

Art Museums, School Visits and Critical Thinking:
A Case Study of Programmatic Strategies

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Abstract

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A Case Study of Programmatic Strategies

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This research study sought to describe the programmatic strategies used within art museum school field trips to facilitate the development of students' critical thinking skills. Data were collected using a case study approach, with interviews conducted with two members of each institution's education department. Key findings show all case study museums were motivated to focus on critical thinking out of a desire to be of value to schools, and to capitalize on the educational assets of their museum. There were similarities and differences in the strategies used for facilitating critical thinking. For example, all three cases used inquiry-based, gallery discussions to guide students through

the practice of critical thinking, however the specific nature of their inquiry strategies differed. Overall, study results fill a gap in literature on programmatic strategies for impacting critical thinking skill development within school programs in art museums.

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Chapter 1: Introduction

In 2014, the National Art Education Association (NAEA) and the Association of Art Museum Directors (AAMD) commissioned their first ever research study, focused on the following question: “What are the benefits to students of engaging with original works of art within the context of object-based art museum programs that take place during the formal school day?” (Korn & Associates, 2015, p. iv). As part of this research study, Randi Korn & Associates, a Virginia-based evaluation firm, conducted a national survey of the field to define the characteristics of school programs in art museums. Two hundred and seventy art museums responded to the survey. When asked to identify the intended outcomes of their programs, the most commonly identified outcomes were those associated with critical thinking: Observation skills 64%; questioning and investigation 55%; interpretation 54%; and appreciation of multiple interpretations 36% (Korn & Associates, 2015), highlighting the importance that art museums are placing on critical thinking development within their school programs today.

Three art museum school visit programs – all striving to foster students’ critical thinking -have been extensively studied in recent years (Adams, Foutz, Luke & Stein, 2006; Bowen, Greene, & Kisida, 2014; Luke & Yocco, 2010). Perhaps the most well known of these studies was conducted at the Crystal Bridges Museum of American Art, by policy researchers at the University of Arkansas (Bowen, Greene, & Kisida, 2014). The purpose of their study was to determine whether “exposure to arts has an effect on the ability of students to think critically” (p.37). Using a lottery system, Bowen et al. randomly sampled 80, K-12 student treatment groups from an applicant pool of 344. Data were collected via

surveys containing a critical thinking exercise, and administered by the researchers to both the treatment and control students. Students were asked to “analyze an image they had not previous seen” and given exactly 5 minutes to write a “response to the following two questions: (1) what is going on in this painting? (2) what do you see that makes you think that?” (p. 40). Their research results showed that exposure to the arts can have an impact on CT ability. As a whole, the treatment group “improved their critical thinking skills about art by 9.1 percent of a standard deviation relative to the control group” (Bowen et al. p.42). The impact was even higher for students from rural areas (nearly a third of a standard deviation), high poverty areas (17.9%), and minority students (18.3%).

Bowen et al.’s study is frequently cited as evidence that art museum field trips can impact students’ critical thinking skill development. However, what is not clear from that study – or from the others on this topic – is what is happening within these programs that leads to critical thinking outcomes. How are art museums defining critical thinking within their programs? What programmatic strategies are they using to foster students’ critical thinking skills? Why are they using those strategies as opposed to others? This study seeks to fill this gap in research by investigating three research questions:

- 1) Why are art museums focusing on critical thinking skills as an outcome of their K-12 field trip programs?
- 2) What principles and practices are art museums using within their school field trips to facilitate the development of student’s critical thinking skills?
- 3) How have art museums with researched critical thinking programs used the research findings to inform changes within their existing programs?

Chapter 2: Literature Review

There are 3 main bodies of literature that inform this study: 1) research on field trip programs in museums; 2) research on critical thinking-based school programs in art museums; and 3) research on critical thinking instruction in classrooms.

School Field Trip Programs in Museums

There is a substantial body of literature documenting the impacts of school visits to museums. For the most part, this research tries to identify the benefits students derive from such visits, seeking to quantify the unique value of the informal experience. Reported student outcomes from school visits to museums include content acquisition (Anderson, Lucas, Ginns & Dierking, 2000), skill development (Housen, 2001; Lampert, 2006), improved attitudes toward subject matter and museums in general (Witmer, Luke & Adams, 2000) development of racial and ethnic identity (High, 2013) as well as affective outcomes such as empathy and tolerance (Bowen, Greene & Kisida, 2013; Storksdiel, Werner & Kaul, 2006).

Witmer, Luke & Adams (2000) studied the impacts of the National Gallery of Art's multiple-visit program on fifth and sixth graders. *Art Around the Corner* provides students with "sustained sequential experiences looking at and talking about original works of art," seven times during a school year (p.47). Data were collected through interviews and writing samples from student participants and non-participants, as well as observation of student behaviors. Student interviews showed "...that multiple visits positively impact students' attitudes toward visiting museums" (p. 49).

Seeking to identify the outcomes of school visits to natural history museums, Bamberger and Tal (2008) studied the museum visits of six classes of public school, 6th-8th

graders at four institutions. Data were collected through semi-structured interviews with students. Researchers identified three different types of outcomes resulting from the museum visits: content-oriented outcomes, such as acquiring scientific knowledge; social-oriented outcomes, such as communicating knowledge; and interest-oriented outcomes, such as curiosity. Findings showed that students were able to connect knowledge from their museum visit to school science and that students demonstrated an increased willingness to visit a museum again (Bamberger & Tal, 2008).

Desiring to measure the long-term impact of museum field trips on student visitors, Falk and Dierking (1997) interviewed 128 subjects, ages nine to adults over 20, about their recollections of school field trips. Subjects wrote down responses to a series of questions. Results suggested that even after many years, 98.4% could recall one or more things learned on the trip: “There was no evidence that either the strength or scope of recollections significantly declined over time” (p. 216).

Some of the research on school field trip programs in museums has attempted to identify broadly applicable factors for promoting learning during school visits to museums. For example, Dewitt & Storksdeick (2008) asked the question, “What factors impact the effectiveness of school field trips?” and answered their question by reviewing research conducted over the past 30 years on school visits to museums. Dewitt & Storksdeick summarized these findings and indicated the following factors as influences on field trip learning potential:

- Novelty of the setting, which can enhance learning through student anticipation and interest, but which can also “detract from students’ conceptual and possibly

affective learning if novelty of the environment is either too strong or absent altogether” (p.184);

- Student social interaction;
- Students’ prior knowledge about a topic;
- Students’ interests in the topic, motivations and agendas.

Teachers can impact student outcomes as well. In the report, *Factors Influencing Elementary School Children’s Attitudes Toward Science Before, During, and After a Visit to the UK National Space Centre*, Jarvis and Pell (2005) stated,

“Teachers’ preparation and support during the [museum] visit as well as their personal interest had a significant long term effect on children’s attitudes [toward science]” (p. 53).

Kelly (2011, p.9) outlined a review of research that claims field trips are enhanced when teachers:

- Become familiar with the setting before the trip;
- Orient students to the setting and agenda by clarifying learning goals;
- Plan pre-visit activities aligned with curriculum goals;
- Plan activities that support both the curriculum and account for the uniqueness of the setting.

School visits to museums are enhanced when teachers allow students time to discover and explore during the visit. Griffin (2004) documented the importance of students having choice and control over their own learning. As part of her study, Australian students in years 5 and 6 were asked how they would run field trips if they were in charge. Results suggested that students wanted more choice and less structure. Specifically, students suggested strategies such as gathering the whole group together and asking them what

they want to learn, and making the visit a whole day so they could “go where we want and find out what we want to find out” (Griffin, 2004, p. S36).

Yet another theme within the research on school field trip programs points to the importance of social interaction between participating students. In Australia, an interactive science exhibition was used as the basis for a study of young children's behavior and learning in an informal setting (Aubusson, Griffin, Steel & Watson, 2002). During their visit, pre-school age children were observed in order to assess the quality of interaction between peers, supervising adults, and the exhibit. The researchers hoped to better understand the link between play and learning in a hands on exhibit. Aubusson et al. observed that interactions with their peers encouraged more exploration of the exhibit, increasing the possibility that learning might occur.

In summary, much of the research on school visits to museums focuses on factors influencing contextual learning (Falk & Dierking, 1997) and shows that social interaction, prior interest and knowledge, and choice and control all make a difference in what and how students learn (Dewitt & Storksdiel, 2008; Griffin, 2004; Kelly, 2011). Other research documents resultant learning outcomes, including content-related outcomes (Bamberger & Tal, 2008) and affective outcomes (Bowen et al., 2014).

Museum educators looking to current literature to inform their own practice should note that the majority of studies on museum field trips focus on science institutions; science centers, natural history museums, zoos and aquaria. For example, of the studies reviewed in Storksdeick and DeWitt's seminal article (2008), 71% are science-based. Literature on school field trips to art museums is more difficult to find.

Research on Critical Thinking Programs in Art Museums

Art museums have increasingly shifted their school visit programs from a focus on content to a focus on critical thinking skills. In a recent study sponsored by the National Art Education Association, Korn & Associates surveyed 270 art museums nationally to document the nature of the outcomes of their school field trips. Museums were asked to identify up to four intended outcomes from a list of thirteen. Results suggested that the most commonly identified outcomes were those associated with critical thinking: Observation skills 64%; questioning and investigation 55 %; interpretation 54%; and appreciation of multiple interpretations 36% (Korn & Associates, 2015). All but one of the top five outcomes were sub-skills of critical thinking.

Theorist Abigail Housen began researching aesthetic development in the 1970's and after 20 years and over 6,000 cases came to the conclusion that all people, regardless of age pass through certain stages of aesthetic development (Housen, 1999). In collaboration with Phillip Yenowine, then Director of Education at the Museum of Modern Art, NYC, Housen applied this theory to a new curriculum in order to move an individual from one aesthetic stage to the next. Their curriculum is called Visual Thinking Strategies (VTS). VTS consists of a short period of quiet looking at a carefully chosen work of art, followed by a series of three questions that facilitate a group discussion. Question one is "What's going on in this picture?" followed by the question, "What do you see that makes you say that?" and finally, "What more can we find?" (Housen, 1999). The VTS curriculum emphasizes not only aesthetic development, but also critical thinking, with its insistence upon evidence to support observations and interpretations.

Housen has studied the impacts of the VTS curriculum on students' critical thinking.

Her Byron, Minnesota study (Housen, 2001-2002), assessed the effect of Visual Thinking Strategies on 2nd-6th graders. She sampled 100 students, 50% in the experimental group, 50% in the control group, and 12 teachers. By looking at data across multiple assessment tools including interviews, questionnaires, writing samples and teacher logs, Housen found that experimental students spoke about art in a manner comparable to most adult museum visitors. The program also supported increased performance in general content areas like reading.

Three key pieces of research have followed Housen's study, all investigating the impacts of art museum school programs on students' critical thinking skills. Adams, Foutz, Luke & Stein (2006) studied a multiple-visit program for 3rd through 5th graders at the Isabella Stewart Gardner museum, called *Thinking Through Art*. Specifically, this study sought to answer three key research questions: (1) How does participation in the school partnership program influence students' individual critical thinking skills; (2) How does it influence students CT skills within a social context within the museum; and (3) How does it influence student's critical thinking skills on standardized tests (Adams, Foutz, Luke & Stein, 2007).

Treatment students participated in the School Partnership Program (SPP) for at least one year, involving a series of 8 lessons in the museum, guided by inquiry-based discussions of works of art. Treatment students were compared to control students (who did not do the program) on multiple methods including interviews and "untours," in which students were given free reign within one gallery, and their discussions with each other recorded, transcribed, and content analyzed. Analysis focused on instances of critical

thinking within both treatment and control discussions, with critical thinking defined as including various dimensions - Observation, Interpretation, Evaluation, Association, Problem-finding, Comparison, and Flexible Thinking. Results showed that treatment students demonstrated higher instances of critical thinking when talking about art than did control students. More specifically, of the seven CT skills measured, five were significantly higher, including observation, interpretation, association, comparison and flexible thinking.

A similar study conducted at the Columbus Museum of Art, focused on *ARTful Reading*, CMA's single visit program for 5th graders (Luke & Yocco, 2010). The purpose of this study was to evaluate the impact of *ARTful Reading* on participating 5th grade students' critical thinking skills. The evaluators used a matched sample to compare pre-program and post-program writing samples. Three fifth grade classes were shown an image and following specific prompts by evaluators, asked to respond in writing. Students' written responses were coded using a critical thinking skills rubric that measured five dimensions, including Observation, Interpretation, Affect/Emotion, Questioning and Evaluating. Pre- and post-visit comparisons indicated, "The only statistically significant difference was in the amount of observations provided by students" (Luke & Yocco, 2010 p.10). There were no impacts in the other critical thinking dimensions.

Bowen, Greene and Kisida (2014) conducted a recent research study at the Crystal Bridges Museum of American Art. The purpose of their study was to determine whether "exposure to arts has an effect on the ability of students to think critically" (p.37). Using a lottery system, Bowen et al. randomly sampled 80 K-12 student treatment groups from an applicant pool of 344. Data were collected via surveys containing a critical thinking exercise, and administered by the researchers to both the treatment and control students.

Students were asked to “analyze an image they had not previous seen” and given exactly 5 minutes to write a “response to the following two questions: (1) What is going on in this painting? (2) What do you see that makes you think that?” (p. 40).

Their research results showed that exposure to the arts can have an impact on CT ability. As a whole, the treatment group “improved their critical thinking skills about art by 9.1 percent of a standard deviation relative to the control group” (Bowen et al. p.42). The impact was even higher for students from rural areas (nearly a third of a standard deviation), high poverty areas (17.9%), and minority students (18.3%). The Crystal Bridges study was unique because the control group had never been to an art museum before. Prior to the opening of Crystal Bridges, no art museum existed in this part of Arkansas.

In summary, there are a handful of studies that have shown that art museum school programs can foster students’ critical thinking skills, especially observation and interpretation skills (Housen, 2001-2002; Adams, Foutz, Luke & Stein, 2006; Bowen, Greene, & Kisida, 2014; Luke & Yocco, 2010). However, these studies do not clarify what it is about the programs that leads to critical thinking – the characteristics or strategies used within each program that seemingly contribute to the achievement of critical thinking aims. This represents an important gap within the literature, one that this study aims to fill.

Research On Critical Thinking Instruction in the Classroom

While there is little research on programmatic strategies within art museum programs that lead to critical thinking, there is research on critical thinking instruction in formal education that can inform the museum field. Most relevant is a meta-analysis by Abrami, Bernard, Borokhovski, Waddington, Wade and Persson (2014). The purpose of the study was to summarize “the available empirical evidence on the impact of instruction on

the development and enhancement of critical thinking skills, dispositions and student achievement” (p. 1). Abrami et al. defined critical thinking as “the purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, as well as explanations of the considerations on which that judgment is based” (p.3). Four main questions were addressed in the meta-analysis: “Can critical thinking skills and dispositions be taught? What are some promising strategies for teaching students to think critically? Which students benefit from critical thinking instruction? Are there curricular areas for which CT instruction works best?” (Abrami et al., p.9)

Methods utilized in the meta-analysis included coding by two raters, of abstracts and full-text research reports. Decisions about whether to include studies in the review were based on reading an article’s full text, coding according to a framework, and agreement by the two reviewers. Of the 7,524 records identified through literature searches, 684 met the inclusion criteria. Studies were included only if they met several criteria, including comparative methods (either control group and experimental group or pre-test and post-test), at least a 3-hour treatment, and participants older than 6 years old.

At a broad level, findings from this meta-analysis suggest that critical thinking can indeed be taught. More specifically, findings point to factors within critical thinking instruction that make a difference. After dividing the effect size into categories of subject matter, educational level, and intervention duration, researchers found no differences in the effects of critical thinking instruction according to subject matter, age and duration of treatment.

Impact on CT growth *did* however vary by the type of instruction utilized. Abrami et al. identified four different types of critical thinking instruction: individual study, dialogue,

authentic and anchored instruction, and mentoring. According to the authors, individual study occurs when students study alone and solve abstract problems on their own.

Dialogue is when individuals are discussing a particular problem together and it takes many forms. Authentic or Anchored instruction looks like “role-playing, playing games, simulations, applied problem solving and case studies” (p.17). Mentoring is a personalized interaction between someone skilled and knowledgeable and a novice. Results from Abrami et al.’s meta-analysis suggested that two of the instructional variables, Dialogue and Anchored instruction, produced significantly larger positive effect sizes than Mentoring. However, combining Dialogue, Anchored instruction and Mentoring together resulted in the highest effect size, beating a combination of Dialogue and Anchored instruction without Mentoring.

It was not the opinion of the authors that there exists a sort of “magic recipe” for instruction of CT skills. They suggest that their results point to the need for “further pursuit, exploration and refinement of these especially successful strategies”(p. 29).

Summary

The literature on students’ learning within school field trips to museums is exciting in its scope. A child participating in a museum trip with peers may learn new facts and concepts, develop thinking skills, improve attitudes toward various subjects, develop racial and ethnic identity, as well as affective traits like empathy and tolerance. The factors impacting student learning are broad. Research has shown that in addition to the planning, preparation and execution by museum education departments, teachers as well as the students themselves affect the amount of actual learning that occurs.

The majority of the research on learning from museum/school visits sits in the science, technology, engineering, and math realm. Although research into art museum field trips exists, most of it focuses on what is learned rather than programmatic strategies for impacting desired learning. This case study seeks to fill the gap in the literature related to art museum field trips intended to develop students' critical thinking skills.

Chapter 3: Methods

The purpose of this research study was to describe the programmatic strategies used within art museum school field trips to facilitate the development of elementary students' critical thinking skills. The study was guided by three research questions:

- 1) Why are art museums focusing on critical thinking skills as an outcome of their K-12 field trip programs?
- 2) What principles and practices are art museums using within their school field trips to facilitate the development of student's critical thinking skills?
- 3) How have art museums with researched critical thinking programs used the research findings to inform changes within their existing programs?

In order to answer these questions, this study utilized a case-study approach wherein interviews were conducted with multiple staff at each case study site (Yin, 2008). Additional contextual information was gathered from case study museums' websites, as well as research reports related to the programs under investigation. This chapter describes sampling procedures, methods used for data collection and analysis, and limitations of the study.

Sampling

Case Study Art Museums

Three field trip programs at three separate art museums were selected as case studies for this research. They included the Columbus Museum of Art, in Columbus, Ohio; The Crystal Bridges Museum of American Art, in Bentonville, Arkansas; and The Isabella Stewart Gardner Museum, in Boston, Massachusetts.

Museums were chosen based on two key criteria: 1) they all have well-established elementary school field trip programs designed to foster students' critical thinking skills; and, 2) they have researched their program and found evidence to suggest that students' critical thinking skills are in fact positively impacted as a result of participation in the program (Adams, Foutz, Luke & Stein, 2007; Bowen, Greene, & Kisida, 2014; Luke & Yocco, 2010).

Professional Participants

All interview participants in this research study were drawn from the three case study museums. The committee chair sent an initial email to a professional contact in the Education Department at each of the institutions. Those individuals were asked to participate in the study, and to suggest one other applicable individual at their institution, so that two professionals at each museum could offer multiple perspectives. In order to participate, individuals needed to be part of the development or implementation of the field trip program under investigation. After each person agreed to participate, a mutually agreeable time for a phone interview was calendared.

Data Collection

Telephone interviews were conducted with 6 museum professionals in March 2015. Interviews began with the researcher reading a consent paragraph to each interviewee and participants agreeing to participate. Interview questions were grouped under the subheadings of the three larger research questions and every participant was asked each question. See Appendix A for a complete copy of the interview guide.

Phone interviews with study participants lasted approximately 45 minutes, and were recorded. Following the interview, a digital copy of each recording was sent to and transcribed by Verbal Ink, a professional transcription agency.

Data Analysis

Interview transcripts were coded for dominant themes within each question. The researcher created a spreadsheet, grouped each interview question and the answer given by each of the six interviewees. The spreadsheet was then used to look across responses to identify similarities and differences across cases. Take question 5D, “Who facilitates the program?” as an example. CMA respondents said docents and schoolteachers facilitate their program, Crystal Bridges said full and part-time museum educators, and interviewees from the Gardner said their program is facilitated partly by museum staff and partly by the students’ teachers. Looking at all of the responses, the researcher was able to see that CMA and Gardner are similar in that both institutions utilize teachers, and Crystal Bridges is the outlier with the program facilitated solely by museum staff.

Limitations

Limitations in this study exist primarily within the nature of the sample. A case study of three art museums is not a large enough sample to give a complete picture of field-wide practice. Looking only at museums with researched programs gives us examples of what *might* produce improved critical thinking skills in student visitors, but misses potential insights gained by also examining non-researched strategies at other institutions.

Another limitation lies in the challenge of linking a specific cause and effect to the success of the case study programs. Many influences factor into the success or failure of school visits, therefore it is not possible in this study to link any one element of a case

study's programs to critical thinking achievement. Art museums looking for a model CT program to inform practice at their own institutions should keep this in mind.

Additional limitations exist because human memories are fallible. Interview answers relied on the personal experience and memories of the interviewee. In the case of the Isabella Stewart Gardner Museum's participants, this meant remembering a process that began in 2006, nearly a decade ago.

Chapter 4: Results and Discussion

This chapter describes the results of this research study. It begins with descriptions of each of the institutions studied, and their researched elementary school field trip programs. Findings are then presented according to each research question.

Case Study Descriptions

The Columbus Museum Of Art

The Columbus Museum of Art (CMA) is located in Columbus, Ohio and serves approximately 200,000 people annually. Originally opened in 1875, under the name Columbus Gallery of Fine Arts, the CMA has retained its location, but will have expanded to 150,000 square feet following the October 2015 opening of a new 50,000 square foot wing. The CMA's collection consists of mainly modern art. Their website states, "Art begins a conversation within ourselves and our community." The importance the CMA places on conversation, as well as the museum's mission to foster creativity through critical thinking and imagination, influences the entire culture of the museum. This is evident in their Wonder Room, a gallery space designed to foster imagination, experimentation and storytelling through hands-on activities, encouraging interaction between family groups and visitors of all ages, as well as central to the CMA's field trip program.

The CMA's field trip program is called *ARTful Reading*. It serves all 5th grade students in the Columbus City Schools, bringing them to the museum as part of a multiple-faceted program focusing on fostering critical thinking skills through talking and thinking about art. Specifically, the program includes a docent-facilitated pre-visit to the classroom, a 50-minute tour at the museum, a studio experience at a local high school, and a docent-

facilitated post-visit to the classroom. The goals of the *ARTful Reading* program are as follows:

- Promote visual literacy through critical thinking;
- Facilitate a creative studio experience that incorporates key concepts explored at the museum;
- Foster conversation about and understanding of color, light, and states of matter utilizing Ohio state standards for art and science;
- Provide exposure to authentic art in a positive and engaging art museum experience.

ARTful Reading was evaluated by the Institute for Learning Innovation, a nonprofit research and evaluation organization based in Annapolis, MD (Luke & Yocco, 2010). The study found that the program improved observation skills, one of several CT sub-skills included in Luke's critical thinking skills rubric, in treatment students. Students who participated in the program made more frequent and more detailed observations about what they saw in a work of art than did students who had not participated in the program.

Crystal Bridges Museum of American Art

Crystal Bridges is located in a serene, wooded ravine in Bentonville, Arkansas and first opened its doors in 2011. Along with the 200,000 square foot museum, the 120 acres museum property includes 3.5 miles of walking trails. Crystal Bridges' permanent art collection spans five centuries of American masterworks ranging from the Colonial era to the current day. Through grants, admission to the museum is free.

The field trip program at Crystal Bridges is called the *Willard and Pat Walker School Visit Program*. Teachers must submit an application to be considered for a free school visit.

A grant from the Willard and Pat Walker Charitable Foundation covers the cost of transportation, lunch, goodie bag for each student, a museum educator per every 15 or so students, and up to a \$250 subsidy for substitute teacher fees. The program serves any school group from Kindergarteners through 12th graders. The majority of visitors are from the elementary grades.

The program involves a one hour guided tour, pre- and post-visit materials for classroom teachers, and a 30-minute lunch provided by the museum's restaurant. There are several themed tours to choose from. All school tours utilize common core standards and all incorporate inquiry and group discussion to accomplish learning objectives.

An evaluation study of Crystal Bridges' school visit program showed significant impacts on participating students' critical thinking as a result of a single museum visit (Bowen, Greene, & Kisida, 2014). Specifically, students who participated in the program demonstrated higher instances of observation and interpretation when writing about a work of art as compared to students who did not participate in the program.

Isabella Stewart Gardner Museum

Isabella Stewart Gardner, a wealthy woman of Victorian America, collected more than 2,500 pieces of art and objects from different cultures and time periods ranging from ancient Rome through the 19th century. February 23rd, 1903, in Boston Massachusetts she opened her palace style museum to the public. Gardner's desire was to provide a place for Americans to access and enjoy important works of art. Her aim was not to impart large amounts of art knowledge, but to instill a love of art in her guests. The museum structure remained relatively unchanged until a new wing was completed in 2012.

The Gardner Museum offers a rich variety of public programs that generate in-depth

experiences with works of art. Their school partnership program, *Thinking through Art*, is one such program. Primarily focused on Boston City schools that are within walking distance from the museum, the Thinking Through Art program focuses on five schools. During the study, participating classes in 3rd through 5th grade visited the museum four times during the school year. Each visit consisted of a gallery tour, as well as an art-making activity in the studio.

Unlike the other museums in this case study, The Gardner museum serves families of students in their program by offering one family event per school year as well as a year-long free family pass to the museum. They believe their family event provides an opportunity for students to become facilitators of learning as they guide their own family group through the museum.

Findings in a study of the ISGM's school partnership program revealed that students who participated in the program demonstrated more instances of critical thinking when looking at and talking about works of art than did students who did not participate in the program (Adams, Foutz, Luke & Stein, 2006; Luke, Foutz, Stein & Adams, 2007).

These three case studies were selected because they have well-established, researched school field trip programs that have been shown to foster critical thinking skills in participating students. However, what is not well understood are the programmatic strategies used within these programs to facilitate critical thinking skills. To what extent do these programs share common philosophies and approaches to fostering students' critical thinking skills? Are there practices common to all three case studies that other museums can adopt to achieve similar results? These questions are explored next.

Research Question 1: Why are art museums focusing on critical thinking skills as an outcome of their K-12 school fieldtrips?

Each of the case study museums listed a variety of motivations for focusing on critical thinking as an outcome of their field trip programs. However, two common themes emerged across the cases: 1) the desire to be of value to schools; and 2) the desire to focus on the type of learning that their art museums can best facilitate.

The Columbus Museum of Art began thinking in earnest about critical thinking as part of a desire to better articulate their public value. They were about to embark on a \$90 million dollar capital campaign, and in the words of their Director of Education, “What that meant was a lot of questions about, where do we make impact? How do we make impact? What is the role of museum education in this museum?” What followed was not just a list of programs, but a sincere desire to consider the intentionality of what they do and to find evidence of perceived and desired outcomes. By late 2007-2008, Education staff had developed a trio of outcomes for their various programs - critical thinking, imagination and creativity. Creativity was at the center, “but we couldn’t do that unless we cultivated critical thinking skills, and worked to develop the imaginative capacity of our guests or community. So all three pieces worked in tandem.” For CMA Education staff, then, the focus on critical thinking skills within their field trip program allowed them to more tightly link the program to their institutional mission, a mission focused on creativity, and supported specifically through developing imagination and critical thinking.

Also at this time, the CMA was getting a lot of requests from schools to teach specific school subjects. Teachers would say, “We can only bring our students if you can demonstrate that you have a tour program that will increase math scores, or reading scores.” “We said, “This is ridiculous, this isn’t what we do best.”” Data from this museum

suggests that in part, their focus on critical thinking also came about through a realization that catering to schools' demands did not allow them to maximize their own unique assets. Time constraints of trying to connect school visits to teacher requests, and the emergence of a national focus on 21st century skills, which included critical thinking skills, as well as promising research done on CT development at other museums, led to a focus on critical thinking.

Crystal Bridges had the luxury of being a new museum when they began their school field trip program. They were not trying to redo an existing program, fighting against long-term museum culture, or expectations from local schools. Because of this, then Director of Education and Research in Learning at Crystal Bridges, sought out existing, researched programs in developing their current program. She wanted to "put everything [she] believed as best practice" into their program: "And so from the very beginning I wanted the program to be student centered, student driven where we used inquiry, we used lots of questions...to get deeper inferences, and what you'd call critical thinking." Like the Columbus Museum of Art, Crystal Bridges also felt that developing critical thinking was something that art museums can do well: "It's just sort of inherent in what we do."

When asked why "the museum chose to focus on critical thinking specifically, as opposed to other outcomes for students," the former Director of Education and Research in Learning replied, "Arkansas like many other states was adopting common core. Teachers didn't really know what to do in their classroom and the Gates Foundation had...these really rich resources [that] were pretty heavy on critical thinking...as outlined by the standards." By teaching critical thinking skills to students on school tours, Crystal Bridges felt they were able to establish themselves as a valuable resource to teachers.

According to an Education Department staff member, The Isabella Stewart Gardner Museum's eclectic collection made rich curriculum connections difficult: "We're dealing with a static collection that the founder was not necessarily thinking about K-12 education when she was developing [it]." Prior to the *Thinking Through Art* program, the museum created school program experiences based on what teachers said they wanted. During 2003 to 2005 they started comparing what teachers were asking for with what their collection could provide: "So there's a limit in terms of what we can do with content and curricular connections."

When the Esther Stiles Eastman Curator of Education came on board, "she started to notice that other things could really happen." She led a shift in focus from content connections to a focus on skills development. One of the skills they believed they could develop in students was critical thinking. Thus, the Gardner moved away from connecting their collection to curriculum instruction, and instead emphasized inquiry strategies: "It was an opportunity to offer something that was very attractive to schools."

ISGM's Director of School and Teacher Programs recently posted on an NAEA discussion board (naearesearchcomission.hoop.la/topic/more-questions-than-answers) to say, "Assessing students' critical thinking has been the main way that we research student learning because it is useful to many K-12 stakeholders, especially the students themselves. Are they noticing how their skills change over time? If not, how could we help make their thinking more visible?"

In summary, all three institutions chose critical thinking as an outcome of their school programs because (1) they believed that by so doing, they would be of value to schools by focusing on the acquisition of 21st century skills, which include critical thinking

skills; and (2) they believed that by doing so, they would be leveraging the educational assets of their museum in ways that previous emphasis on curriculum and standards did not.

Research Question 2: What Principles and Practices are Art Museums Using Within Their Elementary School Field-Trips to Develop Critical Thinking Skills?

Principles and practices discussed in this section include a) how critical thinking is defined; b) program components; c) program facilitation strategies; d) program facilitator training; e) motivations behind choosing particular facilitation strategies for fostering critical thinking; f) teacher preparation; and; g) perceived strengths and weaknesses of facilitation strategies.

a) How critical thinking is defined

There doesn't appear to be a field-wide consensus on the definition of critical thinking skills. A rubric by Luke, Stein, Foutz & Adams (2007) included observation, interpretation, affect/emotion, questioning, evaluating, and evidence/support as critical thinking skills one might test for in evaluating the impact of art museum programs.

The Columbus Museum of Art defines critical thinking as, "The purposeful and reflective process of synthesizing, analyzing, and evaluating." The Crystal Bridges Museum of American Art defines critical thinking as a student driven process where inferences are derived from a process of inquiry. The Isabella Stewart Gardner Museum defines critical thinking skills in their 2007 publication, *Thinking Through Art*, as, "Learning to Look'- observation, inference, speculation, etc" (Burchenal & Grohe, p. 112) as well as being able to provide evidence for those inferences.

These data suggest that the three case study institutions share common elements in their definitions of critical thinking. All three museums emphasize critical thinking as a

reflective process, one that involves some form of either analysis or inference based on observations of artwork. Additionally, ISGM and CMA included the practice of providing evidence or proof in their definitions of CT.

b) Program components

The Columbus Museum of Art described their program as “multi-faceted.” It consists of a pre-visit to the school where students are introduced to the process of Observing, Describing, Interpreting and Proving (ODIP), setting the stage for the museum visit. Part two is those same students coming to the museum for a 50-minute docent led experience in the galleries. The students spend a considerable amount of time with each work of art, resulting in about 3-4 deep experiences rather than a quick tour of many works. Finally, learning is extended back at the student’s school (previously at a nearby high school) through a studio based art experience facilitated by a classroom teacher or art teacher.

Crystal Bridges leads most school visits before the museum opens to the public, providing a more focused experience for visiting classes. The museum visit consists of an introduction to the museum and the tour, as well as four stops that are discussion-based and student-centered. The gallery discussion follows a theme from available offerings that the classroom teacher has chosen ahead of time. Then classes have lunch and are free to continue a self-guided tour of the museum and its grounds: “On most tours, some sort of activity, whether drawing, kinesthetic or written” is provided to allow less vocal students an outlet of expression for their interpretations.

The *Thinking Through Art* program at ISGM is a multiple-visit program. It is “structured as eight lessons or four pairs of lessons that were done throughout the year...A pre-visit in the [school] classroom would take place on Monday or Tuesday, and then the

museum visit would coincide with a museum visit that would happen later that week, Wednesday through Friday.” Both of these visits use the standard VTS questions of “What’s going on in this picture?”, “What do you see that makes you say that?” and “What more can we find?”. Most of the visits are conducted before the museum opens to the public.

Analysis of these three different programs suggests they have both similar and different components. They are similar in their facilitation of an inquiry-based discussion of works of art in the gallery. Both Columbus’ and Gardner’s program include use of the school campus and museum galleries. Differences include the duration of the program – CMA has a pre- and post-visit component together with the museum visit; Crystal Bridges has pre- and post-teacher materials, but only one single visit experience; and ISGM is a multiple visit program with 8 different lessons.

c) Program facilitation strategies

The three programs studied here use different types of facilitators. At the CMA, the pre-visit and the museum-visit are facilitated by a museum docent, while the post activity is facilitated by a teacher at the school, originally the classroom teacher, but now an art teacher. Crystal Bridges pays full and part-time museum educators to facilitate their tours. At the Gardner the program is facilitated “partly by museum staff, and partly by the students’ teachers themselves.”

In terms of specific strategies used to foster critical thinking within the programs, all three programs use some version of inquiry to engage students in discussion about works of art. However, the nature of inquiry and the way in which it is implemented varies across sites.

The Columbus Museum of Art was influenced by Harvard's Project Zero's thinking routines as they created an inquiry-based strategy they call ODIP - Observe, Describe, Interpret, Prove: "ODIP is kind of the home court thinking routine." During the school tour the facilitator brings students to an artwork and leads them through a discussion using prompts. An **O**bserve prompt may be, "Look closely. What information is there?" A **D**escribe prompt may be, "If you were asked to explain this work of art to someone by phone, what would you say? What descriptive words best describe this work?" An **I**nterpret prompt may be, "What's the story?" or "What is the artist trying to say?" And finally, during **P**rove, a student may be asked, "What clues did you use to come to that conclusion?"

Crystal Bridges described their strategy as a dialogical model, influenced by the work of Rika Burnham and Elliot Kai-Kee. This model is similar in many ways to ODIP. It is a social constructive way of making meaning: "Dialogic looking involves viewers in exchanging observations, associations, and memories with a partner; maintaining a second and internal dialogue as they try to understand the images encountered" (McKay & Monteverde, 2003). Like CMA, Crystal Bridges also integrates visual thinking routines out of Harvard's Project Zero, like Think-Pair-Share, and although their "tours are not VTS based...[they] will definitely use some of those questions, 'What do you see that makes you say that?'"

During tours, students were divided into groups of 10-15, then given an introduction that explained the tour process, the value of sharing their ideas and respecting others. Tours aren't scripted and groups usually make four stops during an hour tour. Former Crystal Bridges Director of Education mentioned, "A typical stop might include

some deep looking and discussion” or a sensory poem activity where you’re looking at an artwork and imagining you’re in there. “When appropriate, museum educators supplied historical and sociological contexts of the works in order to facilitate greater student understanding” (Bowen et al. 2013).

At the Isabella Stewart Gardner Museum a strict following of the Visual Thinking Strategies (VTS) model is utilized. VTS was developed out of the research of Abigail Housen. VTS is a small group, inquiry style method of teaching critical thinking skills. Program facilitators consistently ask three key questions: “What is going on in this picture? What do you see that makes you say that? What more can we find? Initially some content was also included in the ISGM program, but preliminary study results showed students weren’t retaining any of the content. They now solely utilize the VTS questions.

Similarities between these three strategies are that they all encourage students to look closely at works of art, and to describe what they see. While CMA and ISGM seem to emphasize the importance of providing evidence to support interpretations, Crystal Bridges appears less concerned with evidence within their strategy. In addition, Crystal Bridges seems to include more content emphasis within their school program than do the other two case study sites.

d) Program facilitator training

At both the CMA and ISGM, program facilitators are trained in a manner that closely models what they will be expected to do with students. This is unlike Crystal Bridges,

where facilitators are trained more like certified educators, feeding them large quantities of research and learning theory to digest.

Docents at the CMA meet every four to six weeks. Like students attending school tours, training occurs before the museum opens to the public. Training sessions are never more than two hours, and include “interactive conversations” between docents and education department staff. A CMA staff person said she “likes to encourage peer to peer interactions because they [docents] don’t have a lot of time to share their ideas with each other.” This style of peer collaboration is not unlike students communicating ideas during a museum visit.

Art teachers from the schools that send students on tours are trained to facilitate the extended activities they provide students on their return to school. Their training is to help shift teachers toward the kind of art projects “we were wanting them to do...to extend thinking,” said another staff person. They started by “sending them very fun, short videos,” available on YouTube and also provide professional training. Again, CMA uses modeling and examples, in this case through a video, to teach facilitators what to do.

ISGM’s School Partnership Manager facilitates most of the Gardner Museum’s school gallery visits. Abigail Housen and Philip Yenowine, the co-founders of Visual Thinking Strategies, trained this staff person in the VTS method. She also attended a series of professional development institutes affiliated with VTS. She in turn trained the other staff that worked with her. Both the School Partnership Manager and another staff person have “gone through several layers of coder and research training with Abigail Housen, for collecting, analyzing and writing about the critical thinking growth.” None of the other museums in this study train facilitators to conduct research.

Teachers in ISGM partnership schools are trained in the VTS method during professional development sessions throughout the year. A museum educator visits each classroom twice a year to offer additional support and coaching to teachers.

Data from Crystal Bridges staff suggest two components of training. One staff person spoke of training their initial group of facilitators in a sort of “mini-museum boot camp” over a period of six weeks. Her belief was that educators should have access to the same materials she had as a professional, and that primary and secondary sources were valuable to read. She pulled scholarly articles off J-STOR and provided at least two hours per day for reading. Facilitators read many articles on museum pedagogy and how people learn in general, prior to role-playing in the galleries. During the role-play component of training, there were a lot of peer observations and shadowing followed by constructive input. At one point educators were videotaped giving a tour so they could do some self-reflection.

The other staff person at Crystal Bridges spoke specifically on the tour portion of training. He said that their museum educators come from different backgrounds. Some have museum experience, some have teaching experience, while others have studio experience. They used VTS as well as other active listening and thinking strategies during training. Going over content is also part of tour facilitation preparation at Crystal Bridges, because unlike CMA and ISGM, they interject content during the inquiry portion of school visits.

e) Motivations behind choosing particular facilitation strategies for fostering critical thinking

Data from these three case studies suggest varying motivations for using particular facilitation strategies to foster critical thinking. At the CMA, the Director of Education noted

that, “Thinking Routines are incredibly memorable, easy for students to grasp and easy for docents to grasp onto.” They chose to create their own thinking routine (ODIP) because in their opinion, existing practices like Visual Thinking Strategies were too narrative for their mostly modern collection. It is much easier to answer the VTS question, “What is going on in this picture?” after looking at an image containing a person, as one might speculate what they are thinking, doing, etc. based on facial expression or setting, whereas an abstract image with no discernable figures may be more difficult to decipher.

Staff at Crystal Bridges referenced several influences to their current practice, including reliance on the creativity of their team. Consideration for the developmental level of their visitors was considered when choosing a particular strategy. For example, classes of middle to high school students are more likely to do a written response to an artwork than a young elementary group. The former Director of Education said they began with a backward design approach, “so what is it we want these kids to walk away with after this tour, and then going backward from there and building the curriculum to support that end goal.” She said, “there’s really no *one* way to do things” and “we did a lot of reflection” after trying out various kinds of engaging activities.

A staff member at the Gardner answered this question by stating, “to the best of my knowledge it [VTS] is the only education strategy that evolved out of research. And then it had a track record that pointed to its success.” Her colleague added that Visual Thinking Strategies coincides nicely with the type of museum they are: “We don’t have labels up next to the art work. We wanted a teaching method that would encourage students to share their own ideas. So [we were] really just looking for a pedagogy that would really encourage as much meaning making as possible.”

Perhaps the reason that all three case study museums chose their strategies for different reasons is because their education departments understood their unique needs and chose to focus on those needs. Columbus accommodated their modern collection, Crystal Bridges looked at the needs of their student visitors and chose the strategy to meet those needs, and the Isabella Stewart Gardner chose a strategy that would add meaning due to lack of gallery labels.

f) Teacher preparation

Case study institutions differed in terms of how they prepare teachers for their critical thinking-based field trip programs. Both CMA and ISGM offer professional development for teachers, focused in part on understanding and fostering critical thinking. For example, Columbus Museum of Art offers professional development days for teachers. At these events, teachers engage in the same activities their students will partake in, thus familiarizing them with the upcoming visit. Teachers are allowed time in the galleries, and the inquiry strategy used by program facilitators is shared with them (see more about this strategy later in this section).

At the Gardner Museum, preparation consists of extensive professional development workshops that are done with teachers over time, in part due to the fact that the *Thinking through Art* Program is a multiple-visit program. Teachers are trained in the Visual Thinking Strategies Method. VTS training consists of two parts. During the initial training, teachers assume the role of student as they participate in a VTS session directed by a certified VTS trainer. At The Gardner, the Director of School and Teacher Programs trains teachers. Once familiarized with the VTS curriculum, teacher trainees take turns leading each other in a VTS discussion. The VTS trainer is always present to coach and

correct during the training sessions. In addition to the initial training that the teachers receive, Gardner museum educators visit the classroom of each teacher and usually co-lead or coach them as they begin to use the VTS method in their classrooms. Initial teacher trainings are usually from three to six hours. The purpose of the training is “so they know what to expect in terms of the teaching methodology and what the museum looks like.” Then teachers are given a binder of materials that is full of documents such as one called ‘What to Expect’.

Crystal Bridges focuses less on professional development for teachers and more on providing them with pre-visit materials, which includes works of art to look at, with very explicit instructions *not* to provide any information to the students beforehand. They also produced “a video that they could play to kind of prepare the kids for what the experience was going to be and gain that emphasis...on talking.” One of their Education staff stated that, “even when we had the pre-visit and post-visit stuff, that I was creating, the majority of the teachers really only took advantage of the video.”

g) Perceived strengths and limitations of strategies for fostering critical thinking

All three museums saw growth in students’ confidence or students’ perceptions of self as a strength of their program strategy. A staff person at the CMA spoke of the program’s ability to get even the more shy students to participate, while another spoke of the encouragement of critical thinking permeating outside the program, and into the whole museum. Similarly, the interviewees from Crystal Bridges believed that their program’s ability to “engage all or most of the students,” and the fact that “students really see that they are making meaning” as important aspects of their program. One staff member also opined that the social aspect of their program is particularly effective. A staff person at the

Gardner Museum of Art credited the learner-centered aspect of their program as well as its ability to boost student's confidence in personal meaning making as effective. Unique to ISGM was one staff person's perception that what was most valuable about their program was the development of evidentiary reasoning through the question, "What do you see that makes you say that."

All three museums identified resistance to trust or trying something new as a limitation. In particular, both CMA and Crystal Bridges cited facilitator pushback. Although most docents were on-board, there still remained a minority of CMA docents that were more comfortable with the "old way" of leading tours - tours that were more content based. A Crystal Bridges staff person shared a similar thought, saying that docents have their own take on things, but when you have a student-centered program, "you have to wait out the silence and sometimes that's a difficult thing." Another staff person said, "I think these strategies are difficult for a lot of people to embrace initially, and if they're done incorrectly it can make for a very confusing experience for the kids."

Both staff from ISGM cited less than 100% buy-in to the program as a potential weakness, but unlike CMA and Crystal Bridges, they were not talking about their docents. The Director of Education said that she noticed older [high school] students who are used to the method of "teachers telling them stuff and there being a *right* answer" having a hard time trusting that the process is really about what *they* think. Another staff member stated that the shared responsibility with classroom teachers who were teaching some of the lessons on their own, made individual teacher commitment a variable in the program that could potentially limit the amount of critical thinking growth in those teacher's students.

Research Question 3: How have art museums with researched, critical thinking field trip programs used the research findings to inform changes within their existing programs?

All of the case study museums have been researched and reports published. The findings on all three programs showed enhanced critical thinking in treatment groups over control groups (Adams, Foutz, Luke & Stein, 2007; Greene, Kisida & Bowen, 2014; Luke & Yocco, 2010). What follows are study results relating to how case study sites have used these research findings to make changes to their program, especially around how critical thinking is facilitated.

All three of the case study museums said they have made changes to their program as a result of research findings.

CMA suspected that their program would be more effective at improving CT skills if they had complete docent support. It was a bit of a painful transition, according to staff. Following the research results, the museum made sure the expectation to use one of the prescribed thinking methods was clear to all facilitators. It would be interesting to retest their program to see if complete docent buy-in, thus a more consistent use of thinking strategies increased the impact of CMA's program.

In addition, CMA staff became more intentional in their work with schools. They increased focus on school partnerships, working on developing a relationship of trust with them. Through this relationship, the CMA could better advocate for their program and set realistic expectations by the schools: "We are not aiming to, you know, improve science, but we're going to do everything we can to improve critical thinking." The museum focused relationship building at all levels within schools and government. "At the highest level now, they value what the museum brings to the table."

At the same time, the museum heavily increased its professional development, offering more training opportunities for school teachers, as well as an intensive summer program, open to any professional across the world, wanting to incorporate more critical thinking and creativity into their teaching.

The only programmatic change described by staff at Crystal Bridges happened after preliminary study results. Preliminary results showed that teenagers were not enjoying the programs, and were less inclined to return. The activity of sharing their thinking with the group seemed to be a barrier with secondary students:

I think part of what was happening was they just...didn't feel like they had the autonomy they needed. They didn't feel like they could trust us to talk and so, we did create some more open-ended kinds of activities...and ways [like pair share] for them to talk with each other rather than having to talk in front of everybody else.

Crystal Bridges staff were able to improve their program outcomes with regard to secondary visitors by making their museum educators aware of the preliminary research results, and giving educators alternative tools to implement thinking with secondary student visitors.

After year one of their IMLS grant “demonstrated that students [participating in the Gardner program] were not retaining specifics about the artworks that were used, or in some cases recognize galleries they had visited, we decided to drop contextual information about the artworks and museum from our curriculum.” Prior to the switch, classroom teachers’ overall curriculum largely drove the museum program curriculum. Afterward, the Gardner chose to focus on artworks that would resonate with the students, artworks that students could easily relate to their prior experience and knowledge. The switch to strictly a VTS program occurred at this time. After the commitment to VTS, and after the third year

of the grant, significant growth in critical thinking was found.

In 2007, when the study results were published, the Gardner was inundated with requests to train classroom teachers in VTS, leading to a major shift in the program. Secondary teachers may see 100 different students per day so the museum saw an opportunity to expand their impact by training teachers to practice VTS in the classroom. This shift also focused the program more on middle and high school students.

The Gardner seemed empowered by their research findings. Another change that followed their original grant study was to include evaluation in all of their programs going forward. Following the shift to older grades, an analysis of the one-year impact of using VTS with 8th graders showed “triple CTS growth orally and double CTS growth in writing by our partner students, a higher rate of growth than non-participating students.”

CHAPTER 5: Conclusions and Implications

The purpose of this research study was to describe the programmatic strategies used within art museum school field trips to facilitate the development of elementary students' critical thinking skills. Using a case study approach, three art museums with researched K-12 field trip programs were analyzed, all of which have been shown to improve participating students' critical thinking skills (Adams, Foutz, Luke & Stein, 2006; Bowen, Greene, & Kisida, 2014; Luke & Yocco, 2010). Three questions guided the research: (1) Why are art museums focusing on critical thinking as an outcome of their elementary school field trip programs; (2) What principles and practices are art museums using within their elementary school field trip programs to facilitate the development of students' critical thinking skills; and (3) How have art museums with researched critical thinking field trip programs used research findings to inform changes within their existing programs?

Conclusions

Findings from this study indicated that all three institutions chose critical thinking as an outcome of their school programs because (1) they believed that by so doing they would be of greater value to schools by focusing on the development of 21st century skills, which include critical thinking skills; and (2) they believed that by so doing, they would be leveraging the educational assets of their museum in ways that previous emphasis on curriculum had not.

This study compared each institution's definition of critical thinking, program components, program facilitation, facilitator training, motivations behind choosing particular CT facilitation strategies, teacher preparation, and perceived program strengths

and weaknesses. Data suggest that the three case study museums share common elements in their definitions of critical thinking. All three museums emphasized CT as a reflective process, one that employs observation followed by analysis or interpretation. However, ISGM and CMA also included the need to consider evidence within their definitions. ISGM did so in their question, “What do you see that makes you say that?” and CMA in the “prove” portion of ODIP.

Analysis of the three different programs suggests they have both similar and different components. Similarities include facilitation of an inquiry-based discussion of works of art in the gallery. At all of the case-study institutions, students engaged with an artwork for an extended period of time, utilizing 3-4 pieces over the school visit vs. a large overview of the galleries. Columbus and Gardner use the school campus in addition to museum galleries. Differences include the duration of the program – CMA arranges a pre-visit in the school, museum gallery visit, then a post-visit art making component at the students’ school to extend learning; Crystal Bridges has pre- and post-teacher materials, but only a single visit experience; and ISGM is a year-long, multiple-visit program with 8 different lessons conducted in museum galleries and school classrooms.

Findings around program facilitation strategies revealed all three institutions used some version of inquiry to engage student visitors in the discussion of a work of art, yet their methods differed in application. Group discussions modeled the use of critical thinking skills and gave students an opportunity to practice using CTS throughout their museum visit, and in the case of ISGM and CMA, during the school portion of the program. Crystal Bridges was the only program to supply content as needed, to aid in student interpretation.

Case study institutions may have implemented different facilitation methods to accommodate their unique needs. CMA chose not to use VTS because they felt another curriculum better suited their modern collection. Crystal Bridges chose to accommodate the needs of their shyest visitors by offering alternative ways (in writing, art creation, etc.) of expressing their ideas, and Gardner chose a strategy that would add meaning to artworks in spite of their museum's exclusive lack of labels.

Program facilitator training differed at all three institutions. Crystal Bridges hired museum educators to lead tours and trained them through an intense schedule that included studying learning theory. Columbus used volunteer docents to lead tours and offered ongoing training every 4-6 weeks. Docents were trained in the art of leading inquiry style discussions and given time to share ideas and experiences with each other. CMA also offers professional development to art teachers facilitating extension activities back at school. ISGM is the only case study museum using the education director to lead tours. This is likely due to their strict adherence to VTS, and the time needed to become properly trained in VTS methods. The school programs manager at ISGM in turn, trains teachers to facilitate VTS in their classrooms through ongoing professional development sessions and classroom coaching.

Teacher preparation was a goal of all case study programs. Columbus and Gardner provide professional development, and invite teachers to experience what students will experience on their tours. Because the VTS method is central to Gardner's program, in-class coaching is also delivered to teachers during pre-visit sessions. All three institutions provided written or video preparation materials to teachers prior to their school visit.

When asked where program weaknesses lay, all three institutions perceived facilitator pushback as a weakness. This opinion is based on the experiences of Education Department heads, who felt that steps made to fix said weakness increased program strength moving forward.

At CMA, long-time volunteers were guiding tours in a manner unfamiliar to them, student centered tours rather than content driven tours. Crystal Bridges' museum educators came with different skill sets, and periodically had difficulty waiting out "the silence" of a group discussion. ISGM mentioned their teacher (facilitator) commitment was not always 100%. The difficulty some older students have with sharing ideas within a group setting was mentioned by Crystal Bridges and ISGM, but not CMA.

After receiving research results, all three museums made changes to their programs. After preliminary results indicated that teenagers were not enjoying the programs, Crystal Bridges adjusted their teen programs by allowing discussions to occur within pairs, rather than groups of 10 or more. Columbus Museum of Art increased focus on school partnerships and professional development. Like CMA, The Isabella Stewart Gardner Museum increased professional development. Teachers were encouraged by the research findings and desired to use Visual Thinking Strategies in their classrooms. Programmatic changes occurred following initial findings of non-existent content retention. Gardner dropped content instruction in favor of a strict VTS curriculum.

Implications

What do these findings mean for the field and how do they fill the gap in the literature on art museum school programs? Broadly, results from this study suggest that critical thinking outcomes in art museum school programs can potentially be achieved by

using different strategies. Although all three museums used peer group discussions that modeled critical thinking practice for students, they implemented it in very different ways. While inquiry practices may be a good place to start, art museum professionals need not feel that a multi-visit field trip program is necessary to develop critical thinking skills, as both CMA and Crystal Bridges were single-visit programs.

Overlapping the results of the CT meta-analysis on page 17, with what we learned about the case-study practices indicates that the case-study museums are utilizing good instructional practices. Abrami et al. (2014) noted that the highest effect on critical thinking growth resulted when instructional methods of dialogue, authentic and anchored instruction, and mentoring were combined. At an art museum, dialogue might look like an inquiry based gallery discussion among a group of students. Authentic and anchored instruction (role-playing and applied problem solving) might be students practicing critical thinking by Observing, Describing, Interpreting and Proving (ODIP). Mentoring, described in the meta-analysis as a personalized interaction between someone skilled and knowledgeable and a novice, might look like a well-trained facilitator working with a small group of students to model, encourage and facilitate CT practice after looking at a work of art. Dialogue, authentic and anchored instruction as well as mentoring were programmatic strategies consistent across case-study institutions.

This study also has implications for future research in this area. Specifically, there are four studies that might stem from this one. The first study might compare the strategies each researched program employed with the level of CTS development attributed to each program, in an attempt to identify program strategies that facilitate the largest measure of CT skill development. Another study could look at the transfer of critical thinking skills

developed through museum program participation to long-term academic achievement. Following the shift in American education toward 21st century skills, most states have adopted Common Core curriculum standards. Newer standardized tests like Smarter Balance, now evaluate students for critical thinking behaviors within science, math and reading. I believe there is urgency for this study. With current push back on Common Core in some states, and the potential swing back to standardized tests focused on measuring factual knowledge, the window to do this research using large samples of standardized CT test scores may be small. A third question to explore is whether there are critical thinking skills that art museums are not impacting? What are they? Why aren't current programs developing them? What programmatic strategies may best develop these skills in students? And finally, a fourth research study could look at whether art museums' critical thinking focus has increased the public's perception of museum value. Public perception has an impact on visitorship, and funding. CMA, Crystal Bridges and ISGM believe that their programs *are* valuable to students, and research on their programs concurs. What value do a teacher, student, parent, school district, local government, and museum board perceive? Does having a critical thinking focus appear more valuable than an art making, art history or other type of focus? Why or why not?

I hope this research can serve as a foundation for more. I've attempted to answer the question, "What's going on here?" I issue a call to the field to answer the question, "What more can we find?"

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Appendix A: Interview Guide

Interview Guide

Field Trip Practice: Art Museums, Elementary Field Trips and Critical Thinking
Interview Guide

Beth Smith // Email: bethann55@comcast.net

Thesis Advisor: Dr. Jessica Luke, Museology Graduate Program, University of Washington

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I am asking you to participate in a research study that is part of my Master's Thesis work at the University of Washington. The purpose of this research is to describe common threads in successful art museum field trip programs designed to improve critical thinking. Your participation is voluntary. Refusal to participate will involve no penalty or loss of benefits, and you may discontinue participation at any time. As a reminder, the identity of your museum will be revealed in the final results of the study. This interview will be recorded, and I may quote you in my final paper. I will give you the opportunity to review any direct quotes before publication. If you have any questions now or in the future, you may contact me or my advisor using the contact information I have provided above. Do you have any questions? Do you agree to participate in this interview?

Interview Questions

My first few questions are about the rationale behind focusing on critical thinking skills as an outcome within art museum school field trip programs.

How long has [insert program name] been in existence?

How long has it focused specifically on critical thinking as the primary outcome?

How is critical thinking defined within the context of this program? (Probe: Are there particular theories, frameworks, or literature that has informed your thinking about critical thinking?)

Why did the museum choose to focus on improving critical thinking specifically, as opposed to other possible outcomes for students?

This next set of questions is focused on the ways in which the program seeks to develop students' critical thinking skills.

Can you describe the program to me?

- How long is it?
- Who does it serve?

- What are the major components?
- Who facilitates it?
- How are teachers prepared before the field trip? Does it include pre-visit and post-visit materials?
- Are there written program materials that you could share with me?

What strategies do you use in this program to develop students' critical thinking skills?

- How did you decide on those strategies as opposed to others?
- What do you think is particularly effective about those strategies?
- What do you think is least effective about those strategies?

How are the program facilitators trained? (Probe: Specifically, what training do they receive related to facilitating critical thinking?)

My final few questions are about the results of the research study that was conducted around this program.

Did you expect the results you received from the research conducted on your fieldtrip program?

What results if any were unexpected?

After receiving the research results on your program, did you make adjustments to your program?

If yes, what changes were made to your program?

In your opinion, did the changes made improve, weaken or neither weaken or improve your program?

If you could give other art museums advice on fieldtrip programs that are intended to enhance critical thinking skills, what would it be?