Inside the Black Box: What Happens on a One-Time Field Trip?

Anne Kraybill

Abstract Crystal Bridges Museum of American Art opened on November 11, 2011. Located in Bentonville, Arkansas, it was the first art museum of its size in the region. Since few students had ever been to a museum, this situation provided an opportunity to causally measure the impact of a one-time art museum field trip upon student outcomes through the implementation of a random control trial experiment. Conducted by researchers at the University of Arkansas Department of Education Reform, the research found gains in cognitive and non-cognitive domains in students who received the treatment versus the control group. This article provides background about the programmatic conditions in which the evaluation was conducted, which may have played a significant role in the outcomes.

Crystal Bridges Museum of Art School Visit Program

Art museums have a long history of providing tours to K-12 students and field trip programs are considered a staple offering. As early as 1907, a concerted effort was underway to connect the Museum of Fine Arts in Boston with colleges and public schools. While the general aim was to enhance studies, the larger purpose was to “prepare the younger among us for the message of the future by leading them to receive that of the past” and to “awaken or stimulate attention rather than to teach.”1 This philosophy is at the heart of Crystal Bridges Museum of American Art’s school visit program. The museum wanted to ensure that the region had the resources to realize this aim and through the generosity of the Willard and Pat Walker Charitable Foundation,
the museum established a $10 million endowment for school visits. The endowment provides schools with 100 percent reimbursement for transportation and substitute teachers, and every student and adult with a healthy lunch. The sponsors of this unprecedented program recognized that the school audience is the next generation of museum visitors and sought to eliminate the financial barriers schools face when scheduling a field trip (Figure 1).

Unfortunately, lack of financial resources is not the only barrier schools face when trying to participate in out-of-school learning; the threat of lost desk time or high-stakes testing often prohibits teachers from scheduling activities outside of the classroom. To counteract the loss of school group visits and to demonstrate the relevancy of museums, many art museum educators have argued that the arts can improve literacy and numeracy skills, and even improve test scores. Early on in my career, just as the No Child Left Behind Act became law, I worked at a museum that even created a standardized test-themed tour in a desperate attempt to maintain the number of students participating in field trips.

Figure 1  School buses funded by the Willard and Pat Walker Endowment pull up to the entry of Crystal Bridges. Photography by Stephen Ironside.
Yet is support of testable skills really the value of a field trip to an art museum? Despite more than a century of field trips, we’ve had little notion of what students gain. As a practitioner, I appreciated the benefits of learning from works of art, but struggled to articulate that in a significant and quantifiable way to administrators. When engaging with an artwork, students are able to make connections to history and culture that are personally relevant and meaningful. They offer multiple perspectives, reinforcing empathy and the idea that there is more than one way to interpret the world. The exchange of ideas requires mutual respect, even when students disagree, which helps to cultivate social intelligence. Every time I teach from works of art I see a student’s interpretive framework and understanding of the world expand. These outcomes are not measured on a standardized test, but are just as important as developing literacy and numeracy skills. The opening of Crystal Bridges in a region that had never had an art museum before offered a unique opportunity to see if we could document and measure what students learn when they visit by asking the question: “what do students really gain from a one-time field trip to an art museum?”

In an effort to help answer this question, I met with researchers Jay Greene, Brian Kisida and Daniel Bowen at the University of Arkansas’ Department of Education Reform. After learning that Crystal Bridges initially had a far higher demand for school tours than capacity, they realized the program had the ideal conditions to conduct a random assignment control trial that would quantifiably answer our question. They also explained that I had to be prepared for the answer to be “nothing.” Conducting this type of study is rigorous, and if there is no statistical difference between the treatment and the control groups, it will be revealed in the data analysis.

The research sample was huge — over 10,000 students, and the findings are significant. Results showed that students not only remembered significant information about their experience, but increased their critical thinking skills when looking at an unfamiliar work of art. After the museum visit they displayed higher levels of tolerance and historical empathy than the control group of students who did not visit the museum, and were more likely to want to participate in the arts. These gains were much larger for sub-groups of students from low socio-economic and/or rural schools.

As practitioners we know the program theory that informs our work, but until now we had little causal evidence that a staple museum program — a one-time field trip — had any significant effect upon students. Notwithstanding, there are limitations to the research. We cannot definitively say what
aspect of the field trip resulted in those outcomes without additional study. However, I can open the black box and discuss the conditions in which these results occurred. I believe it was more than the bus and elevator rides that drove the results.

A Typical Tour at Crystal Bridges

During the data collection students participated in a fairly structured hour-long facilitated museum tour with the option of free time to explore independently after the tour. School tours take place before the museum is open to public. Students are divided into small groups of no more than 15 per museum educator; they are led to the elevator and descend into the courtyard entry. Most students shriek in delight; for many it is their first time on an elevator. Once in the museum, the typical introduction begins by asking students to share their thoughts regarding the rules in the gallery. The number one rule covered is that the tour is about their ideas. We want them to feel comfortable sharing their observations and ideas in a way that is respectful of everyone in the group. The museum educator tells the students that it will be boring if they don’t share their ideas. This immediately sets the tone that the students are directing the experience (Figure 2).

After the introduction, the group moves into the gallery and gathers around the first of four stops with their museum educator. Since the museum is not open to the public during school tours, the group is able to quickly navigate and fully engage with a work of art without the distractions of noise and crowds. The tour consists of a mixture of activity and discussion. Some activities incorporate writing, such as sensory poems, while other activities may be more kinesthetic, such as creating a group mobile in front of a piece by Alexander Calder. Students might create a contour drawing in front of Louise Nevelson’s Night Zag Wall or work in small groups to develop a persuasive argument.

The discussion is student driven. When the group arrives at an artwork, the museum educator asks students to take some time to look and then offer observations or ideas. Questions facilitated by the museum educators are open-ended and use conditional language such as “what might she be thinking?” or clarifying questions such as, “what do you see that makes you say that?” Contextual information is gently layered throughout the discussion to validate student observations and interpretations, take them to the next level of understanding, or to redirect their interpretation. The conversation is brought to a
Figure 2  Kindergarten students learn about fulcrum and balance by creating their own mobile. Photography by Stephen Ironside.

Figure 3  8th grade students discuss and debate the imagery in *Our Town*, by Kerry James Marshall. Photography by Stephen Ironside.
close and then a transitional comment is offered before the group progresses to the next artwork. Each tour uses developmentally appropriate language and activity, and every student visits the same artworks (Figures 3 and 4).

Following the tour, students are asked to reflect upon their experience. They are informed that Crystal Bridges is a place for all their friends and family with sponsored general admission, so there is no cost. In addition, each student is provided with a small gift bag which includes a coupon for free entry to a ticketed special exhibition for the student and their family.7

The approach that we use at Crystal Bridges is not unique to art museums. Educators at history museums can pose the same questions of objects, allowing students to infer their possible use and context. Science museum educators often use the scientific process — making an observation, conducting research, forming a hypothesis, and coming to a conclusion — which is very similar to investigating a work of art. No matter what type of museum, when the experience is driven by the observations and inferences of the students, it is more relevant and meaningful.

Figure 4 8th grade students discuss and debate the imagery in Our Town, by Kerry James Marshall. Photography by Stephen Ironside.
Developing the Program and Determining What to Measure

Unlike most museums that rely on a volunteer corps, Crystal Bridges employs paid staff to facilitate school tours. This was initially done out of necessity because there were not enough volunteers available to train in time for the program’s launch; however, it allowed for a higher level of accountability. In an intensive six-week program, newly hired museum educators were introduced to theory and gallery-teaching techniques. They learned to let go of their need to be content experts by practicing Visual Thinking Strategies. They learned how to form open-ended questions by incorporating Artful Thinking Routines into their teaching, and they explored the dialogical model by not asking any questions at all. At the same time, they developed their own interpretations of the artworks through extended looking and research. They rehearsed with each other and with senior staff to refine their introductions and transitions and develop appropriate activities. As pilot tours launched, they observed senior staff facilitating tours and reflected upon the process. Next they delivered tours in pairs and provided peer feedback to one another. When they conducted tours independently staff members and school teachers observed and provided feedback. Finally, they were filmed so they could view and reflect upon their own practice. These new museum educators received constructive criticism graciously, and each strove to obtain a deep understanding of current theory and practice.

While training took place, the research team observed the pilot tours to determine which outcomes to measure. They talked with museum education staff about what they hoped students would gain from the experience. In addition to hoping that students would learn how to discuss works of art and remember information about these works, staff hoped that students’ visual literacy would be enhanced, that they would be interested in returning to the museum and want to further engage with works of art. Based on this formative inquiry, the research team developed an initial survey instrument that measured the following: whether or not students remembered anything about the artwork they discussed; if they were deeper critical thinkers when looking at an unfamiliar work of art; and if they had wished to participate in cultural activities. Additionally, there was a behavioral measure that examined how many treatment versus control group students used the coupon to return to a ticketed exhibition.
The first group of students that visited between March and June 2012 were administered this version of the survey instrument. The results from this group were encouraging: students were very likely to remember nuanced information about the artworks and far more likely to want to visit art museums. The second group of students in the study would visit the museum between August and December 2012. Since the information retention measure was so strong, we wondered about the possibility of measuring additional outcomes. On a typical tour, we ask students to look closely, make inferences, respect new and sometimes conflicting ideas, persist, be curious, and consider alternate perspectives. How could the research team measure if we were successful in cultivating these skills, often referred to as “non-cognitive” skills?

Non-cognitive skills are inter and intra-personal skills that include persistence, conscientiousness, self-confidence, self-control, and curiosity. Research in non-cognitive skills is gaining traction in many fields. The economist James Heckman has been studying character traits since the early 1990s and has found that traits such as conscientiousness rival traditional measures of intelligence in predicting later life success. Psychologist Angela Duckworth has been examining the two traits that predict success in life: grit and self-control. Grit is the tendency to sustain interest in and effort toward very long-term goals, and self-control is the voluntary regulation of behavioral, emotional, and attentional impulses in the presence of momentarily gratifying temptations or diversions. She argues that self-regulation skills are likely a core developmental component of conscientiousness. Although we only work with students for one hour, might we be helping to cultivate social and non-cognitive skills?

In an effort to measure these outcomes, the research team added questions related to tolerance and historical empathy to the survey instrument. Are students who participate in a one-hour facilitated gallery experience more tolerant of other opinions, able to accommodate different perspectives, and able to imagine what life was like in the past? Similar to the measures in knowledge acquisition and critical thinking, these outcomes were significantly different for students who came on a one-hour tour compared to students who did not visit the museum. The gains were higher for students from low socio-economic and/or rural schools. These findings confirmed that the value of engaging with and discussing works of art has the capacity to expand an individual’s interpretive framework, enabling the student to consider perspectives that may be different from their own life experience.
Measuring What Matters

Almost 15 years after entering the profession as a museum educator, this study has enabled me to confirm my intuition about the true benefits of a one-time field trip to an art museum. When students engage with works of art on a facilitated tour, they gain knowledge about that artwork and historical context, they learn to take multiple and sometimes conflicting perspectives, and they increase their visual literacy skills. These are important skills for students to cultivate. While literacy and numeracy are important, the standardized cognitive assessments that measure whether they have been acquired are a narrow measure of predicting later life success. Museums can cultivate many skills and traits that benefit a child’s development, and we ought to measure those things in a rigorous and quantifiable manner. As practitioners, we need to engage with scholars from multiple disciplines — including psychology, sociology, political science, economics, and education — to develop a strong network of researchers and an academic body of knowledge that will inform not only our practice, but policy makers and society about the inherent benefits of learning in museums.

Notes

2. Advocacy groups, including Americans for the Arts, often cite data that is correlational in nature rather than causal. For example, drawing from statistics reported in the 2012 College Bound Seniors report, they graphically present information that claims that students who take four years of arts and music classes while in high school score approximately 100 points higher on their SATs. This does not causally demonstrate that the arts resulted in improved test scores; rather it demonstrates that high achieving students also happen to participate in the arts (http://www.americansforthearts.org/sites/default/files/pdf/get_involved/advocacy/research/2013/artsed_sat13.pdf, accessed July 13, 2014). In addition, the National Endowment for the Arts (NEA) released an extensive report (James S. Catterall, “The Arts and Achievement in At-Risk Youth: Findings from Four Longitudinal Studies. Research Report# 55,” National Endowment for the Arts, 2012, http://files.eric.ed.gov/fulltext/ED530822.pdf, accessed July 13, 2014) looking at the relationship between arts and achievement. Rocco Landesman, NEA Chairman at the time, explicitly states that the research presented in the report is correlational; however, he makes the leap to a causal claim stating that “as the arts are forced to compete for scarce resources, there is no harm in pointing out once again that an investment in the arts will pay extensive dividends.” This research does not demonstrate extensive dividends in academic achievement and furthermore distracts from revealing the true benefits of engaging in the arts.
3. Jay P. Greene is the Department Head and 21st Century Chair in Education Reform at the University of Arkansas. Brian Kisida is a senior research associate at the University of Arkansas. Daniel H. Bowen was a University of Arkansas doctoral student and is currently a post-doctoral research fellow at Rice University.
4. A random control trial (RCT) is often considered the “gold standard” in research. A RCT design matches individuals or groups and then randomly selects who will receive treatment and who will not receive treatment. Because both individuals and groups are, on average, the same, this allows causal inference to be made because the only difference between the two is the treatment. In this study, groups were typically one grade level within a school. Similar groups were matched on demographic characteristics into pairs. Treatment (the field trip) was randomly assigned. The group that served as the control received treatment (the field trip) after the survey was conducted.


6. To truly know if the tour itself was the result of the significant differences in outcomes, the research would have required that there be a comparison between students who took the tour, students who came to the museum without a tour, and students who did not come to the museum at all.

7. This was also worked as a behavioral measure in the research design by Greene, Kisida, and Bowen.


9. Artful Thinking was developed in collaboration with the Traverse City, Michigan Area Public Schools (TCAPS). The program was one component of a larger TCAPS grant from the US Department of Education to develop a model approach for integrating art into regular classroom instruction. The purpose of the Artful Thinking Program was to help teachers regularly use works of visual art and music in their curriculum in ways that strengthen student thinking and learning through the use of thinking disposition and routines. More can be found at http://www.pz.gse.harvard.edu/artful_thinking.php (accessed July 13, 2014).


About the Author

Anne Kraybill is the Distance Learning Project Manager at Crystal Bridges Museum of American Art where she is working to develop an online accredited course for high school students. In her previous position as the school and community programs manager at Crystal Bridges, she developed and implemented all of the Museum’s programming related to K–12 students, teachers, and pre-service teachers as well as community groups. She has a B.F.A. in Photography from Maryland Institute College of Art, a M.A. in Museum Education from The University of the Arts, and a M.S. in Instructional Technology from East Carolina University. She is currently a Doctoral Academy Fellow in Education Policy at the University of Arkansas.