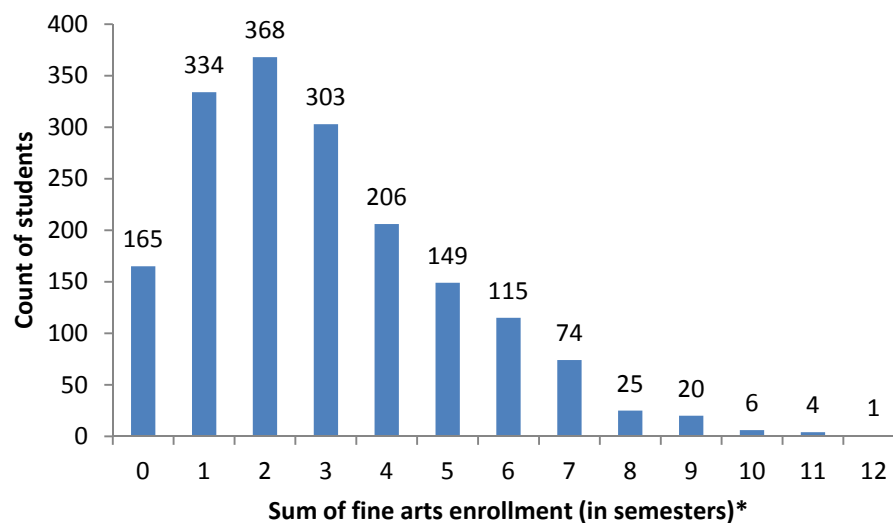


FINE ARTS ENROLLMENT AND ACADEMIC OUTCOMES: A CASE STUDY OF THE 2006–2007 AT-RISK 6TH-GRADE COHORT

During school year 2006–2007, 2,434 (47.8%) of 5,097 6th-grade students enrolled at an Austin Independent School District (AISD) middle school¹ met the state at-risk criteria. Of those, 1,770 (72.7%) continued to be enrolled at an AISD campus for 2007–2008 and 2008–2009 (i.e., through their middle school tenure). This study examined the relationship between the number of fine arts courses in which at-risk students were enrolled between 2006–2007 and 2008–2009 and their academic outcomes (i.e., school persistence versus drop out rates, attendance rates, passing rates for state tests, and discipline rates) in the years that followed.

Students in this cohort had a broad range of fine arts course experience during their middle school years, ranging from zero to 12 semesters (i.e., one to 36 six-week periods) of enrollment in a fine arts course.² On average, students were enrolled in fine arts courses for a sum of between three and four semesters (i.e., 9.74 six-week periods of enrollment, not necessarily consecutively) during middle school.

Figure 1. Cumulative Middle School Enrollment in Fine Arts Courses for the 2006–2007 At-Risk 6th-Grade Cohort Who Attended AISD 2006–2007 Through 2008–2009



Source. AISD enrollment and course history, 2006–2007 through 2008–2009

* The number of semesters of enrollment was determined by the sum of the number of six-week periods of enrollment (one to three six-week periods were summed as 1 semester of enrollment). Because this was based on the sum of six-week periods enrolled, it is important to understand that students may not have been enrolled during entire semester(s), and/or may have been enrolled during more partial semesters than indicated (e.g., a student may have been enrolled for a single six-week period during three different semesters, which would have summed to a single semester here).

¹ For this study, 6th-grade students enrolled at an AISD elementary campus during the 2006–2007 school year are excluded.

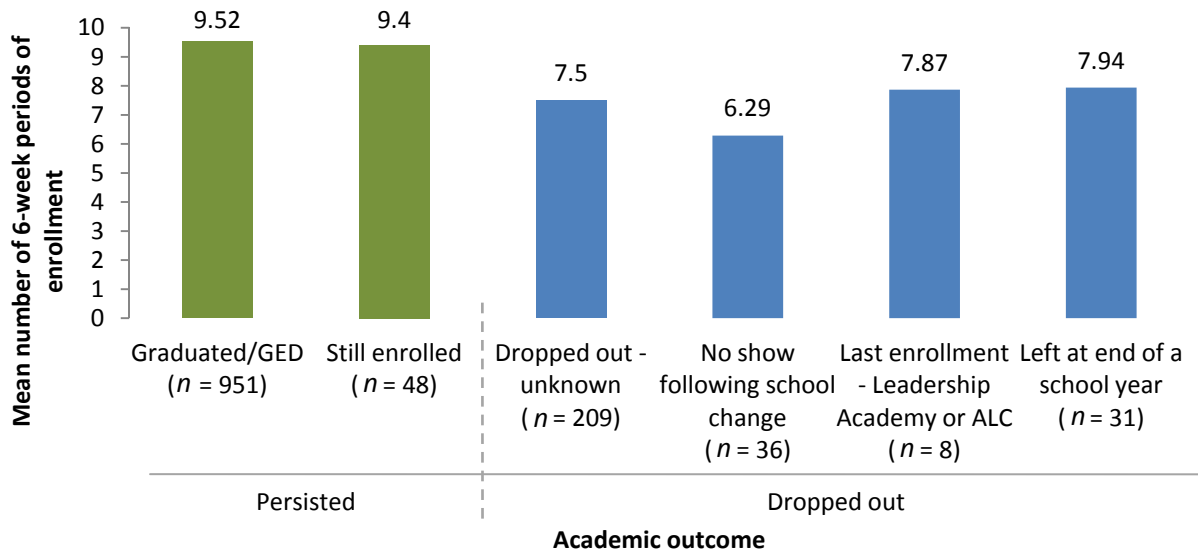
² The number of semesters of enrollment was determined by the number of six-week periods of enrollment (one to three six-week periods were considered one semester of enrollment). Note that students may not have been enrolled during the entire semester.

Of the cohort of 1,770 at-risk students who attended an AISD middle school during the 2006–2007 through 2008–2009 school years, by the end of the 2012–2013 school year: 53.4% graduated from an AISD school, 16.0% dropped out, 3.3% were still enrolled during the 2013–2014 school year, and the remaining 27.2% left AISD for other reasons (e.g., to be home schooled, to enroll in another school district in or out of Texas, or to leave the country). For the purposes of the study of student academic outcomes, the students who left the district for other reasons (i.e., those for whom final academic outcomes are unknown) were excluded; only the students with known outcomes were examined.³

Relationship Between Fine Arts Credits Earned and Drop or Persist Status

Of the 1,286 students for whom academic outcomes were known, 21.9% (281) dropped out of school and 78.1% (1005) persisted in school (i.e., graduated, achieved their GED, or were still enrolled in 2013–2014). Students who persisted had more experience in fine arts courses than did students who dropped out (Figure 2 and Table 1). Results of logistic regression analyses indicate that for every additional six-week period of fine arts enrollment, students were 1.0526 times more likely to persist in school ($X^2 = 22.4588, p < .0001$).

Figure 2. Mean Number of six-week Periods Enrolled in Fine Arts During Middle School, by Academic Outcome for the 2006–2007 At-Risk 6th-Grade Cohort



Source. AISD enrollment, course history, and leave reason history for 2006–2007 through 2013–2014
 Note. Only students who attended AISD 2006–2007 through 2008–2009 and those with known outcomes were included. For example, those who transferred to other school districts or who left the country were omitted.

³ Three additional students were removed from the study because it could not be determined if they left AISD for other reasons or if they dropped out.

Table 1. Student Fine Arts Enrollment, by Persistence Status, for the 2006–2007 At-Risk 6th-Grade Cohort

	Students who persisted (<i>n</i> = 999)	Students who dropped out (<i>n</i> = 284)	Difference
Mean number of semesters of fine arts enrollment	3.2	2.5	-0.7
Mean number of six-week periods of fine arts enrollment	9.5	7.4	-2.1

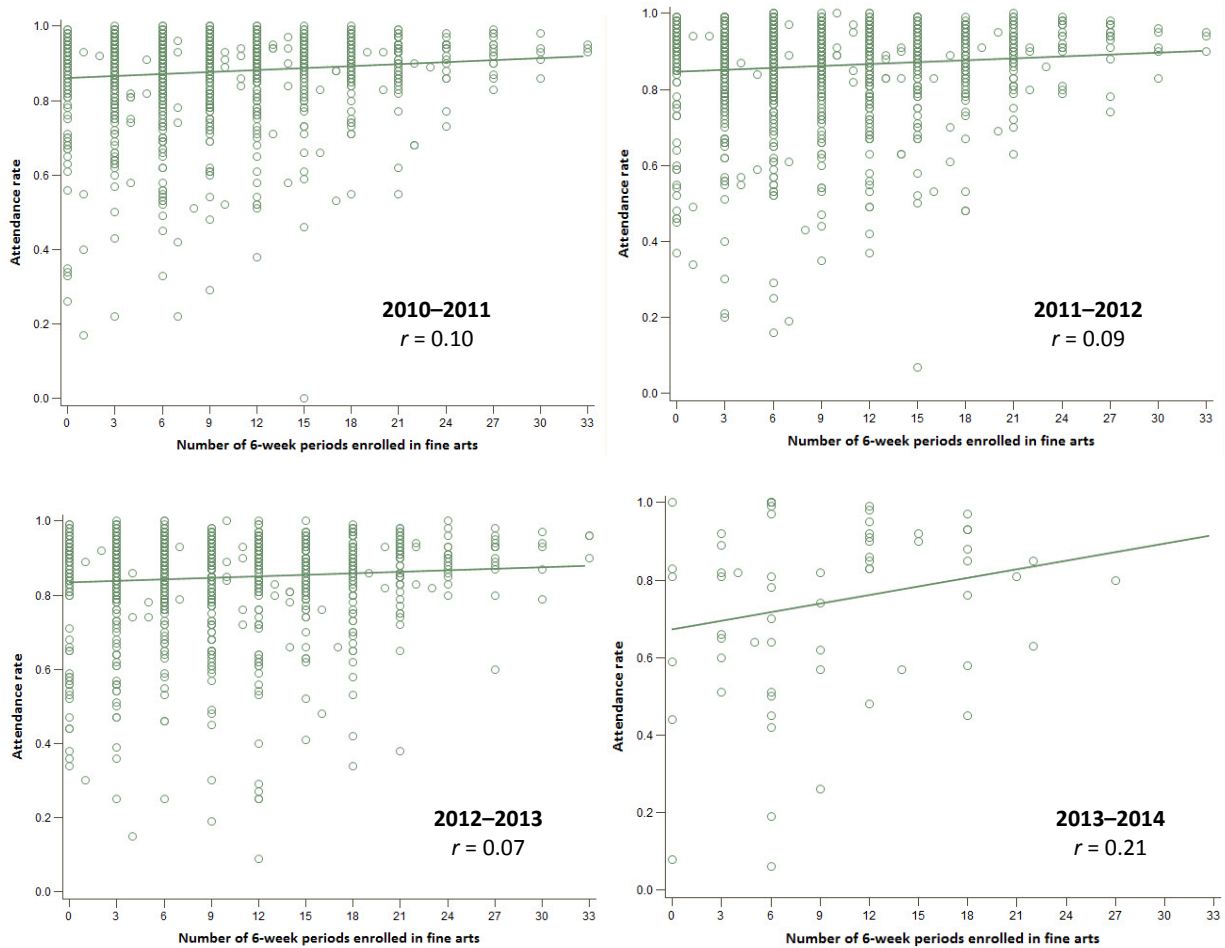
Source. AISD enrollment, course history, and leave reason history for 2006–2007 through 2013–2014

Note. Only students who attended AISD 2006–2007 through 2008–2009 and those with known outcomes were included. For example, those who transferred to other school districts or who left the country were omitted.

Relationship Between Fine Arts Credits and High School Attendance Rates

A slightly positive relationship existed between the number of six-week periods of enrollment in fine arts during middle school and students’ attendance rates in high school (Figure 3). Unsurprisingly, this effect was stronger in the years closer to the middle school years and diminished over time ($r_{2010-2011} = 0.10$, $r_{2011-2012} = 0.09$, and $r_{2012-2013} = 0.07$). Primarily, the correlation between fine arts enrollment and attendance was driven by the greater variability of attendance for students who had fewer six-week periods of fine arts enrollment. The exception to the decline over time was for students who were still enrolled in the 2013–2014 school year; these students exhibited the greatest correlation between middle school fine arts enrollment and school year attendance ($r_{2013-2014} = 0.21$).

Figure 3. The Correlation Between Fine Arts Enrollment and Annual Attendance Rates for the 2006–2007 At-Risk 6th-Grade Cohort



Source. AISD enrollment, course history, and attendance history for 2006–2007 through 2013–2014 (attendance data was not accessible for 2009–2010)

Note. Only students who attended AISD 2006–2007 through 2008–2009 and those with known outcomes were included. For example, those who transferred to other school districts or who left the country were omitted.

Relationship Between Fine Arts Credit and State Test Passing Rates

During their 9th-grade year (2010–2011) a total of 1,114 students from the original at-risk 6th-grade cohort took the mathematics (math) Texas Assessment of Knowledge and Skills (TAKS) and 1,149 took the reading TAKS at AISD. Although the trend showed that students who did better on the math TAKS assessment also had taken more fine arts courses in middle school than did those who did not do as well on the math TAKS, the differences between the mean numbers of semesters (i.e., six-week periods) of enrollment in fine arts courses was small (i.e., about one six-week period). However, on the TAKS reading assessment, a greater difference than on the TAKS math assessment was found in fine arts enrollment between those who did not meet the standard, those who met the standard, and those who performed at the commended level (i.e., nearly three six-week periods, or a full semester) (Table 2).

Table 2. Student Fine Arts Enrollment of the 2006–2007 At-Risk 6th-Grade Cohort, by Their 2010–2011 Texas Assessment of Knowledge and Skills (TAKS) Passing Standard Status

	Math			Reading		
	Did not meet the standard (n = 461)	Met the standard (n = 644)	Commended Performance (n = 44)	Did not meet the standard (n = 223)	Met the standard (n = 891)	Commended Performance (n = 62)
Mean number of semesters of fine arts enrollment	2.82	3.3	3.39	2.36	3.26	4.11
Mean number of six-week periods of fine arts enrollment	8.38	9.84	10.11	7.03	9.74	12.31

Source. AISD enrollment for 2006–2007 though 2008–2009, and TAKS records for 2010–2011
 Note. Only students who remained enrolled at AISD were included.

Although fewer students did not meet the standard during 2011–2012 than during 2010–2011, the mean numbers of students’ semesters of fine arts enrollment for each TAKS passing standard status were very similar to the mean numbers for the previous year (Table 3). Again, for both math and reading, students who performed at the commended level on the assessment had the most enrollment in fine arts, followed by those who met the standard; those who did not meet the standard had the least enrollment in fine arts. Consistently, greater differences in enrollment were found between groups on the reading assessment than on the mathematics assessment (Table 3). Caution should be used in interpreting these results because it was also found that students who took more fine arts courses in middle school performed better on their 5th-grade TAKS assessments than did students who took fewer fine arts courses in middle school.

Table 3. Student Fine Arts Enrollment of the 2006–2007 At-Risk 6th-Grade Cohort, by Their 2011–2012 Texas Assessment of Knowledge and Skills (TAKS) Passing Standard Status

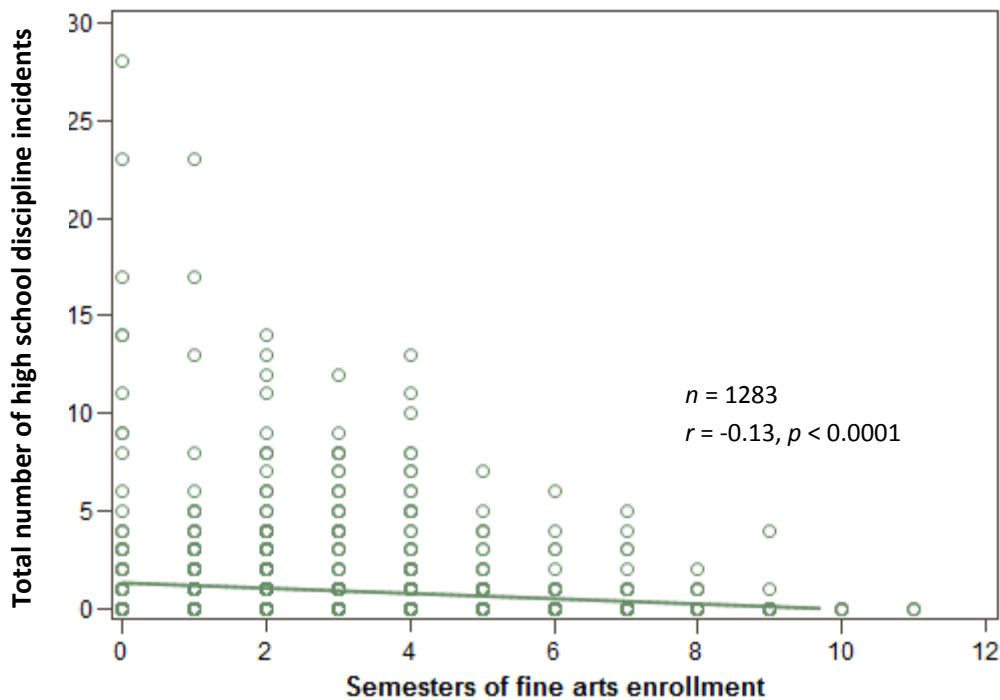
	Math			Reading		
	Did not meet the standard (n = 127)	Met the standard (n = 902)	Commended performance (n = 113)	Did not meet the standard (n = 82)	Met the standard (n = 958)	Commended performance (n = 85)
Mean number of semesters of fine arts enrollment	2.79	3.18	3.42	2.38	3.20	4.34
Mean number of six-week periods of fine arts enrollment	8.31	9.50	10.42	7.10	9.56	13.01

Source. AISD enrollment for 2006–2007 though 2008–2009, and TAKS records for 2011–2012
 Note. Only students who remained enrolled at AISD were included.

Relationship Between Fine Arts Credit and High School Discipline Rates

In order to determine if there is a relationship between fine arts enrollment and student behavior, student discipline data was analyzed. The total number of serious discipline incidents (i.e., those in which a student was suspended or removed to the disciplinary alternative campus) was calculated for each student from 2009–2010 through 2012–2013 (i.e., their high school years). Then, the total discipline experienced was correlated with the total number of semesters, and six-week periods, of fine arts enrollment during middle school. The number of semesters, and six-week periods, of fine arts that students were enrolled in during middle school was significantly negatively correlated with number of times they were disciplined during high school ($r=-0.13, p<.0001$). In other words, the more fine arts a student was enrolled in during middle school, the fewer discipline incidents they experienced during high school. Because the vast majority of students (70%) never experience a serious discipline incident, the relationship is significant but not large and should be interpreted with caution (Figure 4).

Figure 4. The Correlation Between Middle School Fine Arts Enrollment and the Total Number of Discipline Incidents for the 2006–2007 At-Risk 6th-Grade Cohort



Source. AISD enrollment for 2006–2007 through 2008–2009, and discipline records for 2009–2010 through 2012–2013
 Note. Only students who attended AISD 2006–2007 through 2008–2009 and those with known outcomes were included. For example, those who transferred to other school districts or who left the country were omitted.

Results

In summary, for the 2006–2007 At-Risk 6th-grade cohort, the relationships between fine arts course taking in middle school and academic outcomes in high school indicated that students who enrolled in more fine arts courses also had better academic outcomes. Specifically, increased fine arts enrollment was correlated with positive outcomes for students in the following areas:

- Academic persistence (i.e., graduating, completing the GED, or maintaining enrollment beyond their expected graduation date)
- High school attendance
- Passing standardized achievement tests in math and reading during the 9th- and 10th-grade years
- Discipline

Although these results must be interpreted with caution because they are correlational and because other uncontrolled factors could be at play, they are encouraging and merit further investigation. As the district continues the Creative Learning Initiative, the opportunity will be available to more extensively explore the relationship between creative learning and academic achievement.