arts educators related to classroom management, core standards, and their preparation to teach arts-integrated curricula.



## 3 | Effective Practices Analyses

### Overview

The analysis reported below is designed to address three research questions from the proposal:

- 1 How does a school-wide or district-wide BTS Arts Integration program impact elementary students' learning of educational aspirations found in Utah's Portrait of a Graduate?
- 2 Which BTS implementation models most effectively support student learning of the educational aspirations found in Utah's Portrait of a Graduate?
- 3 What instructional and collaborative planning strategies/methods are used to implement a school-wide or district-wide BTS Arts integration program in participating LEAs? Which ones are yielding the most impact on student learning through arts integration?

Rather than present the results in the order listed above, this report is organized to present the results in a way that is most intuitive and informative. The report begins with research question 3, presenting a high-level description of the number of schools participating in BTS Arts from 2021 to 2023. It then focuses on specific BTS Arts integration methods, describing the extent to which each one is used across schools. The focus then shifts to efficacy and asks which BTS Arts implementation methods, either alone or in combination, are significantly related to two student outcomes: scores on end-of-year assessment tests and chronic absenteeism. The section concludes with a summary of the findings from the study of effective practices.

### Method

The data for this analysis come from two sources: the BTS Arts Assurance Surveys and USBE school records. The former are used to measure BTS Arts implementation, and the latter are used to measure outcomes related to Utah's *Portrait of a Graduate* ("Utah Portrait of a Graduate Competencies," 2020).

#### ***Measuring BTS Arts Implementation***

The BTS Arts Assurance Surveys were administered by the Sorenson Impact Institute to BTS Arts educators and school principals in BTS Arts participating schools in 2021, 2022, and 2023. Specifically, the BTS Arts Assurance Surveys were designed to measure the level of implementation of BTS Arts integration at each school. Similar to evaluations from 2008-2014, the surveys included questions about the number of hours per week that students were exposed to BTS Arts instruction, the overall quality and regularity of BTS Arts instruction, the degree to which classroom teachers participated during BTS Arts instruction, the provision of curriculum maps to BTS Arts educators, the frequency of meetings between classroom teachers and BTS Arts educators, and the percentage of students at the school who had access to BTS Arts instruction. Table 1 shows the number of unique BTS Arts educator respondents and principal respondents for each year in the "Total" columns. Many BTS Arts educators

worked at more than one school, and the distribution of the number of schools which were evaluated by a single BTS Arts educator is shown in the BTS Arts Educators columns.

**Table 1. Responses to BTS Arts Assurance Surveys by Educators and Principals**

Year	BTS Arts Educators: Number of Schools							Principals
	1	2	3	4	5	7	Total	Total
2021	176	65	5	4	3	1	254	335
2022	168	74	3	4	1	1	251	330
2023	234	89	5	4	0	0	332	374

Table 1 shows that it was common for BTS Arts educators to work at more than one school within the same year. The percentage of BTS Arts educators who worked at more than one school within the same year was 31% in 2021, 33% in 2022, and 30% in 2023. In the analysis that follows, the responses by principals and educators at a single school for a single year were averaged together so that each school had only one average level of each implementation measure each year.

Among the many advantages of using the BTS Arts Assurance surveys as a source of information about BTS Arts implementation are 1) the high level of participation, as exemplified by the number of respondents in Table 1; 2) participation by both educators and administrators at each school (for at least 82% of schools, there were responses from both a principal and a BTS Arts educator); 3) collection of data in the same year as the events that are being asked about, and 4) many critical areas of implementation are covered (e.g., level of student exposure, extent of teacher participation, frequency of meetings). In an early meeting between UEPC and the larger research group (e.g., personnel at BTS Arts-endowed universities/colleges, the Sorenson Impact Institute), the group discussed the relative merits of either relying on the BTS Arts Assurance surveys and/or conducting a new survey, including gathering information not covered by the BTS Arts Assurance surveys. New data collection proposed would have included questions such as: 1) How often each of the following groups offered direct instruction to students in a way that integrates the teaching of fine arts with core subject content: Classroom teachers, Arts educators, Paraeducators, and Visiting BTS Arts coaches or visiting artists; 2) How often visiting BTS Arts coaches or visiting artists provided coaching to classroom teachers and to paraprofessionals on arts integration; and 3) the FTE of the BTS Arts educator assigned to a particular school. However, after careful deliberation and discussion of the pros/cons and primary questions, the group decided that 1) participation rates of any new survey would be much lower than the high rates observed for the BTS Arts Assurance Survey; and 2) most schools would struggle to reconstruct data on previous years, which would render the data perhaps less than optimal for accuracy and use. As a result of this collective decision among study partners, the USBE, and advisory committee, this report will limit its analysis to implementation as it is measured on the existing 2021-2023 BTS Arts Assurance Surveys.

## ***Measuring Student Outcomes Related to Utah's Portrait of a Graduate***

Utah's Portrait of a Graduate ("Utah Portrait of a Graduate Competencies," 2020) includes thirteen outcomes such as academic mastery, wellness, collaboration and teamwork, honesty, and service. As discussed in the approved research proposal, all thirteen outcomes are worthy of consideration, but objective measurements are available at this time for only two: academic mastery (as measured by the end-of-year Acadience and RISE assessments), and wellness (as measured, admittedly indirectly and imperfectly, by school attendance). As such, two measures – student assessment scores and attendance – will be the outcome variables in the efficacy analysis.

Rather than measure school attendance directly (as the number of days that a student attended a school, usually out of 180 possible days), a decision was made to focus, instead, on a variety of attendance more directly concerned with wellness: chronic absenteeism (defined as students missing more than 10% of the expected school days). In addition to signaling levels of non-attendance associated with poor outcomes (Gottfried, 2014; Gottfried, 2015), the chronic absenteeism indicator in the USBE's school records overcomes problems with counting attendance for students who attend school for only part of the year because they have moved in or out of the state.

USBE school records<sup>3</sup> were used to obtain school-level averages for scores on end-of-year state assessments in reading, math, and (after fourth grade) science as well as school-level rates of chronic absenteeism. Because the scale of the end-of-year state assessment scores (the average score and the typical range of scores) varies considerably across grade levels, test type (Acadience or RISE), subject area, and sometimes year, these scores were transformed to z-scores within grade level, test type, subject area, and year. Thus, the mean student score within a particular test type, grade level, subject area, and school year was zero and the standard deviation of the scores was one. A school with an average score above zero had students who, as a group, scored above-average, while a school with an average score below zero had students who, as a group, scored below-average.

## **Findings**

As described above, the multiple Assurance Survey responses per school were consolidated by averaging the BTS Arts educator or principal responses at a particular school in a particular school year. The number of schools and the number of their LEAs (school districts in the case of traditional public schools, and charter school associations in the case of charter schools), as well as the number of students enrolled in those schools, is reported in Table 2.

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<sup>3</sup> USBE school records were available to the UEPC through a Master Data Sharing Agreement that complies with state and federal regulations regarding the privacy and confidentiality of school records.

**Table 2. Number of Schools, LEAs, and Students in Analysis per School Year**

School Year	LEAs	Schools	Students
2021	56	357	191,025
2022	58	347	182,073
2023	66	409	209,971

Table 2 shows that although the number of LEAs increased from 2021 (56) to 2022 (58) and again in 2023 (66), the total number of schools fell slightly from 2021 (357) to 2022 (347) before rebounding to its highest level in 2023 (409). The total number of students at those schools ranged from about 180,000 to 210,000 students per year, emphasizing that the BTS Arts program has an impressive reach.

### **Level of BTS Arts Implementation**

We begin with an overview of the available metrics for implementation of the BTS Arts programs and then report on each metric in turn. The annual BTS Arts Assurance Survey asked educators and principals to rate the level of implementation of BTS Arts integration at their school according to the following metrics:

1. *Exposure.* The number of hours per week that students were exposed to BTS Arts instruction.
2. *Perceptions of Quality and Regularity.* The respondent’s overall impressions about the quality and regularity of BTS Arts integration with core subjects.
3. *Classroom Teacher Participation.* The degree to which classroom teachers were involved during BTS Arts instruction (with four response options: absent, present, active participant, and co-teacher).
4. *Curriculum Maps.* The degree to which BTS Arts educators were given materials such as curriculum maps at the beginning of the school year that they could use to integrate their arts lessons with classroom content.
5. *Met Regularly.* Whether BTS Arts educators and classroom teachers met regularly (yes or no).
6. *Meeting Frequency.* If BTS Arts educators and classroom teachers did meet regularly, how often they did so.
7. *Access.* The percentage of students at the school who had access to BTS Arts instruction.

In the sections below, we describe the extent of BTS Arts implementation for each of the above measures.

#### **Exposure**

The number of hours per week that a typical student experienced BTS Arts instruction was measured by two Assurance Survey items. One item asked for the frequency of classroom instruction using options that indicated both the portion of the school year during which classes were offered (e.g., “throughout the year,” “half the year”) and the frequency (e.g., “weekly,” “every other week”). Respondents were also free to describe the frequency of classes in an open-ended format and often did so. A second item asked for the typical length of a session in minutes, which was asked separately about kindergartners, first through third graders, and fourth through sixth graders. Response options included “less than 30 minutes,” “30 to 45 minutes,” and “more than 45 minutes,” but respondents

often made use of an open-ended text response to report their own time estimate. For each grade level group in the “minutes” item, we combined the minutes information with information about frequency to calculate a weekly exposure estimate. In some cases, a respondent’s description of frequency or minutes was not specific enough to result in a numeric estimate, in which case their estimate was excluded from the analysis. This was more common in the 2021 data (11% of schools missing time estimates) than in the 2022 and 2023 data (only 2% and 3% of schools missing data on exposure, respectively). The distribution of known exposure to the BTS Arts program estimates is shown in Figure 2.

**Figure 2. Distribution of Students’ Exposure to BTS Arts Instruction by School Year**

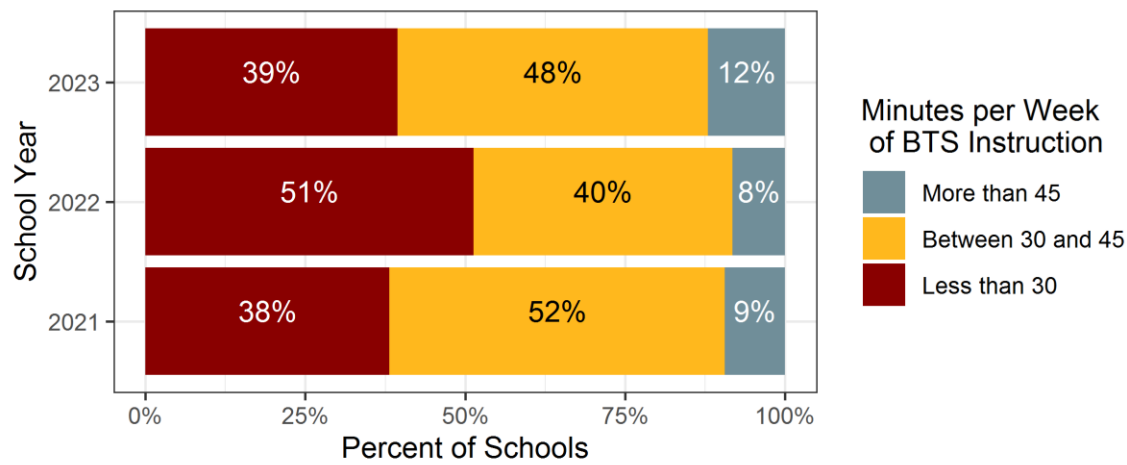


Figure 2 shows that in 2021 and 2023, the highest concentration of schools was in the 30-45 minute range. In 2022, however, the largest concentration of schools was in the “less than 30 minutes” range. Only about 10% of schools tended to report more than 45 minutes per week, usually due to having more than one arts session per week. A common cause of having fewer than 30 minutes per week was that instruction was only offered for part of the year: one quarter, trimester, or semester. This partial-year participation was often accompanied by explanations indicating that the BTS Arts educator was splitting their time among several schools.

### Perceptions of Quality and Regularity of BTS Arts Integration

Principals and BTS Arts educators rated how much they agreed or disagreed that instruction integrating the arts core standards with Utah ELA core was regular, ongoing, and high quality. The phrasing of this item varied slightly across years. In 2021 and 2022, this was measured with the single item, “Arts instruction integrating the arts core standards with Utah ELA core is regular, ongoing, and high quality.” In 2023, that item was split into two items: “Art instruction integrating the arts core standards with Utah ELA core is regular” and “Arts instruction integrating the arts core standards with Utah ELA core is high quality.” To aggregate across years, the responses to the two items in 2023 (“regular” and “high quality”) were averaged together ( $r = .74$ ). In all cases, response options were on a 6-point scale from “Strongly Disagree” to “Strongly Agree.” Only one school over three years had no rating of overall quality from either a principal or BTS arts educator. The distribution of ratings is shown in Figure 3.

**Figure 3. Distribution of Perceptions of Quality and Regularity of Arts Integration by School Year**

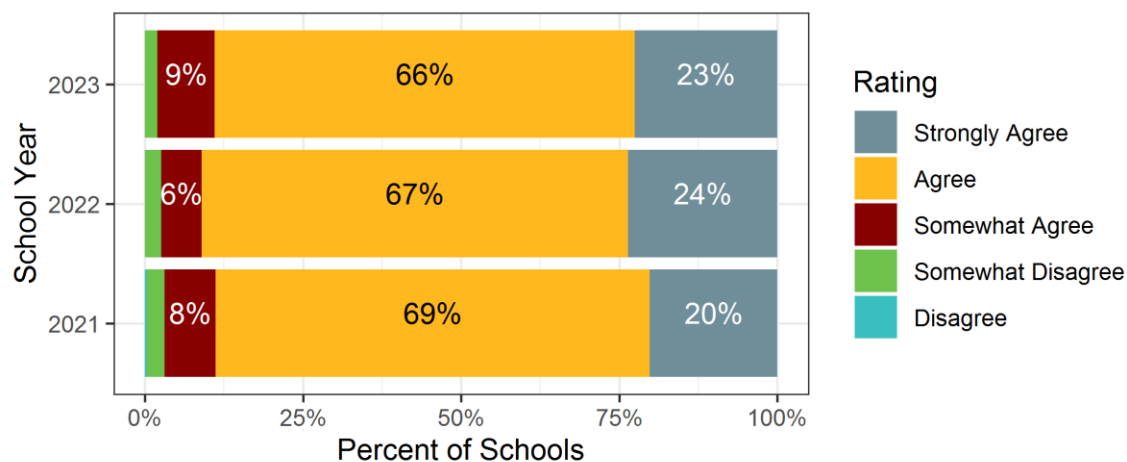


Figure 3 presents generally good news for BTS Arts integration: around 90% of schools either “Agreed” or “Strongly Agreed” that arts integration was regular, ongoing, and high quality. These results provide favorable, but indirect evidence for the “Collaboration for Integration” model of BTS Arts implementation (Beverly Taylor Sorenson Arts Learning Handbook, 2022-2023, p. 25), which emphasizes classroom teachers and arts educators planning lessons that integrate the arts with core subject content. The evidence is indirect in that it looks only at the results – the level of integration – and not at the process (classroom teachers and BTS Arts educators co-planning or co-teaching). Although these results are positive, they should be interpreted with a grain of salt given that this kind of global rating is more subjective than the other questions on the survey.

### **Classroom Teacher Participation**

The degree to which classroom teachers participated during BTS Arts instruction was measured by a single assurance survey item. Respondents were asked to select the statement that “most accurately describes collaboration between the arts educator and classroom teachers” during BTS Arts instruction. Response options included “The classroom teacher is not present during the arts lesson” (represented in Figure 4. as “Absent”), “The classroom teacher is present for the arts lesson, but does not participate in class delivery” (represented as “Present”), “The classroom teacher is an active participant in the arts instruction” (“Active Participant”), and “The arts educator and classroom teacher work cooperatively side-by-side throughout the delivery of the lesson” (“Co-Teaching”).

This assurance survey question addresses several high-priority questions about BTS Arts implementation regarding alignment with BTS Arts *Models of Implementation* (“Beverly Taylor Sorenson Arts Learning Handbook, 2022-2023”, p. 24). Specifically, the “Co-Teaching” response aligns with the “Side-by-side” instructional model and the “Active Participant” response aligns with the “Collaborative Co-Teaching” model. The distribution of responses is shown in Figure 4.

**Figure 4. Distribution of Classroom Teacher Participation in BTS Arts Instruction by School Year**

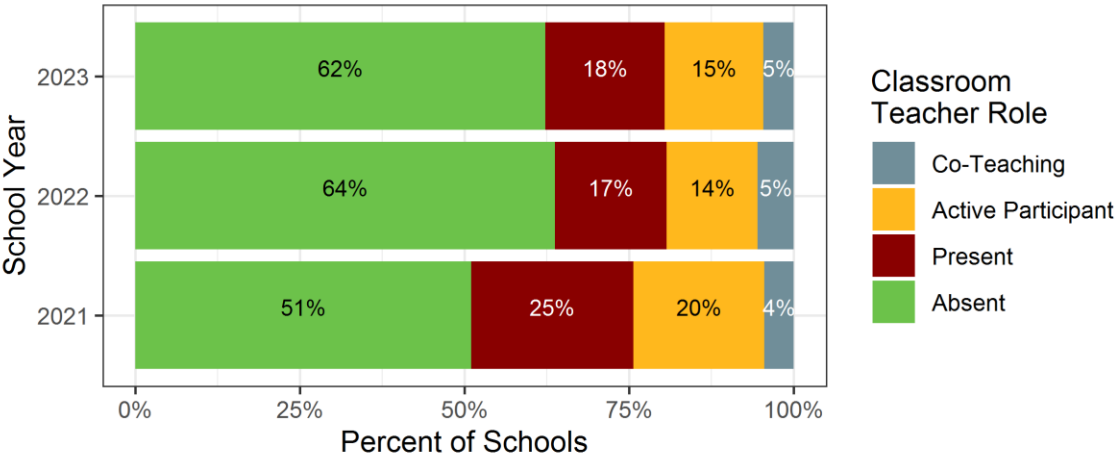


Figure 4 presents disappointing results for BTS Arts implementation. Specifically, this analysis indicates the low level of involvement of classroom teachers during BTS Arts instruction. Only four to five percent of schools report that classroom teachers are co-teaching during arts instruction, indicating that the “side-by-side” instruction model is a rarity. More common, but still unusual (occurring in only 14-20% of schools), was the “Collaborative Co-Teaching” model represented in Figure 4 by “Active Participant.” The most common level of classroom teacher participation was no participation at all: fifty-one to sixty-four percent of schools reported that the classroom teacher is absent during BTS Arts instruction.

**Curriculum Maps**

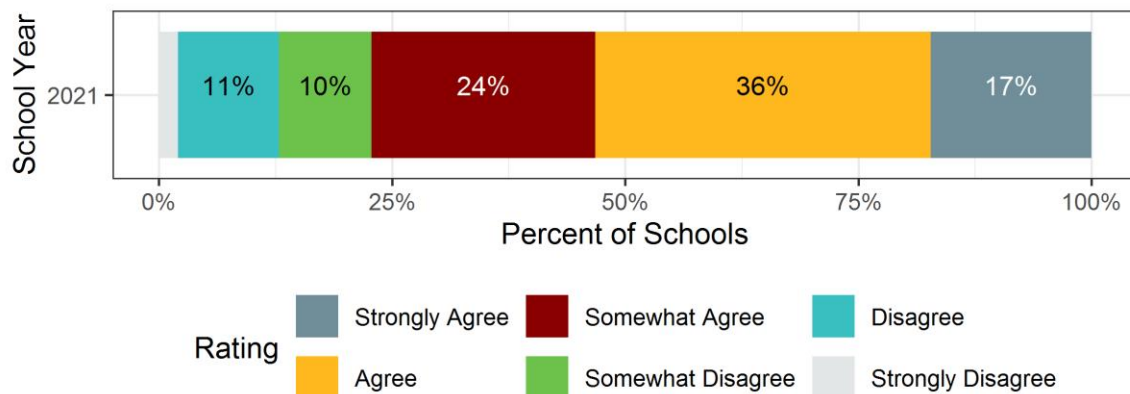
The “Collaboration for Integration” model of the BTS Arts implementation (“Beverley Taylor Sorenson Arts Learning Handbook, 2022-2023”, p. 25) involves cooperative planning between classroom teachers and BTS Arts educators about opportunities to integrate the arts and subject matter core content (e.g., language, math, science). Although frequent meetings between classroom teachers and BTS Arts educators are the preferred means by which this would be accomplished, another method is for classroom teachers to supply BTS Arts educators with grade-level-specific curriculum maps at the beginning of the year. These curriculum maps describe the major core subject topics covered by the classroom teachers for the year, and BTS Arts educators can use those maps to plan arts activities that integrate those core topics. When it occurs in the absence of any other collaboration with classroom teachers, this method places the burden for the actual *integration* of subject matter core content with arts squarely on the shoulders of BTS Arts educators. However, the sharing of curriculum maps at the beginning of the year does represent a clear goal that can be easily communicated to classroom teachers, which may provide a common base for the level of arts integration occurring at a school.

The measure of the implementation of curriculum map provision to BTS Arts educators changed considerably over time and so will be reported separately below.

**2021**

In 2021, curriculum map provision was measured with the item, “Arts educators are given curriculum maps for the core curriculum area(s) they will be expected to integrate for each grade level at the start of each school year.” Response options were on a 6-point scale from “Strongly Disagree” to “Strongly Agree.” The distribution of responses is shown in Figure 5.

**Figure 5. “Arts educators are given curriculum maps for the core curriculum area(s) they will be expected to integrate for each grade level at the start of each school year” (used in 2021)**



The results in Figure 5 provide a mixed picture of the provision of curriculum maps for BTS Arts educators in 2021. While 53% of schools reported that they “Agreed” or “Strongly Agreed” that arts educators were given curriculum maps for the core curriculum area(s) they were expected to integrate for each grade level at the start of the school year, 23% of schools disagreed with this statement to varying degrees.

**2022-2023**

In 2022-23, the implementation measure was expanded from curriculum maps to include other tools and resources: “Select the degree to which the BTS Arts educator received tools and resources (such as curriculum maps, scopes and sequences, and other grade-level specific standards) for the core curriculum area(s) they were expected to integrate for each grade level at the start of the school year.” There were five response options: “They did not receive any tools and resources,” “They received tools and resources for less than half of the grade levels they were expected to teach,” “They received tools and resources for half of the grade levels they were expected to integrate,” “They received tools and resources for more than half of the grade levels they were expected to integrate,” and “They received tools and resources for all grade levels they were expected to integrate.” The distribution of these responses is reported in Figure 6.



**Figure 6. “Select the degree to which the BTS Arts educator received tools and resources (such as curriculum maps, scopes and sequences, and other grade-level specific standards) for the core curriculum area(s) they were expected to integrate for each grade level at the start of the school year” (used in 2022-23)**

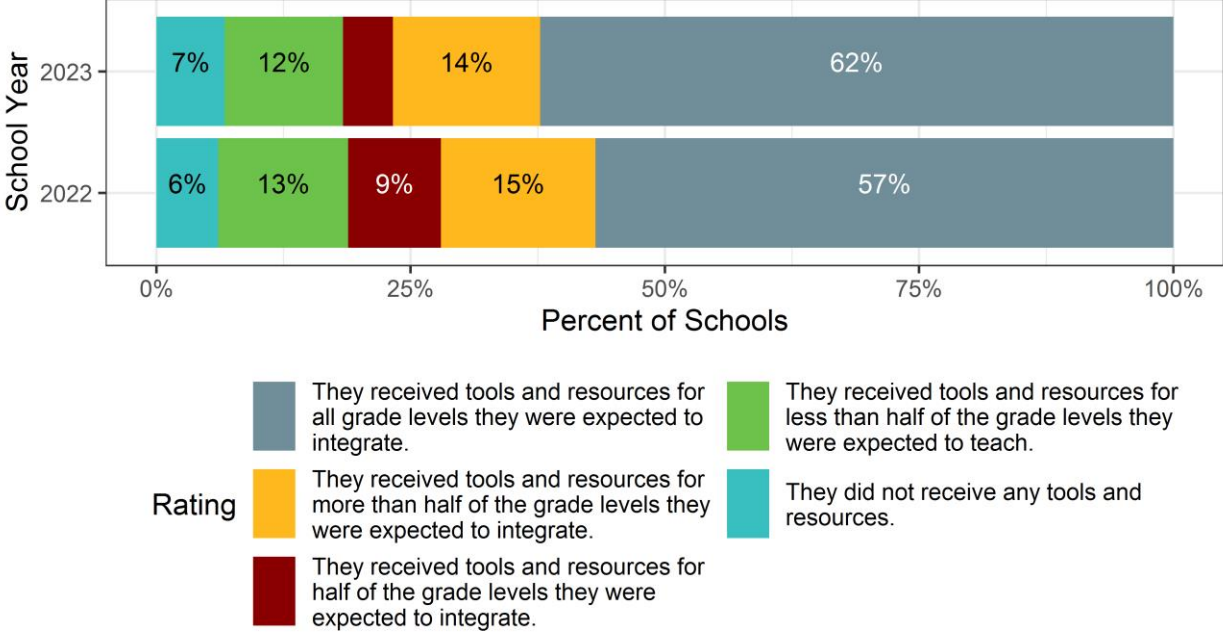


Figure 6 helps to clarify the mixed results offered by the 2021 item on curriculum maps in Figure 5. Figure 5 indicates that 53% of schools Agreed or Strongly Agreed that BTS Arts educators were being provided with curriculum maps for each grade level they would be teaching. This corresponds to the 57% and 62% of schools in 2022 and 2023, respectively, that reported perfect implementation (BTS Arts educators receiving tools and resources for all grade levels they were expected to integrate) in Figure 6. The clarification in Figure 6 is in regards to why 23% of schools in Figure 5 *disagreed* that BTS Arts educators were being provided with curriculum maps. Figure 6 shows that one source of that disagreement is that 6-7% of schools reported that BTS Arts educators received *no* curriculum maps, and an additional 12-13% reported that BTS Arts educators were receiving resources for fewer than half the grade levels they were expected to integrate.

**Met Regularly**

The survey asked respondents whether “there is a set schedule for meetings between BTS Arts educator and grade level teams,” with response options of “yes” or “no.” The percentage of schools with a missing value for regular meetings was 4% in 2021 and 5% in 2022 and 2023. The distribution of non-missing responses is shown in Figure 7.

**Figure 7. Distribution of Regular Meetings between BTS Arts Educators and Classroom Teachers by School Year**

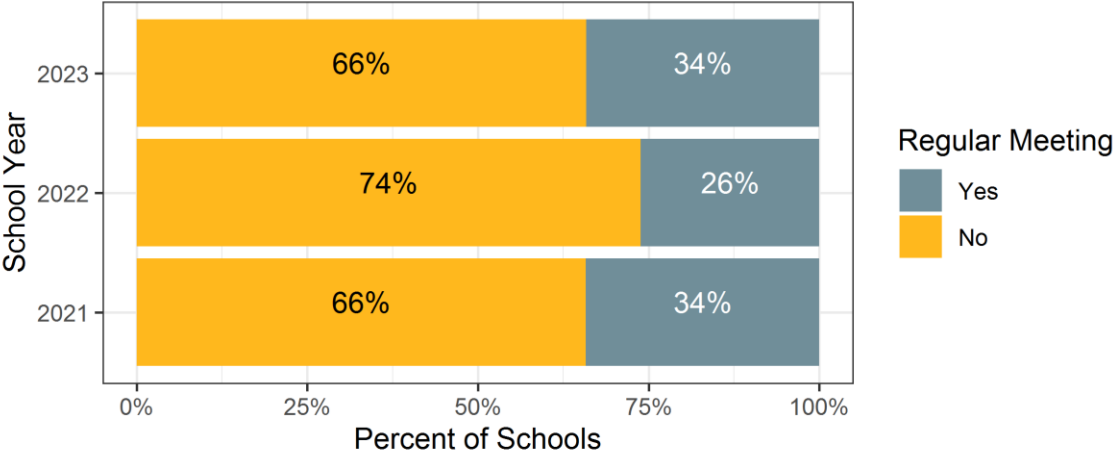


Figure 7 presents disappointing news for BTS Arts implementation with regard to regular meetings between BTS Arts educators and classroom teachers. Only 26-34% of schools report that BTS Arts educators and classroom teachers met regularly. These results partially address the “Collaboration for Integration” model of BTS Arts integration (“Beverley Taylor Sorenson Arts Learning Handbook, 2022-2023”, p. 25), which emphasizes classroom teachers and arts educators planning lessons together that integrate the arts with core subject content. Without regular meetings and intentional planning, the likelihood of successful integration is reduced.

**Meeting Frequency**

For the 26-34% of schools that reported that BTS Arts educators and classroom teachers met regularly, the survey asked how often they met. Response options included “weekly,” “every other week,” “monthly,” etc., and also permitted a write-in option. The distribution of responses is shown in Figure 8.

**Figure 8. Distribution of Frequency of Regular Meetings between BTS Arts Educators and Classroom Teachers by School Year**

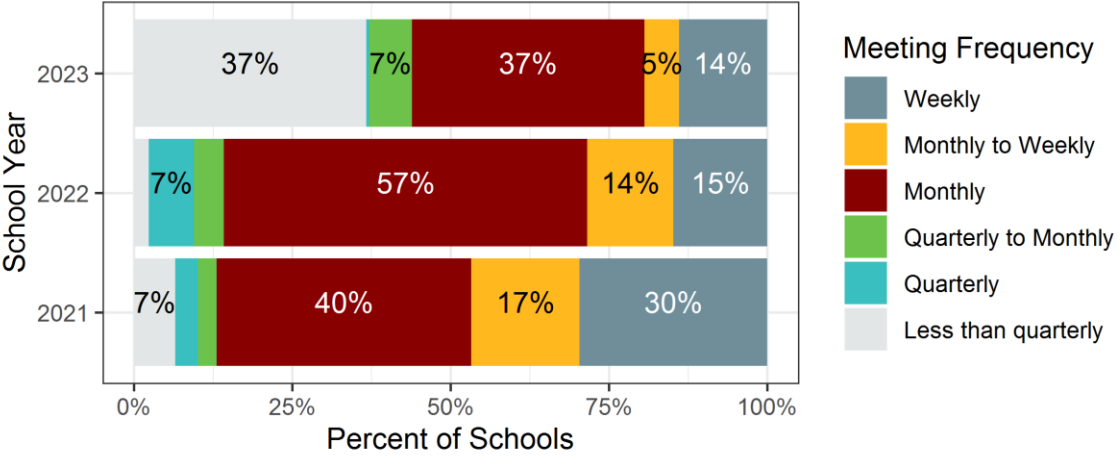


Figure 8 shows a reduction over time in the frequency of meetings among those schools who reported regular meetings between BTS Arts educators and grade-level teams. In 2021, 47% of schools reported meeting more than monthly (more than 9 times per year, represented in Figure 8 by “Monthly to Weekly” or “Weekly”). By 2023, this fell to 19%. However, this pattern should be interpreted with caution because many schools reported that meetings were held “as needed,” which was omitted from Figure 8. because of the ambiguity in converting “as needed” to a number of meetings per year. To improve knowledge about meeting frequency, future surveys should ask for respondents’ best estimate for the number of meetings per year.

**Access**

Access was measured on a 4-point scale with the following response options: “Less than 75% of students have access to BTS instruction,” “75-90% of students have access to BTS instruction,” “90-99% of students have access to BTS instruction,” and “100% of students have access to BTS instruction.” The distribution of responses to this question is shown in Figure 9.

**Figure 9. Distribution of Access to BTS Arts Instruction by School Year**

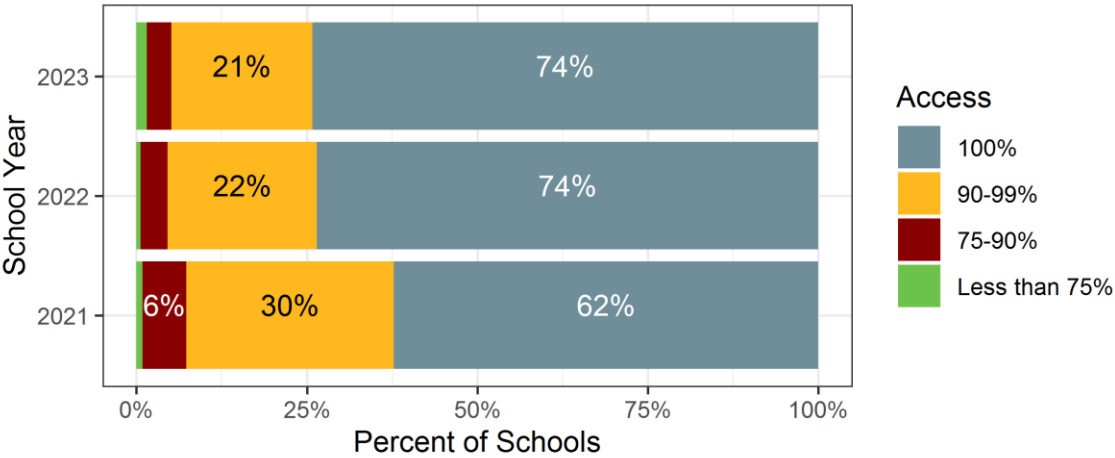


Figure 9. provides good news with regard to this aspect of implementation: at most schools implementing BTS Arts, a very high percentage of the students have access. From 2021 to 2023, over 92% of schools reported that more than 90% of students had access. The percentage of schools reporting 100% access increased from 2021 (62%) to 2023 (74%).

**Relationship between BTS Arts Implementation Measures and Student Outcomes**

The relationship between BTS Arts implementation and student outcomes addresses all three of the research questions referenced at the beginning of this section, but we will begin with the third question because it is the simplest of the three and provides a base on which to build. The third research question was “What instructional and collaborative planning strategies/methods are used to implement a school-wide or district-wide BTS Arts integration program in participating LEAs? Which ones are yielding the most impact on student learning through arts integration?” The first part of that research question, which asks about the range and extent of BTS Arts implementation in schools, was addressed in the section immediately preceding this one. The second part of that research question is the one we turn to now. As described in our approved research proposal, “To answer question 3b, we will examine the unique contribution of each aspect of implementation – side-by-side teaching, collaborative planning, etc. – using a multi-level regression model.”

To determine if some BTS implementations, either alone or in combination, are significantly related to student outcomes, we conducted a series of multi-level regression models that accounted for the same school being measured up to three times. We began by restricting the data to just those schools who had data on six of the seven implementation measures. The seventh implementation measure is frequency of regular meetings between BTS Arts educators and classroom teachers, which was omitted because it was only asked of the 26-34% of schools who indicated that there were regular meetings and many of the schools that responded did not provide a response that could readily be converted to a number. Omitting schools missing any of the other six implementation measures

reduced our sample from 439 to 401 unique schools<sup>4</sup>, retaining 91% of the original sample. In accordance with typical practice for regression analysis, we centered each of the implementation measures so that the mean of each measure was zero.

## Assessment Scores

Analysis of the assessment scores was conducted separately for each assessment subject domain – math, science, and reading. The analysis proceeded in several phases. First, we examined whether a multi-level model, as opposed to a simple linear model, was needed by estimating the amount of “clustering” within schools: the degree to which the same school tended to have similar average scores over time. The results supported the decision to use a multi-level model that accounted for that clustering in its estimates<sup>5</sup>.

Second, we constructed a model to predict school-level average assessment scores that included school-level covariates, which are characteristics of the school that we suspect might influence assessment scores but are not of direct interest in themselves, at least not for this project. In this case, the covariates were enrollment (number of students attending the school) and the percentage of students at the school who a) received special education services, b) were English language learners, c) were eligible for free or reduced-price lunch, d) were Asian, e) were Black or African American, f) were Native American, g) were Multi-racial or Multi-ethnic, h) were Pacific Islander, and i) were chronically absent. Two race/ethnicity categories were omitted – White and Hispanic – because they were highly correlated with the percentage of students who were English language learners ( $|r| > 0.9$ ). A correlation among covariates of that magnitude makes it difficult to distinguish the effect<sup>6</sup> of one variable from the effect of another variable, and so English language learner was selected in place of the two race/ethnicity categories. These covariates are important for the analysis because they allow us to compare schools that might at first seem very different. For example, if we understand the relationship between percent-free-reduced-lunch and assessment scores, and we know the value of percent-free-reduced-lunch for two schools, then we can estimate what the assessment score of each school would be if each school had the same level of percent-free-reduced-lunch. Once we have controlled for all those school-level differences, we can ask whether differences among schools in their level of BTS Arts implementation can explain differences in assessment scores. In Table 3, the column labeled “Covariates Only” shows the percentage of the differences among schools in their assessment scores that can be explained by all the covariates mentioned above (enrollment, percentage receiving special education services, etc.). This percentage has an upper limit of 100%, which would indicate that the covariates explained *all* of the differences between schools. As the “Covariates Only” column in Table 3 shows, 58 to 65 percent of the variance in average assessment score can be explained by the covariates.

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<sup>4</sup> The 439 and 401 numbers refer to the total number of unique BTS Arts-participating schools across the 2021-2023 BTS Arts Assurance Surveys.

<sup>5</sup> This is measured by computing the intra-class correlation (ICC) for a model with no covariates and a single random effect (school). In this case, the ICC values ranged from 0.93 for science to 0.95 for math. Given that the theoretical upper limit for the ICC is 1.0, these results indicate *very* high consistency in scores within schools over time.

<sup>6</sup> The use of the word “effect” is a shorthand way of referring to the relationship of a variable with the outcome. It should not be interpreted as implying a causal relationship to the outcome.

**Table 3. The Percentage of Variance in School-Level Average Assessment Scores Explained by Covariates, Years of Implementation, and All Measures of Implementation**

Domain	Covariates Only	+ Years of Implementation	+ All Measures of Implementation
Science	60.2%	+ 1.9%	+ 0.7%
Reading	65.4%	+ 1.8%	+ 0.4%
Math	58.2%	+ 2.5%	+ 0.5%

The third column in Table 3, labeled “+ Years of Implementation,” shows the results of a second series of multi-level linear regression models that include not only all the covariates discussed previously but also the number of years that a school participated in the BTS Arts program, insofar as that is captured in the BTS Arts Assurance surveys. Those surveys were from 2021, 2022, and 2023, and so the known years of implementation ranged from 1 to 3. Years of implementation explained an additional 1.8% to 2.5% of the differences among schools in their average assessment scores. Although this may seem small in the context of the covariates, each of those increases was statistically significant at  $p < .001$ . The magnitude of the relationship between years of implementation and assessment scores was remarkably consistent across assessment domains but was modest in size: For every year that a school participated in BTS Arts, the school average assessment score increased by 0.023 standard deviations for reading, 0.025 standard deviations for science, and 0.027 standard deviations for math. Those standard deviations are in the units of the original student-level assessments, not school-level standard deviations.

The finding of a small but significant relationship between years of BTS Arts implementation and assessment scores is consistent with an earlier evaluation of BTS Arts by UEPC (Rorrer et al., 2012). In that evaluation, students in schools with a BTS Arts program gained 0.28 points more per year on an end-of-year language arts assessment than students in schools without a BTS Arts program. Given that scores had a standard deviation of 10, a per-year gain of 0.28 points represents 0.028 standard deviations, which is very similar to the effect size estimate obtained from the current study.

The fourth column in Table 3, labeled “+ All Measures of Implementation,” shows the results of a third series of multi-level linear regression models that include all the previous covariates, plus the number of years of implementation, plus all the measures of implementation discussed above (e.g., exposure, overall ratings, classroom teacher participation). These models permit directly testing whether each of the BTS Arts implementations was related to school-level assessment scores, which addresses research question 3b (“Which ones [instructional and collaborative planning strategies / methods] are yielding the most impact on student learning through arts integration.”). These models also tested all possible two-way combinations of those implementations. For example, the model included a test of whether the relation between exposure and assessment score was different depending on whether the classroom teacher was teaching side-by-side with the BTS Arts educator or was an active participant. Together with the test of each implementation measure separately, these tests of combinations were designed to address research question number 2: “Which BTS implementation models most effectively support student learning of the educational aspirations found in Utah’s Portrait of a Graduate?” As shown in the fourth column of Table 3, all of the implementations and their two-way combinations accounted for less than 1% of the differences among schools in their average score on assessments. The full model with all the implementations was not significantly better at

explaining school differences in assessments than the model in the third column of Table 3 with covariates and years of implementation (all *ps* greater than .01). These results indicate that, insofar as they can be measured using the BTS Arts Assurance surveys, school differences in the level of implementation do not significantly explain school differences in average assessment scores. Given that the covariates explain approximately 60% of the differences, the failure to detect an effect of BTS Arts implementation is unlikely to be due to limitations in the measurement of assessment scores.

The failure to detect an effect of BTS Arts implementation does not mean that different models or methods of BTS Arts implementation have no effect on assessment scores. It may be that there are other important differences among schools in their implementation of BTS Arts that are not currently measured by the BTS Arts Assurance surveys. Differences among schools in these unmeasured variables may help to explain a school's average assessment score.

### ***School-wide and District-wide Adoption of BTS Arts***

Research question 1 is “How does a school-wide or district-wide BTS Arts Integration program impact elementary students' learning of educational aspirations found in Utah's Portrait of a Graduate?” In addition to asking whether the level of BTS Arts implementation is related to student outcomes, as was tested above, this question also asks whether the level of school-wide or district-wide adoption plays a role in efficacy. For example, would a school in which some grade levels (e.g., 4-6) are excluded from BTS Arts instruction show poorer outcomes than a school in which all grade levels are included? Would a school in a district with a very low rate of BTS Arts participation show poorer outcomes than a school in a district with a higher rate of BTS Arts participation?

A direct test of the question of school-wide adoption is given in Table 3 because “access” directly measures the percentage of students in a school who have access to BTS Arts. Like the other measures of BTS Arts implementation (except for years of participation), the percentage of students at a school with access to BTS Arts instruction was not significantly related to school-level assessment scores. However, this test of school-wide adoption is limited by the fact that the typical level of access was very high, as shown in Figure 9. Without more variation in access, it will be hard to test the relationship between access and assessment scores.

One metric of district-wide adoption is the percentage of elementary schools in a district that participate in BTS. This percentage varied widely, with Granite and Jordan representing larger districts with a high percentage of elementary schools participating (100% and 98% in 2023) to Davis and Weber representing larger districts with a smaller percentage of elementary schools participating (10% and 19% in 2023)<sup>7</sup>. To test whether schools in districts with high or low rates of participation differ in their outcomes, we extended the models reported in Table 3 to include the fact that schools were nested within districts and that those districts varied in the percentage of schools within the district that were participating in BTS Arts. This additional information did not significantly improve the fit of the models, indicating that district-wide adoption was not significantly related to assessment scores. It is possible that district-wide adoption may have an effect upon other aspects of the program

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<sup>7</sup> These participation rates are based upon the BTS Arts Assurance Surveys returned from those schools.

(e.g., administrative efficiency) and other outcomes not considered in this report, such as student creativity or engagement.

### **Chronic Absenteeism**

As with the analysis of assessment scores, a preliminary analysis was conducted to determine whether multi-level models were necessary for the analysis of rates of chronic absenteeism. Results indicated a high level of clustering within schools and confirmed the necessity of using a multi-level model.

The same set of covariates listed above in the analysis of assessment scores was used in the analysis of chronic absenteeism, with the exception that chronic absenteeism itself could no longer be used as a covariate. The first column in Table 4, labeled “Covariates Only,” shows that the covariates explained 31.3% of the variance among schools in rates of chronic absenteeism.

Another multi-level model that included the covariates as well as years of implementation explained an additional 5.4% of the variance, as shown in the second column of Table 4. This increase was statistically significant at  $p < .001$ . However, unlike for assessment score, the interpretation of the effect of years of implementation is not straightforward because of a large historical change in the overall rate of chronic absenteeism that occurred during the years of the present study (2021-2023).

Through use of the UEPC’s Master Data Sharing Agreement with USBE, we estimated the historical rates of chronic absenteeism for schools with lowest grade levels less than 2 and highest grade levels less than 7 (which captures most schools that would be identified as “elementary”) between 2004 and 2022. This resulted in data from between 490 and 603 elementary schools each year. From 2004 to 2016, the overall rate of chronic absenteeism across schools (weighted by school enrollment) was between 10% and 12%. Starting in 2017, rates of chronic absenteeism began to rise steadily. By 2019, the rate was 16%. In 2020, the rate of chronic absenteeism is indeterminate because of disruptions due to COVID-19. In 2021, the rate was 19%, and in 2022, the rate was 30%. The rate of chronic absenteeism in our sample of BTS Arts schools from 2021 to 2023 was 20.1%, 33.4%, and 30.4%, which is consistent with the state-wide trends. Ideally, we would be able to disentangle school year from year of implementation because some schools started the program in 2022 or 2023 and thus had their first year in a year that was out of step with other schools. Unfortunately, that was not the rule. Ninety-one percent of the schools in our BTS Arts sample participated in 2021, 2022, and 2023, and so their years of implementation are perfectly correlated with school year. Overall, the correlation between school year and year of implementation is  $r = 0.82$ . As a result of the high correlation between years of BTS implementation and school year, the effect of “years of implementation” cannot be interpreted independently of the historical rise in chronic absenteeism that occurred in the wake of the COVID-19 pandemic. In summary, although there is a significant relationship between years of implementation and chronic absenteeism, that relationship is positive, indicating that more years of implementation are associated with higher levels of chronic absenteeism. However, this positive relationship is simply a reflection of a large historical increase in chronic absenteeism that is occurring across Utah and is not distinctive to the BTS Arts program. The relationship between years of implementation and school-level *assessment score* (rather than chronic absenteeism) that was reported above is not subject to the same concern because assessment scores were standardized within year and thus every year had a mean of zero.



The third column in Table 4 shows the additional percentage of variance in school rate of chronic absenteeism that is explained when the BTS Arts implementation measures (including all possible two-way combinations of those measures) are included in the model. This additional 2% of variance was statistically significant at  $p = .002$ .

**Table 4. The Percentage of Variance in School-Level Rate of Chronic Absenteeism Explained by Covariates, Years of Implementation, and All Measures of Implementation**

Covariates Only	+ Years of Implementation	+ All Measures of Implementation
31.3%	+ 5.4%	+ 2.0%

Examination of the relationship between individual BTS Arts implementation measures and chronic absenteeism revealed only one implementation measure that was significantly related to chronic absenteeism: classroom teacher participation. A one-step increase in the level of participation of classroom teachers (e.g., from “absent” to “present but not participating”) was associated with an *increase* of 1.6 percentage points in the rate of chronic absenteeism. It is implausible that this observed relationship represents a cause and effect relationship between the level of classroom teacher participation and chronic absenteeism. A more plausible explanation for this observed relationship is that the direction of causality is reversed, and schools with higher rates of chronic absenteeism may rally to address the problem by increasing teacher involvement during art classes to support classroom management. Given the small size of this effect, it is also possible that it is spurious (occurring by chance, given the large number of tests conducted).

## 4 | Barriers to Participation Analyses

### Overview

In addition to research questions focused on the impact of the BTS Arts program, another primary goal of this research study was to better understand why some elementary schools across Utah are not participating in BTS Arts. More specifically, these analyses focused on answering the following questions:

- 1 Why have schools/LEAs chosen not to participate in the BTS Arts Learning program?
- 2 What would need to change for schools/LEAs to choose to participate in the BTS Arts Learning Program?

### Method

The UEPC team, in consultation with our study partners, undertook the construction of a survey to answer these research questions. First, the UEPC interviewed representatives of schools and districts that were not currently participating in the BTS Arts program. Next, these interviews were used in combination with a review of existing literature to inform the UEPC BTS Arts Barriers to Participation Survey development. To assist in this effort, the USBE provided the UEPC team with their records of the schools participating in the program during the 2023-24 academic year (AY), information about whether LEAs had BTS Arts coaches, and information about points of contact at both the school and LEA levels.

#### *Interviews Informing Survey Development*

Although superintendents and arts directors from 10 LEAs and 33 principals were invited to participate in a virtual interview to inform the barriers survey, the participants in the interview were seven LEA-level staff members from across six districts, one of which was rural. The roles of these participants included superintendents, assistant superintendents, directors of curriculum and instruction, an elementary instructional arts specialist, and a principal from a school in a large non-rural school district. However, no administrators from charter schools or agencies chose to participate in these interviews. Virtual interviews with participants lasted 30-45 minutes and addressed questions about arts education in their school/district, their perspectives about the BTS Arts program, what they perceived to be the primary obstacles to participating in the program, the value they think BTS Arts might add to their current educational offerings, and what would need to change or what additional information they might need to consider participating in the future.

Interview transcripts were analyzed via a combination of inductive and deductive coding (Saldaña, 2016) that attended to prior information about potential barriers based on our review of the literature, prior UEPC evaluation findings, and partner consultation while also allowing for new codes about

previously unidentified barriers to be derived from the data. Then, these emergent codes were grouped by topic and summarized to arrive at a condensed set of barriers that could be used on the survey. Members of the UEPC team then did an internal review and discussion of these barriers to facilitate development and refinement of survey items. Then, the instrument was shared with program partners from the USBE, the University of Utah's College of Fine Arts, Sorenson Impact Institute, and BTS Arts endowed chairs from other universities who sat on the study advisory board to allow them to weigh in on the list of barriers before the survey was administered. Program partners from the USBE and the University of Utah's College of Fine Arts offered feedback. Finally, the UEPC team reviewed this feedback to inform their final revisions to the survey prior to administration.

## **Barriers Survey**

**Purpose & Logistics.** The primary goals of the barriers survey were to a) determine the relative importance of potential barriers to participation in the BTS Arts program, b) assess schools' general openness to participating in the program, and c) identify what might need to change to encourage future program participation. To accomplish these goals, respondents were first asked to:

- indicate their professional role/position and share information about their familiarity with the BTS Arts program,
- rate potential barriers, including those identified during the interviews, on a scale that ranged from 1 (Not a Barrier) to 4 (Major Barrier),
- rate their likelihood of applying to the program in the future on a scale from 1 (Very Unlikely) to 4 (Very Likely) and the extent to which overcoming the identified barriers would increase their likelihood of participation on a scale of 1 (Not at All) to 4 (To a Large Extent), and
- share information about additional barriers that were not identified in the survey and what would need to change, if anything, for them to participate in the future.

In addition to these categories of questions, respondents were asked to verify that they were not at a school that currently participated in BTS Arts or that they did not work at a district/LEA where all of the schools they support were participating in the program to ensure that those in the sampling frame included those intended. A copy of the barriers survey is provided in Appendix A for reference.

**Sampling.** BTS Arts participation data and contact information provided by the USBE was used to construct the sampling frame for the barriers survey. All schools that were not indicated as participating in the BTS Arts program during the 2023-24 academic year were included, along with superintendents and arts education contacts at districts or LEAs that had at least one school not participating in the program. In total, 190 schools and 29 LEAs were included in the sample.

**Sample of Respondents.** Table 5 shows the number of individuals who were invited to participate in the barriers survey as well as the number of respondents and response rate. As shown, a total of 17 district/LEA staff and 57 school principals completed the survey. There were a notable amount of responses from district/LEA staff and school principals who indicated that their schools were already participating in the BTS Arts program, so these individuals were routed to the end of the survey and are not included in the analysis.

**Table 5. Number of Responses to Barriers Survey**

Response Type	Invited to Complete Barriers Survey	Respondents	Response Rate
District/LEA Staff	54	17	31%
School Principals	190	57	30%

There were relatively more non-rural (71%) districts/LEAs represented than rural sites (29%). Furthermore, respondents from the schools were primarily from sites with 700 or fewer students in their enrollment (86%), were not Title I (75%), were not rural (72%), and were not charter schools (86%). Additional details can be found in Table 6 below.

**Table 6. Profile of the Schools Represented by Principals Who Responded to the Survey**

School -Level Variables	Count	Percent
<b>Title I</b>	14	25%
<b>Not Title I</b>	43	75%
<b>Rural<sup>8</sup></b>	16	28%
<b>Non-Rural<sup>9</sup></b>	41	72%
<b>Charter</b>	8	14%
<b>Non-Charter</b>	49	86%
<b>Enrollment &lt;700</b>	49	86%
<b>Enrollment 700-1000</b>	7	12%
<b>Enrollment &gt;1000</b>	1	2%

**Overview of Analysis Methods.** Descriptive statistics (e.g., percentages or means) were calculated for Likert-scale items. In addition, independent samples *t*-tests (for categorical variables) and Spearman’s correlation tests (for continuous variables) were calculated to determine if responses differed by characteristics of the respondent (i.e., district/LEA-level staff vs. school principals) or by characteristics of the schools (e.g., percent low-income). Qualitative analyses were conducted to identify themes in open-ended responses. The school-level variables that were included in these subgroup analyses are included in Appendix B.

## Findings

This findings section begins with the results regarding the level of familiarity with the program among district/LEA-level (i.e., superintendent) and school-level (i.e., principal) survey respondents. Following this is a summary of the barriers to participation in the BTS Arts program. An examination of respondents' likelihood of participating to the program with and without the presence of program barriers is subsequently provided. Finally, the analysis explores whether variations exist in program

<sup>8</sup> For the purposes of this study, rural schools represent those in the rural and town categories.

<sup>9</sup> For the purposes of this study, non-rural schools represent those in the city or suburb categories.

familiarity, likelihood of participating in the program, and barriers across different school-level variables such as enrollment count, location, and Title 1 status.

**Familiarity with the BTS Arts Program**

Respondents were asked how familiar they were with the BTS Arts program and its requirements. Table 7 shows the percentage of responses for each level of familiarity, distinguishing between district/LEA-level (e.g., superintendent) and school-level (e.g., principal) participants. It is noteworthy that most district/LEA respondents reported being moderately to very familiar with the BTS Art program and its requirements.

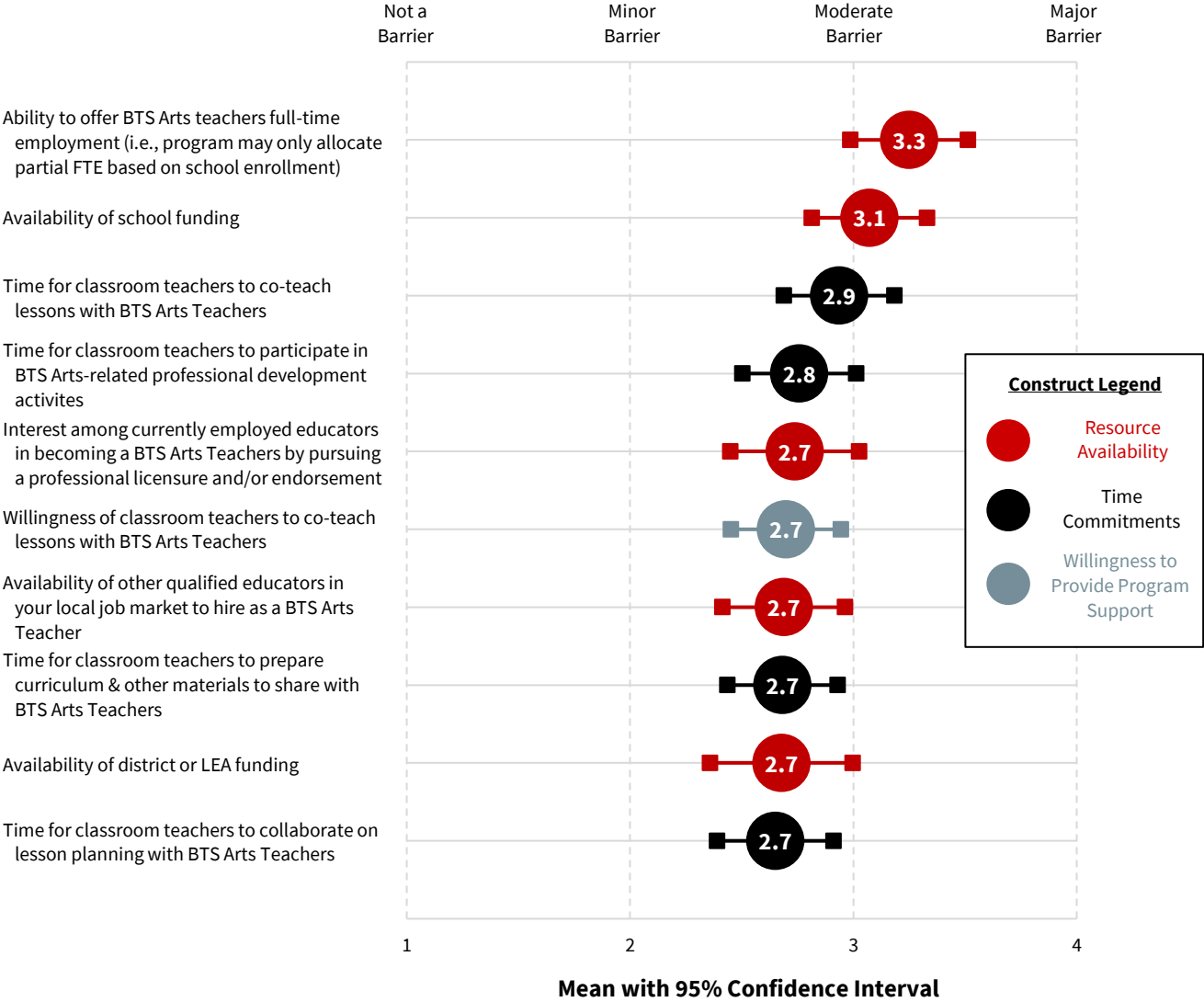
*Table 7. Survey Respondents’ Familiarity with the BTS Arts Program*

Response Options	District/LEA	Principal
<b>Not At All Familiar</b> (i.e., I’ve never heard of it)	0% (0)	4% (2)
<b>Slightly Familiar</b> (i.e., The name rings a bell)	6% (1)	19% (11)
<b>Moderately Familiar</b> (i.e., I generally understand the program goals and key components, but not specifics)	29% (5)	47% (27)
<b>Very Familiar</b> (i.e., I know a lot about the program goals, key components, and specific requirements)	59% (10)	30% (17)
<b>Did Not Answer</b>	6% (1)	0% (0)
<b>Total</b>	100% (17)	100% (57)

**Top Barriers to Participating in the BTS Arts Program**

To identify potential barriers, respondents were asked to evaluate the importance of 40 potential challenges (e.g., lack of knowledge, interest, resources, time constraints, feasibility, and support) to participating in the BTS Arts program. A comprehensive list of all barriers and their mean scores is provided in Appendix A. Figure 10 illustrates the mean scores for the top 10 reported barriers to participation in the BTS Arts program. These are reported in descending order. These top barriers are color coded according to the overarching constructs to which they apply. As depicted in Figure 10, the top 10 barriers predominantly revolve around resource and time-related obstacles.

**Figure 10. Top 10 Barriers to Participation in BTS Arts Program**



Respondents were also asked an open-ended question to describe any additional barriers to participation in the BTS Arts program that were not captured in the survey. Provided responses (*n* = 28) were analyzed qualitatively for common themes. Key themes that emerged from respondent comments are outlined below. The first three themes align with the survey items reported above.

- Funding/Budget Constraints:** This was the most frequently cited barrier in the open-ended responses. Many schools mention lack of funding or budget cuts as a major challenge in implementing the BTS Arts program.
- Scheduling/Time Constraints:** Several responses highlight the difficulty in finding time in the schedule for the BTS Arts program, given the existing demands on teachers and the need for collaboration. Concerns included adding more responsibilities or requirements to already overwhelmed teachers, especially with other initiatives and professional development taking priority.

- **Existing Arts Programs/Teachers:** A few respondents mention that they already have effective arts programs or teachers in place, and therefore do not see a need for the BTS Arts program.
- **Certification/Qualifications:** A couple of responses cite the difficulty in finding certified or qualified teachers as a barrier to participating in the BTS Arts program.
- **Lack of Interest/Awareness:** Some schools indicate a lack of interest in or awareness about the BTS Arts program, sometimes due to previous unsuccessful applications or a perception that the program may not align with their existing approach.
- **Small School Size:** Some respondents, particularly in rural areas, mention that their small size and low student enrollment make it challenging to justify and fund a dedicated BTS Arts program or coordinate their schedules with other schools if they were to participate.

It is important to note that these themes were often interrelated, and respondents described situations where multiple barriers factored into their decision not to participate in the program. For example, barriers related to school size and funding to support BTS activities were mentioned in tandem. Similarly, the presence of existing arts teachers in schools and challenges to participation based on art educator qualifications were often described as being interrelated. In the quotes below, respondents describe how these barriers play out in practice:

- *Our biggest barriers are funding and scheduling. Our district was paying 10% of the 20% and the school made up the rest. However, this year we have had major budget cuts, and the district is not able to pay the additional 10% so it all falls on the schools. Principals want the program, but they are having a hard time shifting money to pay for this when they have so many other needs. With this comes the major barrier of having to share a teacher with another school. Many of our schools are just under the numbers to receive a 0.75 FTE, this makes it very difficult for them to schedule with just a 0.5 FTE and puts a lot of strain on the BTS teacher to meet the requirements at both schools. (District Superintendent)*
- *Our major barrier was money. Our school is so small and is shrinking, so we continue losing funding each year. (School Principal)*
- *Both our music and art teachers are very familiar with BTS and would be happy to meet the requirements of the program. The only reason we don't participate is because we have already hired the teachers and pay them a full-time salary. We don't have time in our day to add theater or another type of art teacher and instruction and BTS doesn't allow us to apply and use funds to pay our existing teachers.<sup>10</sup> (School Principal)*
- *We are such a small school and wear many hats so dedicating time and funds to this program was challenging as we have the components necessary already in place that supplement our curriculum and emphasize our cultural focus. (Charter School Director)*

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<sup>10</sup> Note that in the current BTS Arts statute, as of FSY 2024-25 BTS funds can be used to support existing arts programs and staff. This misconception is likely a result of previous program requirements that BTS Arts program activities not supplant existing arts programs at participating schools.

- *Adjust how the collaboration piece looks. The side-by-side model is great but often times it overwhelms classroom teachers thinking they have to do one more thing. Collaboration can be done in many different ways and be successful, let schools/LEAs decide which works best for their situation. (District Superintendent)*
- *One of the schools is under construction at present and has absolutely no space to house a specialist [i.e., BTS Arts educator], but is thinking about it for when the school is finished. The other school is a smaller, rural school and is in a different neighboring town from the other schools so if the BTS [Arts educator] were to split between two schools it would be logistically difficult. Also, they have an art teacher who could not become a BTS [Arts educator], and she would have to lose her job in order to make room for a BTS specialist. (District Superintendent)*
- *A culture shift will have to occur in classroom teachers to understand the value of BTS education and get them on board with collaborating with the Arts Specialists [i.e., BTS Arts educator] to implement the system with fidelity. (District Superintendent)*

### **Likelihood of Applying to the BTS Arts Program**

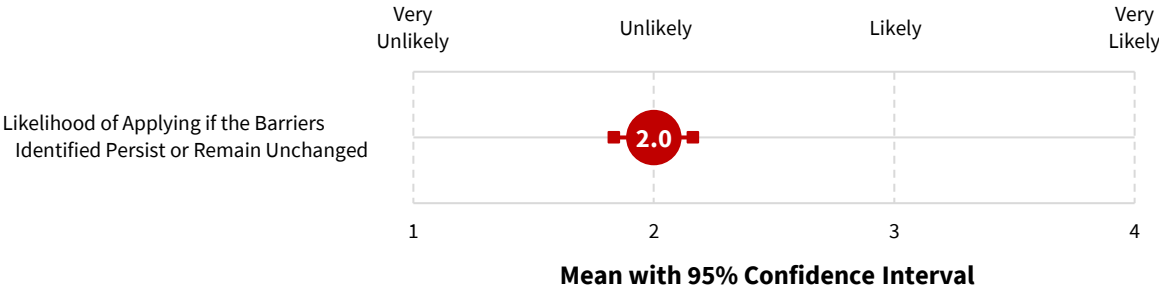
Respondents were queried about their likelihood of future application to the program through two questions. The first question asked was: "If the barriers identified were to persist or remain unchanged, how likely do you think your [school/LEA] would be to apply to BTS Arts in the future?" Response options spanned from "Very Unlikely" to "Very Likely." Table 8 shows the distribution of respondents across these options. As the results in Table 8 and Figure 11 illustrate, respondents were generally unlikely to apply for participation in BTS if the current barriers remained. Only 22% endorsed the possibility that they might apply with no changes to their current barriers to program participation.

**Table 8. Likelihood of Applying to BTS Arts Program (If Barriers Remain)**

<b>Likelihood</b>	<b>% (n)</b>
Very Unlikely	22% (15)
Unlikely	55% (37)
Likely	22% (15)
Very Likely	0% (0)
Total	100% (67)



**Figure 11. Mean Likelihood of Applying to BTS Arts Program, If Barriers Remain**

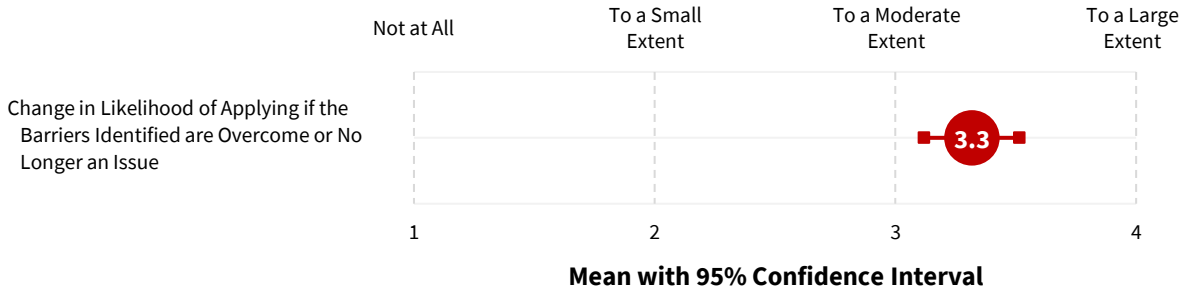


The second question about barriers and the likelihood of applying asked “If the barriers identified were overcome or were no longer an issue, to what extent do you think that would increase the likelihood that your [school/LEA] would apply to BTS Arts in the future?” Response options ranged from “Not at all” to “To a large extent.” Table 9 shows the distribution of respondents across these options. Figure 12 shows that the mean score fell between the "To a moderate extent" and "To a large extent" options.

**Table 9. Change in Likelihood of Applying to BTS Arts Program, If Barriers are Removed**

Likelihood Change	% (n)
Not at all	2% (1)
To a Small Extent	17% (11)
To a Moderate Extent	30% (20)
To a Large Extent	52% (34)
Total	100% (66)

**Figure 12. Mean Change in Likelihood of Applying to BTS Arts Program, If Barriers are Removed**



The results from Table 9 and Figure 12 suggest that if perceived barriers could be overcome, the likelihood of a school or LEA applying to participate in BTS Arts are substantially increased. This highlights the importance of identifying and overcoming barriers to the growth of the BTS Arts program.

## School-Level Differences

Finally, we investigated whether there were school-level differences in the perception of barriers and the likelihood of applying to participate in BTS Arts. Because district/LEA-level respondents ( $n = 17$ ) do not represent a single school, they were removed from the analyses. Thus, the following analyses were conducted with school-level participants (i.e., principals) whose responses were sufficiently complete to permit the analyses ( $n = 56$ ).

School-level factors that were considered included Title I status, rurality, charter status, and enrollment. Independent-samples  $t$ -tests were conducted to test the significance of differences across categorical school-level variables (Title 1 status, school location, charter status, and enrollment category). Spearman’s correlation tests were used for numerical (i.e., percentage) school-level variables (low-income, English learner, special education, and race/ethnicity). We only report statistically significant relationships here ( $p < .05$ ) to manage the volume of data.

Familiarity with the program was not significantly associated with any of the school-level variables. Similarly, there weren’t any statistically significant associations between school-level factors and either of the two likelihood questions (“apply if barriers remain” or “apply if barriers removed”). However, there were some significant school-level differences related to importance of certain barriers. The remainder of the analysis focuses on these significant associations between school-level differences and the barriers.

**Title 1 Status.** 14 out of 56 school-level respondents (25%) were from Title 1 schools. Table 10 shows the barriers for which the mean importance scores differ significantly between Title 1 and non-Title 1 schools.

**Table 10. Statistically Significant Differences in Barriers for Title 1 and Non-Title 1 Schools**

Barrier	Not Title 1	Title 1	$p$ -value
Ability to offer BTS Arts teachers full-time employment (i.e., program may only allocate partial FTE based on school enrollment)	2.94	3.86	<.01
Availability of other qualified educators in your local job market to hire as a BTS Arts Teacher (i.e., a professional educator license in Utah, with either a K-12 art-form specific endorsement or an elementary art-form specific endorsement)	2.41	3.15	.01

Note: Survey respondents rated each item using a 4-point scale that included (1) Not a Barrier, (2) Minor Barrier, (3) Moderate Barrier, and (4) Major Barrier. Independent-samples  $t$ -tests were conducted to determine which differences between the two groups were statistically significant ( $p < .05$ ).

The ability to offer BTS Arts teachers full-time employment and the availability of other qualified educators in the local job market who could be hired as a BTS Arts Teacher were notably more pronounced barriers in Title 1 schools. The lack of ability to offer BTS teachers full-time employment was seen as a major barrier among Title I schools (mean rating = 3.86), but it was still a moderate barrier for non-Title 1 schools (mean rating = 2.94).

**Location.** Survey respondents' schools were categorized as either rural (all rural and town categories;  $n = 15$ ) or city (all city and suburb categories;  $n = 41$ ) according to USBE school population size categories. Table 11 shows the barriers for which the mean importance scores differ significantly between city and rural schools.

**Table 11. Statistically Significant Differences in Barriers for Rural and City Schools**

Barrier	City	Rural	$p$ -value
Ability to offer BTS Arts educators full-time employment (i.e., program may only allocate partial FTE based on school enrollment)	3.06	3.67	.03
Availability of other qualified educators in your local job market to hire as a BTS Arts educator (i.e., a professional educator license in Utah, with either a K-12 art-form specific endorsement or an elementary art-form specific endorsement)	2.43	3.30	.04

Note: Survey respondents rated each item using a 4-point scale that included (1) Not a Barrier, (2) Minor Barrier, (3) Moderate Barrier, and (4) Major Barrier. Independent-samples t-tests were conducted to determine which differences between the two groups were statistically significant ( $p < .05$ ).

Similar to the results for Title I schools, the ability to offer BTS Arts educators full-time employment and the availability of other qualified educators in the local job market to hire as a BTS Arts educator were notably more pronounced barriers in schools located in rural communities. Also, similar to the results for Title I schools, the mean levels of the ratings indicate that the inability to offer BTS Arts educators full-time employment was seen as a major barrier for rural schools (mean rating = 3.67) and as a moderate barrier for city schools (mean rating = 3.06).

**Charter status.** 8 out of 56 school-level respondents (14%) were from charter schools. Table 12 shows the barriers for which the mean importance scores differ significantly between charter and non-charter (traditional) schools.

**Table 12. Statistically Significant Differences in Barriers for Charter and Non-Charter Schools**

Barrier	Non-Charter	Charter	$p$ -value
Availability of school funding	3.40	2.00	.04
Insufficient space for BTS Arts instruction	2.58	1.50	<.01
Ability to coordinate BTS Arts educators' time across multiple schools	2.39	1.43	<.01

Note: Survey respondents rated each item using a 4-point scale that included (1) Not a Barrier, (2) Minor Barrier, (3) Moderate Barrier, and (4) Major Barrier. Independent-samples t-tests were conducted to determine which differences between the two groups were statistically significant ( $p < .05$ ).

The availability of school funding, insufficient space for BTS Arts instruction, and the ability to coordinate BTS Arts educators' time across multiple schools were more significant barriers for principals representing non-charter schools as compared to those representing charter schools among the survey respondents. Charter schools saw these three barriers as somewhere between a "minor" barrier and not a barrier, whereas non-charter schools saw the barriers as between

“moderate” and “major” for funding availability and as between “minor” and “moderate” for the other two.

**Enrollment.** Schools were categorized into 2 groups based on their enrollment size: schools with fewer than 700 students ( $n = 48$ ) and schools with more than 700 students ( $n = 7$ ). Table 13 shows the barriers for which the mean importance scores differ significantly based on the school enrollment count.

**Table 13. Statistically Significant Differences in Barriers for < 700 and 700+ Schools**

Barrier	< 700	≥ 700	<i>p</i> -value
Time to complete required administrative tasks (e.g., paperwork, reporting)	2.19	1.50	.04
Insufficient or lack of belief in the value of arts education & integration among school administrators	1.22	1.00	.01
Insufficient or lack of belief in the value of arts education & integration among students	1.21	1.00	.01
Insufficient or lack of belief in the value of arts education & integration among families	1.20	1.00	.02

Note: Survey respondents rated each item using a 4-point scale that included (1) Not a Barrier, (2) Minor Barrier, (3) Moderate Barrier, and (4) Major Barrier. Independent-samples *t*-tests were conducted to determine which differences between the two groups were statistically significant ( $p < .05$ ).

Time to complete required administrative tasks (e.g., paperwork, reporting), insufficient or lack of belief in the value of arts education & integration among school administrators, students, and families were more salient barriers to schools with smaller enrollment counts. The mean ratings for this item were all fairly low, often close to the “not a barrier” score. That said, there were significant differences between smaller and larger schools. Whereas larger schools generally did not see these as barriers, smaller schools saw them as somewhere between “not a barrier” and a “minor barrier.”

**Low-income status.** Table 14 shows the barriers that have a significant bivariate correlation with low-income status as defined by the percent of students at the school who qualify for free or reduced-price lunch. The values in Table 14 under the “Correlation Coefficients” column range from -1 to +1. When the values are positive, it indicates that schools with a larger low-income student population tend to see the barrier as more important. When the values are negative, it indicates that schools with a larger low-income student population tend to see the barrier as *less* important.

**Table 14. Statistically Significant Differences in Barriers for Lower Income Schools**

Barrier	Correlation Coefficients	p-value
Ability to offer BTS Arts educators full-time employment (i.e., program may only allocate partial FTE based on school enrollment)	.44	.00
Understanding of potential BTS Arts implementation strategies or models in practice	.36	.01
Availability of other qualified educators in your local job market to hire as a BTS Arts Teacher (i.e., a professional educator license in Utah, with either a K-12 art-form specific endorsement or an elementary art-form specific endorsement)	.31	.04
Ability to coordinate BTS Arts educators' time across multiple schools	.41	.01
Willingness of classroom teachers to co-teach lessons with BTS Arts educators	-.31	.03

Note: Survey respondents rated each item using a 4-point scale that included (1) Not a Barrier, (2) Minor Barrier, (3) Moderate Barrier, and (4) Major Barrier. A bivariate correlation between the barrier ratings and the percentage of low-income students was calculated to determine which barriers significantly varied based upon a school's low-income percentage ( $p < 0.05$ ).

Four of the barriers were significantly positively correlated with the percentage of students in a school qualifying for free or reduced-price lunch. Lower-income schools were more likely to report barriers in: 1) the ability to offer full-time employment to BTS Arts educators, 2) understanding how to implement BTS Arts, 3) the availability of qualified educators in the local market, and 4) the ability to coordinate BTS Arts educators' time across multiple schools. However, the significant negative correlation in the last row of Table 14 indicates that lower-income schools were *less* likely to report that the willingness of classroom teachers to co-teach lessons with BTS Arts educators was a barrier.

**English-learner status.** Table 15 shows the barriers that showed a significant bivariate correlation with English learner status, defined as the percentage of students identified as English learners.

**Table 15. Statistically Significant Differences in Barriers for Schools with More English Language Learning Students**

Barrier	Correlation Coefficients	p-value
Ability to coordinate BTS Arts educators' time across multiple schools	.32	.03
Willingness of school administrators to provide leadership & implementation support	.34	.02

Note: Survey respondents rated each item using a 4-point scale that included (1) Not a Barrier, (2) Minor Barrier, (3) Moderate Barrier, and (4) Major Barrier. A bivariate correlation between the barrier ratings and the percentage of low-income students was calculated to determine which barriers significantly varied based upon a school's percentage of English Language Learning (ELL) students ( $p < 0.05$ ).

Schools with a higher percentage of students identified as English learners were more likely to see barriers in 1) the ability to coordinate BTS Arts educators’ time across multiple schools and 2) the willingness of school administrators to provide leadership and implementation support.

**Special education status.** Table 16 shows the barriers that showed a significant bivariate correlation with the percentage of students identified as receiving special education services.

**Table 16. Statistically Significant Differences in Barriers for Schools with More Special Education Students**

Barrier	Correlation Coefficients	p-value
Time for classroom teachers to co-teach lessons with BTS Arts educators	-.33	.02
Understanding of the BTS Arts application process	-.31	.03
Time to complete required administrative tasks (e.g., paperwork, reporting)	-.34	.03
Knowledge of the program among school administrators	-.30	.04
Knowledge of the program among district/LEA leadership and/or staff	-.31	.03

Note: Survey respondents rated each item using a 4-point scale that included (1) Not a Barrier, (2) Minor Barrier, (3) Moderate Barrier, and (4) Major Barrier. A bivariate correlation was calculated to determine which barriers significantly varied based upon a school’s percentage of students receiving special education services ( $p < 0.05$ ).

Note that all the correlations in Table 16 are negative. This indicates that schools with a higher percentage of students receiving special education services were *less* likely to see barriers in 1) the time for classroom teachers to co-teach lessons with BTS Arts educators, 2) an understanding of the BTS Arts application process, 3) the time to complete required administrative tasks (e.g., paperwork, reporting), 4) knowledge of the program among school administrators, and 5) knowledge of the program among district/LEA leadership and/or staff.

**Race/Ethnicity** Table 17 shows the only barrier that has a significant bivariate correlation with the percentage of students identified as White.

**Table 17. Statistically Significant Differences in Barriers for Schools with Higher Percentage of White Students**

Barrier	Correlation Coefficient	p-value
Time to complete required administrative tasks (e.g., paperwork, reporting)	-.36	.02

Note: Survey respondents rated each item using a 4-point scale that included (1) Not a Barrier, (2) Minor Barrier, (3) Moderate Barrier, and (4) Major Barrier. A bivariate correlation between the barrier ratings and the percentage of students identified as White was calculated to determine which barriers significantly varied based upon a school’s percentage of students identified as White ( $p < 0.05$ ).

Schools with a higher percentage of students identified as White were *less* likely to see the time to complete required administrative tasks (e.g., paperwork, reporting) as a barrier.

## 5 | Discussion

In this report we have presented findings regarding the impact of the BTS Arts program and perceived barriers to the adoption of the BTS Arts program among schools and LEAs. Here we first provide a summary of each of the primary research findings related to analysis of effective practices and outcomes, and barriers to adoption and implementation. Next, we address areas of improvement for implementation, the BTS Arts Assurance Survey, and ways to consider mitigating the barriers to adoption and implementation.

### Summary of Findings

The analysis of effective practices was conducted using responses to an annual BTS Arts Assurance Survey conducted by the Sorenson Impact Institute. In this survey, BTS Arts educators and principals evaluated their schools' level of BTS Arts implementation on a variety of dimensions: the average amount of weekly exposure to BTS Arts education by students, the level of participation in BTS Arts instruction by classroom teachers, etc. The surveys also enabled an analysis of the number of years that a school participated in BTS Arts.

Although some measures showed high levels of implementation (percent of students in a school with access to BTS Arts instruction, ratings of the overall quality and regularity of arts integration), other measures indicated only moderate implementation (typical weekly exposure to BTS Arts instruction, sharing of curriculum maps with BTS Arts educators) and two showed low levels of implementation (e.g., regular meetings between BTS Arts educators and classroom teachers, level of classroom teacher participation during arts instruction). These measures of BTS Arts implementation were joined to school-level average scores on end-of-year assessments of science, math, and reading as well as the school rate of chronic absenteeism. Results indicated that, for every year that a school participated in BTS Arts, the school's average score on math, reading, and science assessments increased between 0.023 and 0.027 standard deviations on the student-level assessment scale. This increase was statistically significant at  $p < .001$  but is modest in size. Unfortunately, none of the other measures of implementation were significantly related to school differences in average assessment scores. The analysis of the relation between BTS Arts implementation and chronic absenteeism was frustrated by the unexpected and dramatic rise in chronic absenteeism across the state that coincided with the 2021-2023 school years included in this study.

The findings of the UEPC Barriers to the BTS Arts program adoption survey shed light on why some schools and districts are not participating in the BTS Arts program. Our analysis encompassed consideration of familiarity with the program, top barriers to participation, likelihood of application, and school-level differences. Here we provide a summary of the most pronounced barriers.

**Resources and Time:** Resource and time-related barriers emerged as predominant obstacles to participation in the BTS Art Program. Among the barriers presented to participants, the greatest was the inability to offer full-time employment to BTS Arts teachers. Availability of school funding, time for classroom teachers to co-teach, and time for classroom teachers to participate in professional development were other barriers rated as important. Our



qualitative analysis of the available open-ended survey responses also revealed similar themes of funding limitations, scheduling constraints, and concerns about teacher workload.

**Familiarity with the Program:** Our results indicate a notable discrepancy in familiarity with the BTS Art Program between district/LEA-level and school-level participants. Whereas 59% of District/LEA-level respondents indicated they were “very familiar” with BTS, only 30% of school-level participants did so.

**Likelihood of Application:** Respondents' assessments of their likelihood of applying to the BTS Arts program in the future provide valuable insights into the perceived impact of existing barriers. While 77% of respondents reported they would be unlikely to apply if the barriers remained, 52% indicated that their likelihood of applying to participate in BTS Arts would change “to a large extent” if barriers were overcome.

**School-Level Differences:** Our analysis of school-level differences across various school characteristics revealed distinct patterns in the perceived importance of barriers that may affect a school’s or LEA’s decision to apply for the BTS Arts program. Title I schools, rural schools, and schools with a higher percentage of low-income students perceived two barriers as more significant obstacles compared to non-Title I, non-rural schools, and schools with a lower percentage of low-income students: the ability to offer BTS Arts teachers full-time employment and a local job market with qualified educators. Schools with a higher percentage of English language learners tended to see two obstacles as more important compared to schools with a lower percentage: coordinating BTS Arts teachers’ time across multiple schools, and the willingness of school administrators to provide support. Conversely, schools with a higher percentage of students receiving special education services tended to see several factors as *less* of an obstacle compared to schools with a lower percentage: time to complete required administrative tasks, time for classroom teachers to co-teach, knowledge of the program among school or district administrators, and an understanding of the BTS Arts application process. Time to complete required tasks was seen as *less* of a barrier for schools with a higher percentage of White students compared to schools with a lower percentage. Charter schools were *less* likely than non-charter schools to see funding availability or space as barriers.

## Considerations

The BTS Arts program continues to serve many students statewide. Many schools and LEAs in Utah have emerged as active participants in the program. The BTS Arts program has also uniquely forged partnerships between the Utah State Board of Education, LEAs, schools, universities, and advocates for arts in schools. Here we turn our attention to potential considerations that may support both implementation, adoption, and evaluation of the effectiveness of the program, including decisions regarding the model and expectations for fidelity to the model.

The primary barriers to participation in the BTS Arts program were 1) an inability to offer BTS Arts educators full-time employment and availability of school funding and 2) time for classroom teachers to co-plan, co-teach lessons, or engage in professional development with BTS Arts educators.

Resource availability (e.g., staffing and program funding) continues to be a primary barrier to schools and LEAs opting to apply for and participate in the BTS Arts. With this in mind, there are opportunities to consider how availability of resources may support meeting unmet expectations for student exposure to BTS Arts instruction. For instance, currently some schools, particularly those with fewer than 700 students, only receive a 0.5 FTE BTS Arts educator. While continued expansion of collaboration with community organizations, arts institutions, philanthropic organizations, and other stakeholders may support initial investments, it is unclear if these types of funding streams are sustainable or effective in supporting the long-term needs for hiring and retaining teaching staff.

Similar to previous evaluations about the implementation of the BTS Arts program, there remained concerns regarding the scarcity of time, particularly time to co-plan and co-teach. Given the findings regarding the infrequency and impact of the reported co-teaching, there seems to be an opportunity to revisit the expectation for and benefit of the co-teaching model. Notably, many schools indicated that expectations for fidelity to co-teaching was a barrier to their participation in BTS Arts. While occurring infrequently now, continued exploration of the use of shared curriculum maps or other instructional supports between core content subjects and Arts core/BTS Arts educators may increase opportunities to accomplish integrated lessons.

Next, opportunities remain to promote the BTS Art Program and raise awareness among stakeholders, including parents and students, and how enhancing interest may increase participation. For example, both awareness and understanding of the program among school leaders may increase through the provision of additional materials or resources to support their arts programming (e.g., district arts specialists or directors of curriculum and instruction). Sharing examples of BTS Arts activities that have been successfully implemented in a variety of contexts, as well as examples of how schools/LEAs were able to fund, staff, and coordinate art activities in practice would be beneficial. Such efforts could also help to combat perceptions among school leaders that BTS Arts is not feasible in a unique school context .

In conclusion, addressing the identified barriers and implementing targeted strategies to enhance resource availability, lower classroom teacher time costs, and raise stakeholder engagement can increase the potential impact of the BTS Art program in schools. By prioritizing collaboration among practitioners and advocates, innovation, and flexibility in program model delivery, there are possibilities to create a supportive environment conducive to arts education and student success.

## **Future Research and Evaluation to Support Program Implementation and Impact**

There are positive findings that offer an opportunity to further explore why factors regarding implementation may positively impact student achievement. For instance, although none of the individual methods or models of BTS Arts instruction were significantly related to student achievement on end-of-year assessments, a school's BTS Arts program "maturity" – the number of years that the program was in effect at the school – was positively related to assessment scores. Consistent with earlier evaluations of BTS Arts (e.g., Rorrer et al., 2012), this effect was modest: an increase of approximately 0.025 standard deviations for every year that the program was in effect.

Further research is needed to explore the possible mechanisms by which program maturity might lead to greater efficacy: BTS Arts educators benefiting from greater experience and previous years' preparations, administrators benefiting from more efficient procedures, etc. Given the modest size of the relationship between program maturity and student assessment, alternative outcomes such as student creativity or classroom engagement could be explored as meaningful outcomes of BTS Arts programs.

Next, although none of the BTS Arts implementation measures in the existing BTS Arts Assurance Survey showed a significant relationship to assessment scores, some of those measures could be modified with the goal of improving their clarity and reliability. In addition, some new measures could be added. These are discussed further in the "Refinement of Data Collection" section.

## **Refinement of Existing Data Collection Instruments and Processes**

### ***Proposed Revisions to BTS Arts Assurance Surveys***

The BTS Arts Assurance Surveys were critical to conducting this study and preparing this research report. The surveys targeted many important aspects of implementation, including those related to the models of BTS Arts Instruction such as "Side-by-side" and "Collaboration for Integration" discussed in the BTS Arts Learning Handbook (2022-23). Furthermore, participation rates for the surveys were outstanding, as illustrated by the high number of BTS Arts educators and principals who completed them (see Table 1). However, to maximize the utility of the Assurance Survey to inform evaluative and improvement efforts, there are a few revisions warranted.

#### **Measuring Collaboration**

In the current version of the BTS Arts Assurance Survey, collaboration between BTS Arts educators and classroom teachers is measured by 1) whether there are regular meetings between BTS Arts educators and classroom teachers, 2) the degree to which BTS Arts educators receive curriculum maps at the beginning of the school year that cover the grade levels they expect to teach, and 3) an overall rating of the level of arts integration at the school. These measures provide indirect evidence of collaboration, but we recommend that more direct measures be added. In addition to asking about whether there are regular meetings (which is answered yes or no), all BTS Arts educators could be asked the typical number of times they met with classroom teachers, with guideposts for common answers: 36 (weekly), 9 (monthly). BTS Arts educators could also be asked to evaluate the overall quality of collaboration with classroom teachers at a school using a scale such as "Minimal," "Developing," "Satisfactory," and "Excellent."

#### **Clarify Frequency of Meetings between BTS Arts Educators and Classroom Teachers**

The Assurances survey asks respondents to indicate how frequently BTS Arts educators met with classroom teachers. There are some standard options such as weekly or monthly, but it was more common for respondents to write in an option that was difficult to convert to a number for analysis. For example, a common response was "bi-monthly," which unfortunately is an ambiguous term that is

defined as both twice per month (18 meetings per year) and once every two months (4.5 meetings per year), which differ by a factor of 4, introducing considerable noise into the data. We suggest phrasing this question in terms of the respondent's best guess for the total number of meetings during the school year. To help respondents with their answer, some guideposts for common answers could be provided: 36 (weekly), 9 (monthly). The respondent would need to respond with a number. No text option should be provided.

### **Clarify Level of Exposure to BTS Arts Instruction**

To capture the level of exposure of students to BTS Arts instruction, two questions are currently asked: 1) "How frequently do students at your school receive BTS Arts instruction?" with options such as "Less than once per month," "Once per week," etc. and 2) "For what duration of the school year do students at your school receive BTS Arts instruction?" with response options such as "Throughout the entire school year" or "For one semester." Ambiguity is introduced through the combination of these two questions, such as when a respondent answered "Every other quarter once a week" to the first question and "For one semester" to the second question. Based on the first question, students attended weekly for half the year, so around 18 classes (there are 36 weeks in the school year). Generally, the answer to the second question -- "For one semester" -- would lead to a rule where the frequency reported in the first question is halved because a semester is only half of the school year. In this case, however, it would be better to ignore the answer to the second question and rely only on the first question. Other complications arise when insufficient detail is provided to permit conversion to a number. For example, one respondent answered "2 weeks on, 6 weeks off," suggesting participation during 2 of every 8 weeks, but not clarifying frequency of meeting during each week: Once per week? Without that detail, no estimate of exposure to BTS is possible. A final source of complexity is that lesson frequency often depended on grade level (e.g., different frequencies for kindergartners and 5th graders). To reduce this confusion, we suggest using a single item that asks respondents for their best estimate of the total number of BTS Arts instructional sessions attended by a typical student over the entire year, with some guideposts such as "36 = weekly instruction", "18 = weekly instruction for half the year", "9 = monthly instruction", etc. The respondent would need to respond with a number; no text option should be provided. This could be asked separately for kindergartners, students in grades 1-3, and students in grades 4-6.

### **Collect Information about BTS Arts Educator FTE**

Given the number of BTS Arts educators who report working at multiple schools (see Table 1), the lower-than-expected exposure of students to BTS Arts instruction (see Figure 2), and the importance of offering full-time employment in the barriers analysis (see Figure 10), a BTS Arts educator's assignment in terms of a fraction of full-time employment (FTE) is an important variable. Although not currently collected on the BTS Arts Assurance Survey, this could be added in future versions so that its role in implementation and outcomes can be understood.

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# Appendix A: Barriers Survey Questions and Mean Scores

## Familiarity with BTS Arts

How familiar are you with the BTS Arts program and its requirements?

- Not At All Familiar (i.e., I've never heard of it)
- Slightly Familiar (i.e., The name rings a bell)
- Moderately Familiar (i.e., I generally understand the program goals and key components, but not specifics)
- Very Familiar (i.e., I know a lot about the program goals, key components, and specific requirements)

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How familiar are leadership at schools within your district or LEA that serve elementary students and do not participate in BTS Arts with the program and its requirements?

- Not At All Familiar (i.e., I expect they've probably never heard of it)
- Slightly Familiar (i.e., I expect that the name would ring a bell)
- Moderately Familiar (i.e., I expect that they would generally understand the program goals and key components, but not specifics)
- Very Familiar (i.e., I expect that they would know a lot about the program goals, key components, and specific requirements)
- I don't know.

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## Program Summary

Please take a moment to review the following summary of the BTS Arts program and its key components. More detailed information can be found at <https://www.btsartsimpact.com/> and in the [BTS Arts Handbook](#).

Questions about your perception of the program will be asked on the next few pages.

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The Beverly Taylor Sorenson Arts Learning Program (BTS Arts) provides arts-integrated instruction to elementary students to promote student performance in every subject, from language arts and social studies to math and science.

The program is currently available statewide to elementary and charter schools, grades K-6.

BTS Arts collaborates with the Utah State Board of Education (USBE), Utah Division of Arts & Museums, Utah PTA, higher education institutions, and other community organizations to provide children across the state with arts-rich educational opportunities.

## Examples

- Funding arts educators to support regularly scheduled fine **arts instruction**.
- Funding district-level coaches to directly support **arts integration activities** at participating schools.

Hiring additional arts educators to **ensure greater access** to arts instruction (e.g., for students in Special Education classes).
- Hiring staff to **build the capacity of para-professionals** to provide integrated arts instruction across elementary schools.
- Supporting **professional learning activities for classroom teachers** (e.g., dedicated training days, co-teaching, or side-by-side collaboration with BTS Arts Teachers).

### Application & Requirements

Local Education Agencies (LEAs) apply annually for BTS Arts funding.

Currently, awarded schools and/or LEAs provide a 20% funding match to support the program.

### Support & Management

LEAs collaborate with schools to determine how to implement the BTS Arts program in their context.

BTS Arts Teachers are hired by LEAs and are supervised by their individual school administrators.

USBE partners with Utah universities and colleges to provide professional development for BTS Arts Teachers and other educators related to arts instruction and integration.

### BTS Arts Funding: How it Currently Works

Grant awards currently fund up to 80% of the salary and benefits of the arts educators and LEAs are required to provide the remaining balance of at least 20%. Grants for an individual arts educator are also capped. Many school community councils may use School Land Trust funds available to them as part of the required matching funds by including arts integration as part of their school improvement plan. Title I funds may also be used for the 20%, provided arts integration is outlined as a teaching strategy to improve student achievement.

## Sharing Perceptions on Barriers to Participation

There are a variety of reasons why schools may choose not to participate in the BTS Arts program. Please rate the extent to which you perceive the following factors as barriers to BTS Arts participation at [your LEA/District/School].

Note: If you are unsure or don't have enough information to know whether a factor was a barrier to participation, please select "I don't know."

### Program Knowledge & Understanding

At [your LEA/District/School], how much of a barrier were the following factors to participation in the BTS Arts program?

	(1) Not a Barrier	(2) Minor Barrier	(3) Moderate Barrier	(4) Major Barrier	Mean Response
Knowledge of the program <b><u>among district/LEA leadership and/or staff</u></b>					1.5
Knowledge of the program <b><u>among school administrators</u></b>					1.7
Understanding of potential <b><u>BTS Arts implementation strategies or models in practice</u></b>					2.0
Understanding of the <b><u>BTS Arts application process</u></b>					2.1

### Valuing Among Partners,

At [your LEA/District/School], how much of a barrier were the following factors to participation in the BTS Arts program?

Insufficient or lack of belief in the value of arts education & integration among...

	(1) Not a Barrier	(2) Minor Barrier	(3) Moderate Barrier	(4) Major Barrier	Mean Response
...district/LEA leadership and/or staff					1.2
...school administrators					1.3
...classroom teachers					1.6
...school community council members					1.4
...families					1.2
...students					1.2

## Resource Availability

At [your LEA/District/School], how much of a barrier were the following factors to participation in the BTS Arts program?

	(1) Not a Barrier	(2) Minor Barrier	(3) Moderate Barrier	(4) Major Barrier	Mean Response
Availability of <b>school funding</b>					3.1
Availability of <b>district or LEA funding</b>					2.7
<b>Sufficiency of existing staffing supports</b> for arts education & integration (i.e., no need for additional support)					2.5
Interest among <b>currently employed educators at</b> [your LEA/District/School] in becoming a BTS Arts Teacher by pursuing a professional licensure and/or endorsement					2.7
Availability of <b>other qualified educators in your local job market</b> to hire as a BTS Arts Teacher (i.e., a professional educator license in Utah, with either a K-12 art-form specific endorsement or an elementary art-form specific endorsement)					2.7
Ability to offer BTS Arts teachers <b>full-time employment</b> (i.e., program may only allocate partial FTE based on school enrollment)					3.3
Desire for <b>more generalized or flexible staffing support</b> within schools, as opposed to the specific and specialized support offered by BTS Arts Teachers					2.5
<b>Insufficient space</b> for BTS Arts instruction					2.5
<b>Insufficient materials and supplies</b> for BTS Arts instruction					2.1

## Feasibility of Implementation

At [your LEA/District/School], how much of a barrier were the following factors to participation in the BTS Arts program?

	(1) Not a Barrier	(2) Minor Barrier	(3) Moderate Barrier	(4) Major Barrier	Mean Response
Ability to <b>adhere to BTS Arts program requirements</b>					2.1
Integration of BTS Arts instruction with <b>core instruction &amp; curricular requirements</b>					2.0

Integration of BTS Arts instruction with <b>existing arts programming</b>					1.8
Integration of BTS Arts instruction with <b>other school-level programs and initiatives</b>					2.0
Integration of BTS Arts instruction with <b>other district-/LEA-level programs and initiatives</b>					1.8
Integration of BTS Arts instruction into <b>existing school(s) schedules</b>					2.4
Ability to <b>coordinate BTS Arts Teachers' time across multiple schools</b>					2.3

Please describe the **existing arts programming** that has been a barrier to BTS Art participation at [your LEA/District/School].


Please describe the **other school-level programs and initiatives** that have been barriers to BTS Art participation at [your LEA/District/School].


Please describe the **other district-/LEA-level programs and initiatives** that have been barriers to BTS Art participation at [your LEA/District/School].


### Time Commitments

At [your LEA/District/School], how much of a barrier were the following factors to participation in the BTS Arts program?

	(1) Not a Barrier	(2) Minor Barrier	(3) Moderate Barrier	(4) Major Barrier	Mean Response
Time to complete required <b>administrative tasks</b> (e.g., paperwork, reporting)					2.0
Time to engage in the <b>hiring &amp; onboarding</b> of BTS Arts Teachers					2.2

Time for classroom teachers <b><u>to prepare curriculum &amp; other materials to share</u></b> with BTS Arts Teachers					2.7
Time for classroom teachers <b><u>to collaborate on lesson planning</u></b> with BTS Arts Teachers					2.7
Time for classroom teachers <b><u>to integrate arts into core instruction</u></b>					2.6
Time for classroom teachers <b><u>to co-teach lessons</u></b> with BTS Arts Teachers					2.9
Time for classroom teachers <b><u>to participate in BTS Arts-related professional development activities</u></b>					2.8

**Willingness of Partners to Provide Program Support**

At [your LEA/District/School], how much of a barrier were the following factors to participation in the BTS Arts program?

	(1) Not a Barrier	(2) Minor Barrier	(3) Moderate Barrier	(4) Major Barrier	Mean Response
Willingness of district/LEA leadership and/or staff to provide <b><u>leadership &amp; implementation support</u></b>					1.6
Willingness of school administrators to provide <b><u>leadership &amp; implementation support</u></b>					1.7
Willingness of school community councils to provide <b><u>implementation support</u></b>					1.6
Willingness of classroom teachers to <b><u>integrate arts into core instruction</u></b>					2.2
Willingness of classroom teachers to <b><u>plan lessons with BTS Arts Teachers</u></b>					2.6
Willingness of classroom teachers to <b><u>co-teach lessons with BTS Arts Teachers</u></b>					2.7
Willingness of classroom teachers to <b><u>participate in BTS Arts-related professional development activities</u></b>					2.6

**Additional Barriers**

Please describe any additional barriers to participation in BTS Arts at [your LEA/District/School] that were not captured above.


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**Likelihood of Applying to the Program**

**Current Likelihood**

If the barriers identified were to persist or remain unchanged, how likely do you think [your LEA/District/School] would be to apply to BTS Arts in the future?

- Very Unlikely
- Unlikely
- Likely
- Very Likely

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Please tell us why, without any changes, you think it is **likely or very likely** for [your LEA/District/School] to apply to BTS Arts in the future.


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**Impact of Overcoming Barriers**

If the barriers identified were **overcome or were no longer an issue**, to what extent do you think that would increase the likelihood that [your LEA/District/School] would apply to BTS Arts in the future?

- Not at All
- To a Small Extent
- To a Moderate Extent
- To a Large Extent

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**Suggestions**

Describe what would need to change, if anything, for [your LEA/District/School] to participate in BTS Arts in the future.




## Appendix B: Overview of School-Level Variables

Table 18. Overview of School-Level Variables included in Barriers Analysis

Full Variable Name	Abbreviated Name	Variable Type	Definition
<b>Student Enrollment Less than 700</b>	< 700 Students	Categorical <i>(0 if ≥ 700, 1 if &lt; 700)</i>	USBE records were used to identify the enrollment size of each responding principal's school.
<b>Title 1 School Status</b>	Title 1	Categorical <i>(0 if not Title 1, 1 if Title 1)</i>	USBE records were used to identify if each responding principal's school is categorized as a Title I school.
<b>Charter/Public School</b>	Charter	Categorical <i>(0 if Charter, 1 if Public)</i>	USBE records were used to identify if each responding principal's school is a charter or public school.
<b>School Location</b>	Location	Categorical <i>(0 if City, 1 if Rural)</i>	USBE records were used to identify if each responding principal's school is located in a rural (including rural and town subcategories) or city (including city and suburb subcategories) community.
<b>Percentage of English Language Learners</b>	% ELL	Continuous	USBE records were used to identify the percentage of English Language Learner (ELL) students at each responding principals' school.
<b>Percentage of Low-Income Students</b>	% Low-Income	Continuous	USBE records were used to identify the percentage of students who qualify for free/reduced lunch at each responding principals' school.
<b>Percentage of Special Education Students</b>	% Special Education	Continuous	USBE records were used to identify the percentage of special education students at each responding principals' school.
<b>Percentage of White Students</b>	% White Students	Continuous	USBE records were used to identify the percentage of students who identify as White.

Note that the cut-off for the student enrollment variable was set to 700 students because this is the amount at which schools were eligible to apply for a 0.5 FTE BTS Arts educator.