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Abstract

In recent decades, institutions, teachers, and students report a decline in field trip attendance. The impact of this decline on educational and societal outcomes such as social-emotional skill acquisition is unknown. Social-emotional learning (SEL) are skills thought to be important to life and relationship success and are associated with better long-term student outcomes. This study describes the results of the first-ever longitudinal experiment of the effects of multiple arts-related field trips on elementary school students of color in a large urban school district. Treated students attended three field trips to an art museum, a live theater production, and a symphony performance. We find significant educational benefits from attending multiple arts field trips on social-emotional outcomes, including increased feelings of tolerance and social perspective taking. Our findings also suggest that female treatment students exhibit increased conscientiousness as compared to their control group peers; however, these effects dissipate when treatment ceases. Further, female students who receive three additional field trips in a second treatment year act more conscientious than in the prior year of treatment. Increased exposure to the arts through field trip experiences does not, however, appear to increase students' desire to consume or participate in the arts, nor do we find an impact of treatment on empathy. These findings suggest that arts-related field trips elicit meaningful changes in students' social-emotional attitudes and actions and that a decline in field trip attendance may be detrimental.

Keywords: Social-emotional learning, school field trips, arts education, experimental design

Introduction

For generations, K-12 students across America have loaded onto buses and headed off on field trips. However, in recent decades, institutions such as arts venues, science museums, and zoos have reported a decline in field trip attendance (McCord & Ellerson, 2009). Teachers and students also report a decline in school sponsored field trips, particularly for minority students in struggling schools (Government Accountability Office, 2009; Keiper, Sandene, Persky, & Kuang, 2009). Amidst concerns for student safety in a post-9/11 world, and in efforts to maximize "seat time" to increase math and reading standardized test scores in a high-stakes accountability context, schools are under pressure to reconsider the cost to benefit ratio of traditional educational field trips (Gadsden, 2008; Rabkin & Hedberg, 2011). While many stakeholders maintain that field trips have value above that of common measures of learning such as test scores (Student & Youth Travel Association, 2016), there is pressure on district and building administrators to maximize easily measured metrics of learning. If field trips, which are costly in resources such as time and money, do have measurable impacts on student outcomes, then institutions can defend their worth. If they do not have measurable benefits, critics will continue to cut them, and proponents will have difficulty defending the inherent, yet heretofore largely unmeasured, value of field trips. While there is prior research on the value of a single arts field trip, there is no prior work on the effects of multiple arts field trips and whether or not benefits compound with increased exposure. This study provides evidence of the social-emotional benefits of multiple arts-related field trips, as well as evidence that when field trips cease, benefits dissipate.

This study describes the second-year results of a rigorous, longitudinal experiment in which urban students of color in ten elementary schools within a district are randomly assigned to receive

either field trips to three arts institutions or the district's standard curriculum, which includes a single field trip to a cultural venue that may be arts-related. The treatment field trips occur at one of the largest arts centers in the nation, The Woodruff Arts Center in Atlanta, Georgia. This experimental study is the first one of its kind focused on the effects of multiple arts-related field trips on student social-emotional skills, as well as the first study on the effects of arts field trips on this population. We find significant social and emotional benefits from student exposure to multiple arts field trips. In particular, students randomly assigned to attend multiple arts-related field trips report higher levels of tolerance and social perspective taking (SPT). In this study, we define *Tolerance* as the willingness to accept people who have different ideas and opinions, whereas *SPT* is defined as the understanding that people view the world in different ways. Increased exposure to arts experiences through attending multiple field trips has no effect on students' desire to consume or participate in the arts or their reported levels of *Empathy*. We do find evidence of increased levels of *Conscientiousness* for female treatment group students, and evidence of a compounding effect for female students who receive three additional field trips, in year two of the study. However, we find that this effect recedes when treatment ceases. Taken together, our results suggest that there are meaningful educational benefits to the traditional practice of school field trips to arts institutions, that more exposure appears to produce compounding benefits, and that once treatment ceases, the effects recede.

Previous Literature

While rigorous research on the value of field trips, particularly culturally enriching field trips, is a relatively new field, there is a burgeoning literature. Previous research on the impacts of field trips shows correlations and some causal estimates between culturally enriching activities

such as arts field trips and enhanced student academic and social-emotional outcomes. While our study is the first of its kind to examine the effects of arts-related field trips on social-emotional skills with urban elementary students of color, there is literature about the importance mission-driven charter schools such as KIPP and YES Prep place on field trips in the curriculum of schools of choice. Comprised of urban, African American students at risk, a population similar to the population in our study, these schools view field trips as a fundamental part of education and preparation for a life in society (Matthews, 2009; Maranto, 2015). Further, there is evidence that minority students in struggling traditional public schools have the least access to both arts exposure in the schools and field trips (Government Accountability Office, 2009; Keiper, Sandene, Persky, & Kuang, 2009). Further, adult stakeholders report funding, school administration, and testing as barriers to student travel (Student & Youth Travel Association, 2016).

While not focused on urban minority populations, there is an existing literature examining the effects of arts field trips on public school students. A recent large-scale experiment studies the effect of a single visit to an art museum and finds that students who tour an art museum demonstrate detectable significant effects when measured two months after the visit occurs (Greene, Kisida, & Bowen, 2014). Effects on desire to consume arts in the future are significant for treatment students, and through tracking free tickets given to all students, researchers note that treatment students are more likely to act upon their consumption desires by revisiting in the future (Kisida, Greene, & Bowen, 2014). Similarly, there is evidence that students who visit the art museum demonstrate increased levels of critical thinking, as well as increased tolerance, content knowledge, and historical empathy (Bowen, Greene, & Kisida, 2014; Greene, Kisida, & Bowen, 2014). Further, these benefits appear stronger for students from

economically disadvantaged and rural backgrounds. A more recent descriptive study of the effects of single-visit art museum field trips finds similar results, with students experiencing increases in critical thinking, creative thinking, and human connection, defined as an awareness or sense of connection to others and the self (Randi Korn & Associates, 2018). In addition to comparing the effects of a single art museum visit, this study adds a second treatment condition of a near identical art program occurring in a classroom instead of at the museum. They find that the in-gallery field trip appears to be more impactful than simply seeing and discussing reproduced art content at school (Randi Korn & Associates, 2018).

In similar experimental studies focusing on field trips to see live theater performances, researchers find statistically significant benefits to students on self-reported levels of tolerance and social perspective taking, and evidence of an increased desire to consume theater in the future (Greene, Hitt, Kraybill, & Bogulski, 2015; Greene, Erickson, Watson, & Beck, 2018). Further, in an attempt to parse out the mechanism of arts' impact, Greene et al. (2018) added a second treatment condition wherein students are randomly assigned to receive a field trip to a live theater performance of a play, a field trip to see a movie production of the same play, or to experience the school's regular curriculum. Students who receive the live arts exposure experience the largest impacts, with increased levels of tolerance, SPT, and desire to consume theater in the future compared to students in the control group (Greene et al., 2018). Students who attended the field trip to see the movie production of the same play were not significantly different on any of the measures from control group students who remained at school.

While not focused explicitly on field trips as the delivery instrument, several studies examine the impact of cultural exposure on student outcomes. A recent meta-analysis of arts integration programs on student performance finds a four percentage point increase in student

achievement; however, the authors caution that none of the included studies could establish causal links between arts integration programming and academic gains (Ludwig, Boyle, & Lindsay, 2017). In a study of identical twins, researchers find that increased cultural activity is correlated with higher grades and rates of high school graduation (Jægar & Møllegarrd, 2017). An experimental study of a district wide arts enrichment program shows positive outcomes on student attendance, school engagement, and sense of civic obligation, as well as increased standardized test scores (Bowen & Kisida, 2019). Longitudinal studies of student outcomes also find positive correlations between arts exposure and academic outcomes (Ruppert, 2006; Lacoe, Painter, & Williams, 2016). Further, one study of an arts integration program finds evidence that length of exposure to the arts is important, with students who receive longer and more intensive exposure experiencing greater results. However, this same study shows diminishing effects once treatment ceases (Lacoe, Painter, & Williams, 2016).

Additional studies examine non-academic impacts of arts exposure and find promising evidence of increased social-emotional skill levels. A recent meta-analysis of drama-based learning finds both positive academic and social-emotional outcomes for student participants (Lee, Patall, & Cawthon, 2015). Similarly, researchers find social and emotional benefits to students shortly after exposure to drama activities in a set of experiments (Goldstein & Winner, 2012).

Research Questions and Theory

While there is evidence that students benefit from field trips to arts and cultural institutions and learn from arts-related activities, there is little evidence addressing the question posed in this study, that is; "What is the impact of multiple arts field trip exposures on student social and emotional outcomes?" We add to the existing literature by conducting the first large-

scale experiment examining the impact of multiple arts field trips, over multiple years on social-emotional skills, and examining whether or not effects persist once exposure ceases. We hypothesize that as students with low prior arts exposure benefitted from a single arts field trip, it is also likely that these students continue to benefit from additional arts field trips and that benefits may compound over time. This study is also the first arts field trip study to link students to their administrative data with the potential to track social-emotional, academic, and behavioral outcomes over time, thus following students as they move into middle school, choose electives, graduate from high school, matriculate into postsecondary education and into adulthood.

Arts field trips offer students the obvious experience of attending an arts institution and benefitting from what it has to offer, whether that is seeing a play, experiencing a concert, or discussing a work of art with peers. However, these arts field trips offer another layer of experience and benefit that is less obvious by connecting students to the larger world outside that of their school or neighborhood. Students, even students in large cities, and economically disadvantaged students in particular, tend to travel in small circles from home to school and within their neighborhoods. Middle-class families with disposable resources of time and money are likely to take their children outside these daily enclaves to experience the more diverse world (Kornrich, 2016). However, for families with scarce resources of both time and money, access to these expanding experiences is restricted. Prior studies of single visit field trip experiences with a majority white sample suggest that students from more rural, isolated and economically disadvantaged areas received the greatest benefit from culturally enriching field trip experiences (Bowen, Greene, & Kisida, 2014; Greene, Kisida, & Bowen, 2014; Greene et al., 2018). We hypothesize that the students in our study, who are predominately isolated minority urban students from low-income families are also likely to benefit in similar ways. For students

isolated physically and socioeconomically, the school field trip is their chance to connect to the larger society in a way that may otherwise not be open to them. This connection exposes them to different people, places, and ideas. We theorize that these experiences will lead to increases in a variety of social-emotional feelings. We hypothesize, based on the findings of prior studies, that we will see positive gains on social-emotional characteristics such as *Tolerance* and *Social Perspective Taking (SPT)*. We also expect, based on the literature, to see positive outcomes on students' desire to consume arts.

Study Design

This study expands upon the limited literature on the value of culturally enriching arts field trips by using an experimental design to estimate the effects of multiple arts-related field trips on both social-emotional attitudes and actions as well as the desire to consume and participate in the arts. Our primary research questions for this study are whether or not students experience social-emotional benefits from multiple field trips to arts institutions, and how long these effects persist once students stop participation.

While we believe that all students likely benefit from repeated exposure to arts experiences, it is also likely that there is a diminishing return to repeated exposures, i.e. the relative benefit to the student from exposures one to three is more than the gain from exposures 50-53. For those who have multiple prior exposures, the additive benefit of more exposures may exist but could be smaller and therefore difficult to measure, while the benefit of additional exposures for those with less prior exposure could continue to be significant. For this reason, we test the impact of multiple exposures in one year, the impact of multiple exposures over multiple years, and the persistence of effects once exposure ceases. Further, we contribute to the literature by linking students' self-reported survey data with their administrative data, used here to control

for potential student differences. Consequently, for the first time in this type of arts field trip study, we can link students' attitudes and actions with performance over time[1].

This paper examines the impact of multiple arts field trip experiences on seven attitudes and actions: desire to *Consume* and *Participate* in the arts, *Empathy*, *Social Perspective Taking (SPT)*, *Tolerance*, *Conscientiousness* and *Effort*. Survey questions were designed to probe students' attitudes as well as actions they intend to or actually take. All constructs rely on students' self-reports and performance on survey measures; therefore, results are a snapshot of the potential full range of impacts of the treatment, because it is unlikely that we perfectly capture the entire effect of the intervention in a limited survey or that these students are able to fully self-report the impact of treatment.

Our preferred study design would be to randomize at the student-level instead of at the grade level. However, the logistical strain of taking some students from each grade, all from different classes and schools, on three field trips a year proved too much of a challenge. The best compromise to preserve the relationship with the schools and to minimize disruption is randomization within the schools by grade level. We believe this design preserves the rigor of the experiment. Students in these schools are homogenous populations and the majority of students receive free or reduced-price lunch (FRL). Further, we believe that students within the same school, who come from the same neighborhood and are in adjacent grades differ by so little that randomization by grade is appropriate. These schools serve students from similar urban neighborhoods with similar demographic characteristics. All of these schools "feed" into the same middle schools by sixth grade.

[1] See Erickson et al. (2019) for academic and engagement outcomes from the same intervention.

Because randomization into treatment and control makes the two groups as near to identical as possible, our study design is relatively straightforward. Within each school, we randomly assigned students within either fourth or fifth grade to the treatment group or control group. For balance on both age/grade and numbers between treatment and control, we ensure an equal distribution of fourth and fifth grade students across treatment and control groups. For instance, in school A, all fourth grade students are assigned to treatment and are scheduled to receive three arts field trips. Fifth grade students in school A receive "business as usual" which is one field trip per year. This field trip may be to an arts venue or some other cultural venue. In school B, fifth grade is the treatment group and fourth grade is the control group, but all other protocols are the same. Table 1 describes the within school, by-grade randomization used in this study

Table 1: Treatment Assignment in Year 2 by Cohort

School 1		**School 5**	
4th	Treatment	4th	Treatment
5th	Control	5th	Control
6th	Treatment- Prior	**School 6**	
School 2		4th	Treatment
4th	Treatment	5th	Control
5th	Control	**School 7**	
6th	Treatment- Prior	4th	Treatment
School 3		5th	Control
4th	Control	**School 8**	
5th	Treatment- Double	4th	Control
6th	Control	5th	Treatment
School 4		**School 9**	
4th	Control	4th	Control
5th	Treatment- Double	5th	Treatment
6th	Control	**School 10**	
		4th	Control
Cohort 1	Cohort 2	5th	Treatment

Randomization occurred within schools between 4th and 5th grades. Students in 6th grade from schools 1 and 2 were randomly assigned to treatment when they were in 5th grade in year 1 of the study. As such, in year 2 they are one-year post treatment. Students in 5th grade in schools 3 and 4 were randomly assigned to treatment when they were in 4th grade in year 1of the study. As such, in year 2 they receive an additional dose of treatment for a total of 6 field trips.

In the first year of our study, during the 2016-17 academic year, *Cohort One* consists of students from four public schools within the same school district. In the second year of the study, in the 2017-18 academic year, the *Cohort One* control students from year one continue to serve as our control group, and treatment students from year one continue to serve as treatment students in year two. Additionally, students who are in the fourth grade in year one and who are in the fifth grade in year two receive a second dose of treatment, three additional arts field trips, for a total of six arts-related field trips over two years. However, students who are in the fifth grade in year one, and who are now moved on to the sixth grade in the middle school did not receive additional arts fields trips besides those provided as part of their regular school

curriculum. The result of this design is that treatment students from *Cohort One* receive either three or six arts field trips over two years. This variance in treatment exposure allows us to measure the effect of three treatment field trips, six treatment field trips, and the persistence of these effects after treatment ceases.

Our four original schools add a second cohort of fourth graders, *Cohort Two*, in year two of the study. Further, six new schools, within the same district and from a new neighborhood, entered the study. These additions give us a total of ten schools in our second cohort. The six new schools follow the same randomization protocol as in the prior cohort. We again ensure that three of the new schools have fourth grade treatment groups and that three schools have fifth grade treatment groups.

At the beginning of the school year and prior to treatment, we surveyed all students in fourth and fifth grades to obtain pre-treatment measures. It is important to note that we do not have baseline survey measures. Teachers were aware of treatment status within their school after randomization occurred but before surveys could be administered. Students in the treatment group then receive three field trips over the course of the year with most occurring from late fall and early spring before standardized testing season begins in April. Similarly, the control group receives "business as usual" and may attend a school sponsored field trip. In the late spring, after standardized testing is complete, we again survey all students in our study to collect post-treatment outcome measures.

Intervention

In partnership with The Woodruff Arts Center in Atlanta, Georgia, and a large urban school district in the surrounding area, fourth and fifth grade students were randomly assigned to receive an arts field trip to each of the three Woodruff partners: the Alliance Theatre, the Atlanta

Symphony Orchestra, and the High Museum of Art, or to serve as a control group. We then followed these students into a second year, where some students received a second round of treatment with three additional arts-related field trips, for a total of six field trips in two years.

In year one of the study, the field trips consisted of the Alliance Theatre's production of *Cinderella and Fella*, the High Museum of Art's *I See Literacy* program, which includes a docent-guided tour and a hands-on studio workshop, and the Atlanta Symphony Orchestra's performance *Nature's Symphony: How Nature has Inspired Famous Works of Music*. The three high-quality field trip experiences, all part of the regular education programming at each venue, are carefully designed for maximum impact and cultural relevancy, and are aligned to state standards. The hour-long theater performance was a witty and culturally relevant adaptation of the traditional Cinderella story. A trained volunteer docent led the High Museum of Art's hour long tour, which featured a focused study of several works of art in multiple galleries. A staff teaching artist facilitated an hour-long hands-on studio experience. Finally, the Atlanta Symphony Orchestra performed music carefully selected for younger audiences in their 1700 seat facility that was filled to capacity for the hour-long experience.

In year two of the study, the field trips consisted of the Alliance Theatre's production of *The Jungle Book*, the High Museum of Art's *STEAM* tour and hands-on studio workshop, and the Atlanta Symphony Orchestra's *Concert for Young People Series* performance of *The Colors of Music, Sounds We Can See*. All field trips were similar in length and content to the prior year. While the Alliance Theatre was closed for a complete remodel in year two of the study, satellite theaters of similar size were used to stage their performances.

It is important to note that the treatment consists only of the offer to attend three field trips and a one-day professional development session for the classroom teacher. Whether or not a

teacher chooses to incorporate additional learning activities or to use materials provided by The Woodruff Art Partners, either prior to or after the visit, is done at the discretion of the teacher or school. Further, as part of their school programming, control students in our study receive one field trip a year to a culturally enriching venue. In the years of our study, control students did attend The Woodruff venues on field trips with their schools. In the 2016-17 academic year, our control group of fourth grade students attended the symphony and our control group of fifth grade students attended the art museum. While the symphony performance was identical, the art museum programming consisted of a self-guided audio tour and did not include a hands-on studio component. In the 2017-18 academic year, the fourth or fifth grade control group students did not attend a Woodruff venue[2]; however, both our treatment and control group sixth grade students attended the Alliance Theatre's performance of *Alice Between*.

Methodology

The survey outcomes described in this paper consist of cultural *Consumption* and *Participation*, *Empathy*, *SPT*, and *Tolerance*. Further, we use the students' survey responses to calculate careless answering and non-response, which are proxy measures of student *Conscientiousness* and *Effort*, respectively. The constructs measured remain largely the same between the two years. Specific changes to constructs are detailed in the next section. Additionally, in year one the survey includes measures of *Grit* and *Satisfaction with Life*. However, these scales demonstrated low reliability in year one and were dropped to shorten the overall survey length.

[2] In the 2017-18 academic year, control students attended the Jimmy Carter Presidential Library and Museum, and the Atlanta History Center.

In addition to the survey data, we also obtained detailed student-level administrative data through a partnership with the school district for both the year prior to treatment as well as for the treatment years. Detailed descriptions of both the survey data and the administrative data follow.

Survey Constructs

Consumption and Participation

Because earlier research suggests that visiting cultural institutions increases the desire to frequent those institutions in the future, we include measures of *Consumption* on the survey. We also include measures of the desire to *Participate* in the arts because we hypothesize that arts exposure through field trips might inspire students to become more involved in the arts.

Cultural *Consumption*, which we adopt from Kisida, Greene, and Bowen (2014), has separate scales for a student's desire to consume visual art, theater, and the symphony with seven questions in each scale. The scales include questions such as "How interested are you in visiting an art museum?" and "I plan to see live theater performances when I am an adult." Cultural *Participation* also has separate scales for each art form and measures a student's desire to create art themselves (Kisida, Greene, & Bowen, 2014). The scale includes a total of four questions for each art form such as "How interested are you in making a work of art?" and "How interested are you in playing a musical instrument?" Students choose from five Likert style answer options from "not interested" to "very interested" for each question. The Cronbach's alpha, a measure of the construct's reliability, for composite *Consumption* is 0.91 and 0.83 for *Participation*.

Empathy

In both years of the study, our survey includes a measure designed to probe students' levels of *Empathy*. However, between year one and year two, the items in the construct change.

The original construct contains ten statements such as “It upsets me when another child is being shouted at.” Students are given answer choices on a five-point scale ranging from “disagree a lot” to “agree a lot.” Three items from the original construct in year one are retained in year two, and three new items such as “After seeing a play or movie, I have felt as though I were one of the characters” were added for a total of six items in the construct. This change was made to shorten the survey and to better capture feelings of empathy that might be impacted by arts exposure. The Cronbach’s alpha for *Empathy* is 0.81 in year one of the study, and 0.68 in year two.

Social Perspective Taking

Theory and prior research suggest that exposing students to a broader world through field trips in general, and arts field trips in particular, increases their ability to understand other people’s points of view (Greene et al., 2018), a skill that is referred to as *Social Perspective Taking (SPT)* (Gehlbach, 2004; Gehlbach et al., 2008; Gehlbach, Brinkworth, & Wang, 2012). The construct used in the survey to measure *SPT* has been used in prior studies (Greene et al., 2018) and is identical in both year one and year two. The scale consists of seven questions such as “How often do you attempt to understand your friends better by trying to figure out what they are thinking?” and “When you are angry at someone, how often do you try to ‘put yourself in his or her shoes?” Answer choices range from “almost never” to “almost all the time.” The Cronbach’s alpha for *SPT* is 0.78.

It is possible that the students in this study did not fully understand the questions in this construct and were therefore not able to accurately answer them. The majority of students in this study have low reading ability. Only 20% of the students in our sample have composite standardized test scores at or above the “proficient” range. In our planning meeting with district and school stakeholders, teachers and principals expressed concern that students may struggle

with reading the survey. To compensate for this deficit, we read the surveys aloud during administration. However, even with this accommodation, it is possible that students with a lower receptive vocabulary may still not have been able to fully comprehend the questions and, as a result, may not have been able to accurately respond. These questions, more so than items in the other constructs, were difficult to understand and used idioms such as "Put yourself in his or her shoes" that were unfamiliar to young students.

Tolerance

A measure of particular importance to The Woodruff partners is that of *Tolerance*. Tolerance of different people and ideas is a touchstone in American society and our Art Partners are particularly interested in measuring any impact of arts-related field trips on students' reported levels of tolerance. In the first year of the study, our survey contained six *Tolerance* questions in a single construct. The Cronbach's alpha for this first version of the *Tolerance* construct was poor. As a result, three of the original questions regarding tolerance of women, people with differing opinions, and people who are "different" were retained from year one. Additionally, three new questions probing students' levels of political tolerance were added to the survey in year two.

The tolerance survey items in year two consist of a three-question scale of political tolerance adopted from Peterson, Campbell, and West (2001). It includes questions such as "Some people have views you oppose very strongly. Do you agree that these people should be allowed to come to your school and give a speech?" Students are given answer choices on a five-point scale ranging from "disagree a lot" to "agree a lot." The Cronbach's alpha is 0.62. We also combine this scale with three other related statements such as "I think people can have different opinions about the same thing" which are used in prior studies and that are designed to measure

their level of acceptance of other people and different opinions (Greene, Kisida, & Bowen, 2014). The Cronbach's alpha for the six question *Tolerance* scale is 0.63.

Conscientiousness and Effort

Careless answering and item non-response, the degree to which a student is willing to carefully answer the questions and complete the survey, are both calculated as proxy measures of *Conscientiousness* and *Effort*. These measures are used and validated in similar studies (Hitt, 2015; Cheng & Zamarro 2016; Hitt, Trivitt, & Cheng, 2016; Zamarro et al., 2016). For these measures, students do not directly answer questions about their levels of conscientiousness or effort. Instead, we use student survey response patterns to calculate these outcomes. Item non-response is very simply the percentage of questions in the survey left blank and is a measure of whether or not a student is willing to persist through the survey to completion. For careless answering, we identify inconsistencies in answer patterns to related questions to determine if a student is randomly answering or is carefully answering each question.

Administrative Data

Our access to student administrative data sets this study apart from all previous experimental arts field trip literature. The student-level administrative data provide us with access to student outcomes such as disciplinary infractions, class history, GPA, and standardized test scores. In Erickson et al. (2019) we look at the effects of multiple arts-related field trips on student engagement in school, as well as impacts on test scores. In the portion of the study discussed here, we use administrative data primarily to control for baseline differences and for analyzing groups of students by proficiency levels. A composite of all prior year standardized test scores in core subjects is used to control for students' baseline performance. Further, while randomization should control for any bias between the treatment and control groups, it occurs

before baseline measures are collected with the survey instrument. Acquiring administrative data allow us to ensure that our treatment and control groups are similar and to control for significant differences. Controlling for pre-treatment measures of the outcomes also improves the precision of our estimates of treatment effects.

Sample

Our full sample consists of 1,363 students from ten elementary schools in a large urban school district. Table 2 details pre-treatment demographic and survey information for the entire sample. The average age of our sample is 10.5 years old and 50% of our sample identify as female. Over 98% of students are non-white with most students identifying as black or African American. There are no significant demographic differences between the treatment and control groups at baseline. Free and reduced lunch status is not included because the district reports that all students in the school in this study qualify. We believe that students across treatment and control groups have similar socioeconomic backgrounds because students live in the same neighborhoods and attend schools that feed into the same middle schools within the district.

Further, treatment and control groups had similar standardized test scores in the prior year, similar number of disciplinary infractions, and similar levels of school engagement. The treatment group is statistically more likely to report a greater desire to consume art and theater. Classroom teachers knew before pre-treatment surveys were administered whether their class was in the treatment group or control group. We believe this pre-treatment difference in desire to consume the arts may be the result of treatment teachers priming their students by informing them of the field trips prior to the pre-treatment survey. Further, it appears that treatment students are more apt to recall prior arts visits, also likely due to the aforementioned priming effect, thus reminding them of past visits.

While this priming effect is not ideal, it could be considered an important part of the

Table 2: Pre-Treatment Comparisons of Treatment and Control Groups

Variables	Control (mean)	Treatment (mean)	Difference (T-C)	Observations
Demographics:				
Age in years	10.48	10.59	0.11	1135
Female	51.21%	51.14%	-0.07	1363
Black or African American	98.82%	99.32%	0.50	1018
Students with Disabilities	15.50%	15.27%	-0.23	1228
Baseline Standardized Test Scores				
ELA	-0.35	-0.31	0.04	1202
Math	-0.32	-0.28	0.04	1201
Combined Tests	-0.37	-0.34	0.03	1205
Baseline Discipline Measures				
Infractions	0.12	0.12	0.00	1363
Suspensions	0.04	0.06	0.02	1363
Prior Year Percent Absent	4.47%	4.58%	0.11	1228
"School is Boring"	0.04	0.00	-0.04	1193
Desire to Consume Art	-0.05	0.14	0.19***	1222
Desire to Participate in Art	0.03	0.05	0.02	1222
Previously attended The Woodruff	75.10%	80.61%	5.51*	1181
Previously attended Alliance Theatre	32.10%	30.84%	-1.26	1211
Previously attended Atlanta Symphony	39.74%	47.95%	8.21**	1216
Previously attended High Museum of Art	49.03%	52.38%	3.35	1133

*The difference between treatment and control group students are adjusted controlling for school fixed effects. *** p<0.01, ** p<0.05, * p<0.1*

effect of assignment to treatment in that even the promise of field trips was enough to make students more likely to say they wanted to go. Whatever the case, we do control for these pre-treatment differences in our analysis.

Consent and Attrition

We received consent forms from 78% of all enrolled fourth and fifth grade students in the ten schools in both years of the study. There is a 39.6% attrition rate from students who

enroll in the schools in the fall to students from whom we obtain outcome surveys in the spring[3]. Further, there is a 6.8% differential attrition rate between the treatment and control group with more students attriting from the control group. The overall and differential attrition rates fall within the tolerable threat of bias under optimistic assumptions (What Works Clearinghouse). We believe these optimistic assumptions are appropriate for this study because it is unlikely that treatment status affects the attrition of a student from our sample. The students in our sample are a highly mobile population and movement within the year is common.

Model

Given our experimental research design and appropriate randomization, we employ a straightforward model to estimate the causal effect of arts field trips on various student outcomes. Our model is as follows:

$$Y_{is} = \beta_0 + \beta_1 1Treat_{is} + \beta_2 2Treat_{is} + \beta_3 PTreat_{is} + \beta_4 PreTreat + X_i\beta_5 + \theta_s + \alpha_i + \varepsilon_{is}$$

where the outcome of interest is *Y* for student *i* in school *s*, 1*Treat* equals 1 if students are assigned to treatment and 0 if they are control, 2*Treat* equals 1 if students receive a second dose of three field trips and 0 if they do not, *PTreat* equals 1 if students are treated in the year prior but not in the current year (this variable is for sixth grade students who were treated in fifth grade), *PreTreat* is the outcome measure prior to treatment, X_i, a vector of student characteristics including gender and grade, and θ is a fixed effect for each school. We also include student

[3] For the portion of the study described here, administrative data are only used if a student also has a completed survey, therefore attrition rates vary from those reported in Erickson et al. (2019) where administrative data are used for consenting students regardless of whether they completed a survey.

random effects, α_i, to account for correlation between students' error if they appear over two years. All standard errors are clustered at the teacher-level.

Our primary analysis pools both *Cohorts One* and *Two* across all ten elementary schools and estimates effects after one year of treatment, after two years of treatment, and the effect of prior treatment one year after treatment ceases. The data are structured as an unbalanced panel. We believe random effects are appropriate because we are correcting for student errors correlated over time and not trying to account for potential endogeneity where fixed effects would be more appropriate.

Results

In the following tables of the outcome analyses, all scales are converted into standardized z-scores with a mean of zero and a standard deviation of one. The reported results in the following tables, therefore, are the effect sizes expressed as a percentage of a standard deviation.

Cultural Consumption and Participation

We find no treatment effect in the combined sample on students' desire to be cultural consumers of all three art forms as seen in Table 3, either when controlling for pre-survey differences in desire to consume or not. However, when we look at the impact of field trips for each cohort individually, we find a significant increase of 0.33 standard deviations in treatment students' desire to consume the arts in *Cohort One* only. Similar to past research, we find no effect of arts field trips on students' desire to participate in the arts either when we combine all three art forms or when we examine each art form individually. This lack of interest in participating in the arts could be due to students' exposure to high quality productions and works of art and having a realistic understanding of the difficulty of producing quality art.

Table 3: Treatment Effect on Consume & Participate

	Consumption			Participation		
	Combined	**Cohort 1**	**Cohort 2**	**Combined**	**Cohort 1**	**Cohort 2**
1st Treatment	0.118	**0.334*** **	0.013	-0.033	0.039	-0.027
	(0.073)	(0.119)	(0.077)	(0.064)	(0.113)	(0.084)
2nd Treatment	-0.055	0.155		-0.124	0.004	
	(0.089)	(0.127)		(0.122)	(0.157)	
Previous Treatment	-0.146	-0.105		-0.149	-0.200	
	(0.127)	(0.129)		(0.151)	(0.155)	
Composite Test Score	-0.009	-0.032	-0.025	0.006	0.018	-0.016
	(0.029)	(0.038)	(0.035)	(0.029)	(0.047)	(0.037)
Female	0.210***	0.261***	0.190***	0.456***	0.524***	0.365***
	(0.056)	(0.068)	(0.070)	(0.061)	(0.102)	(0.069)
Grade 6	-0.063	0.035		-0.333**	-0.229	
	(0.108)	(0.107)		(0.141)	(0.142)	
Observations	1,271	688	760	1,271	688	760
Number of Students	1,006	423	760	1,006	423	760

Fixed effects for the ten elementary schools and student random effects are included in each model. Standard errors clustered at the teacher level are in parentheses. Observations refer to the number of observations in the panel. Number of students refers to the number of unique students in the sample
*** p<0.01, ** p<0.05, * p<0.1*

Empathy

We find no significant effects of treatment in either cohort or in the combined sample for *Empathy*. Because the construct was changed significantly between year one and year two, it limits the number of students taking either version of the survey, and thus limits our ability to detect effects.

Social Perspective Taking

Contrary to past research and our hypothesis, we find no significant effect of the treatment on students' level of *SPT* when using the entire sample. As discussed, this outcome is likely due to the low reading ability and age of the students, as well as the difficulty decoding the meaning of more complex questions in this construct. When we limit the sample to students with

higher combined test score proficiency levels, we do find a significant impact on students' level of *SPT*. In Table 4, high ability treatment group students score 0.27 standard deviations higher on the *SPT* scale than their control group peers. Further, when we control only for reading ability, as opposed to the combined test scores from all core subjects, the result for the combined cohorts becomes marginally significant at 0.18 standard deviations, thus supporting the idea that reading ability may hinder our ability to detect the true effect of treatment on *SPT*.

Table 4: Treatment Effect on Social Perspective Taking

	Combined	**Cohort 1**	**Cohort 2**
1st Treatment	0.172	**0.276***	0.063
	(0.107)	(0.155)	(0.130)
2nd Treatment	-0.076	-0.045	
	(0.239)	(0.265)	
Previous Treatment	0.279	0.388	
	(0.341)	(0.357)	
Pre SPT	0.433***	0.274***	0.581***
	(0.063)	(0.092)	(0.055)
Pre Composite Test Score	0.122*	0.183	0.106
	(0.064)	(0.111)	(0.077)
Female	0.204*	0.141	0.166
	(0.123)	(0.195)	(0.146)
Grade 6	0.018	0.065	
	(0.289)	(0.305)	
Observations	290	149	186
Number of Students	238	97	186

*Fixed effects for the ten elementary schools and student random effects are included in each model. Standard errors clustered at the teacher level are in parentheses. Observations refer to the number of observations in the panel. Number of students refers to the number of unique students in the sample *** p<0.01, ** p<0.05, * p<0.1*

For this reason, we believe that the results we find for the students with higher test scores, and likely higher vocabularies, are similar results to those we might have seen if the students with lower test scores and likely lower vocabularies had been able to accurately answer the questions.

Tolerance

While the measure of *Tolerance* is of particular interest to our research partners, there is some difficulty using the scale. Because the measure changes between the year one and year two versions of the survey, it decreases the number of observations with either version of the measure.

When we restrict our analysis of *Tolerance* to the single item that is consistent across all surveys, "I think people can have different opinions about the same thing," we see a positive and significant difference, shown in Table 5, with treatment students reporting tolerance levels 0.11 standard deviations higher than their control peers. This question was chosen because it was used in prior work, consistently used across survey years, and because it is most closely related to our theory about how arts field trips affect students.

This finding is lower than expected and lower than in prior studies where the original *Tolerance* scale rendered positive outcomes. While it is possible that these arts treatments with these students are somehow less effective at increasing levels of tolerance than in prior studies, it is also possible that there is a saturation point to tolerance messaging. Students of color in our sample may be exposed to more discussions of race and tolerance. For example, during visits to the schools, we saw bulletin boards in hallways and classrooms featuring messages and heroes who promoted tolerance. Further, the district in this study has prioritized social-emotional learning (SEL) as one of several turnaround strategies.

Table 5: Treatment Effect on Tolerance "Different Opinions"

	Combined	Cohort 1	Cohort 2
1st Treatment	**0.112***	0.116	0.087
	(0.058)	(0.089)	(0.075)
2nd Treatment	0.165	0.163	
	(0.102)	(0.125)	
Previous Treatment	-0.149	-0.168	
	(0.200)	(0.211)	
Pre "Different Opinions"	0.174***	0.188***	0.153***
	(0.045)	(0.063)	(0.051)
Pre Composite Test Score	0.161***	0.181***	0.153***
	(0.033)	(0.047)	(0.043)
Female	0.282***	0.335***	0.276***
	(0.068)	(0.082)	(0.089)
Grade 6	-0.307*	-0.317*	
	(0.175)	(0.191)	
Observations	1,187	665	695
Number of Students	927	405	695

*Fixed effects for the ten elementary schools and student random effects are included in each model. Standard errors clustered at the teacher level are in parentheses. Student random effects are included when students are observed in their first and second treatments or their first and previous treatment. Observations refer to the number of observations in the panel. Number of students refers to the number of unique students in the sample *** p<0.01, ** p<0.05, * p<0.1*

Conscientiousness and Effort

Overall, the field trips do not have a significant effect on our *Effort* measure of survey non-response. However, treatment appears to differentially affect females when it comes to *Conscientiousness*. Further, those impacts appear to compound with increased treatment exposures. We see in Table 6 that, in our combined sample, female students are 0.24 standard deviations less careless in their answering, meaning that they are more likely to thoughtfully answer the questions as compared to male peers. We also find that in the second year of

treatment, treated females become even more conscientious, 0.37 standard deviations less careless. While the level of significance drops, it is likely due to reduced power from a smaller sample of female students with two rounds of treatment. Unfortunately, the effects dissipate quickly once treatment ceases; female students who are treated in year one, but not in year two, exhibit the same level of conscientiousness as female students who were never treated. Lastly, it appears that *Cohort One* is driving this *Conscientiousness* effect. A discussion of potential reasons for the strength of year one results are included in the next section.

Additionally, it is worth pointing out that the survey in year two is 20 questions shorter than the survey used in year one, after dropping two of our original constructs. This decrease in survey length may have artificially inflated *Cohort One* students' level of *Conscientiousness* in the second year because it is easier to persist through a 70-question survey in year two than through a 90-question survey in year one. However, because surveys are read aloud to students, and because both surveys are long, we believe that the difference between the two surveys is minimal. Further, because students are only compared to other students within the same school and in the same year, both the treatment and control students would have taken surveys of the same length.

Table 6: Treatment Effect on Survey Carelessness Answering

	Combined	**Cohort 1**	**Cohort 2**
1st Treatment	0.039	0.021	0.136
	(0.090)	(0.095)	(0.109)
2nd Treatment	0.138	0.186	
	(0.211)	(0.180)	
Previous Treatment	0.065	0.096	
	(0.164)	(0.169)	
1st Treat*Female	**-0.243****	**-0.367****	-0.187
	(0.107)	(0.149)	(0.138)
2nd Treat*Female	**-0.374***	**-0.495****	
	(0.223)	(0.232)	
Prev Treat*Female	0.067	-0.033	
	(0.150)	(0.173)	
Pre Carelessness	0.343***	0.296***	0.406***
	(0.030)	(0.037)	(0.041)
Pre Composite Test Score	-0.144***	-0.083*	-0.172***
	(0.033)	(0.044)	(0.039)
Female	0.024	0.087	0.009
	(0.074)	(0.108)	(0.082)
Grade 6	-0.385***	-0.371***	
	(0.103)	(0.091)	
Observations	1,211	675	713
Number of Students	946	410	713

*Coefficients interpreted as "less careless" therefore more Conscientious. Fixed effects for the ten elementary schools and student random effects are included in each model. Standard errors clustered at the teacher level are in parentheses. Observations refer to the number of observations in the panel. Number of students refers to the number of unique students in the sample *** p<0.01, ** p<0.05, * p<0.1*

Year Two Disruptions

Our study results appear to be driven largely by students from year one *Cohort One*. Either something extraordinary happened to students in year one of the study or something extraordinary happened in year two of the study to mute the overall effects. We believe the second scenario is more likely true.

It is worth noting that in year two of the study, the Alliance Theatre was closed for remodeling and used satellite venues for their performances instead of their usual home theater. While the different venues did not appear from one observation to be disrupting, it was out of the ordinary and different from the treatment conditions in the prior year. Students in year two may have responded differently than in year one to the change in venue or unfamiliar surroundings of a production in a different theater, thus causing our year two effects to be less detectable than in year one.

Additionally, in the midst of fall survey administration in year two of the study, thus directly affecting *Cohort Two* as well as *Cohort One* in year two, Hurricane Irma hit Atlanta. When we arrived to administer pretreatment surveys, parts of the city and surrounding region were at a standstill. Many areas had no power. Several of our schools were closed due to power outages and downed trees. Even after power was restored and roads were cleared of debris, some of our schools remained closed because cafeteria food had spoiled without refrigeration and needed to be replaced before students could return and classes could resume.

Similarly disruptive, there were winter ice storms in year two of the study, which caused the cancellation of originally scheduled symphony performances and missed days of school. As a result, some of the treatment groups received a substitute symphony performance, *The Quilt of American Music*, designed for grades seventh to twelfth instead of the regularly scheduled performance. While all classes attended a symphony performance, some students received a performance with different content from that experienced by others in the treatment group and from what some students may have been prepared for at school. Further, the substituted performance was tailored to older student audiences. Since field trips to the High Museum of Art

and the Alliance Theatre occurred in the fall or later in the spring, the winter weather and subsequent school closings and trip rescheduling did not directly impact them.

These multiple events of disruption, particularly the confounding effects of two natural disasters and multiple days of missed school, could help explain the lack of significant results in year two of the study. We are attempting to measure social-emotional outcomes. Disasters that include loss of electricity, loss of work, and a multitude of other difficulties can negatively affect students, and therefore alter the types of outcomes we are attempting to measure. This stress and chaos, occurring not once but twice during year two of our study, could mute the small effects of our intervention, thus causing those effects to be more difficult to measure.

Further, treatment students effectively miss an additional three days of school in order to attend our field trips. While we believe that missing "seat time" for field trip experiences is generally worth the sacrifice, there must be a point where missing three MORE days of school in an already highly disrupted year is likely to produce adverse effects. This adverse effect may have been enough to counteract any good that the field trips did, thus making the effects more difficult to measure.

Conclusion

The evidence from this study suggests that there are important social-emotional and academic benefits to arts-related field trips. We find significant benefits to students on reported level of *Tolerance* as well as increased levels of *Social Perspective Taking* for students at or above average proficiency levels. This study is the first to show increased effects from multiple arts field trips, a compounding effect. We also find encouraging evidence that treated female students are more conscientious. The vast majority, 75% of the control group and 80% of the treatment group, had attended The Woodruff before, as well as during the study. Therefore, we

can be confident that the benefits we find accrued over time and were not simply the impact of attending a "first" art field trip.

While the results from this study differ from earlier studies, this study is conducted with a younger and more racially homogenous group than prior studies. Further, these students are all from urban areas, whereas the majority of prior study participants came from more rural areas. Finally, the reading comprehension barrier may not have been totally alleviated by reading surveys aloud. Certainly, this modification would mitigate some of the barrier, but if a low vocabulary is also associated with a lower reading level, then simply reading difficult words aloud would do little to help students better understand the survey's meaning.

Future Work

A third cohort, *Cohort Three*, of students from the six schools in year two is added in year three, as well as students from five new schools, totaling eleven schools in *Cohort Three* and fifteen schools in the study. We are currently collecting data on these students, giving us more observations and more power to explore marginally significant outcomes and treatment conditions. We also plan to collect administrative data for students as they move into sixth grade at the local middle school, which is an important time when students have their first experience choosing elective courses. We will gather data on how treatment students approach the choice of elective courses when given the opportunity, and if they select into arts-related elective courses at different rates than their control group peers. By using longitudinal administrative data, we plan to follow both the short- and long-term effects of arts-related field trips on student outcomes. Finally, we will follow these students through their K-12 experience, gathering information on outcomes such as credits earned, graduation rates, whether or not they go to college, and what kinds of employment they secure in their adult lives.

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