

School Partnership Program
2010-14 Elementary Longitudinal Case Study
Final Report

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Abstract

The Gardner Museum has used Visual Thinking Strategies (VTS) as its main pedagogy with local Boston schools since 2005. What began as an update to our own teaching methods and curriculum has evolved into significant changes to our Partnership model—including intensive professional development for classroom teachers and more art discussions for students. In addition the relationships between the Gardner Museum and the partner schools changed dramatically: instead of focusing on multiple-visits for students in one or two grades, we now work with many students over their entire K-5 academic careers. As more of our partner schools committed to whole-school involvement, we sought to track the effects of the School Partnership Program and VTS on the students over a longer period of time. This report captures the growth of a cohort of Tobin’s elementary students, many of whom are English Language Learners, from 2nd grade through 5th grade between 2010-2014 (Figure 1).

Our key findings illuminate the complex realities of learning:

1. Over time, students in the School Partnership Program increase their range of ways of thinking, both in terms of Aesthetic Development and critical thinking skills.
2. Levels of critical thinking skills are correlated with Aesthetic Development Stages.
3. Urban elementary students undergo many cognitive, social and developmental transitions, so this learning does not happen linearly or by grade level.



Figure 1 Tobin 5th grade students use VTS to discuss the Gardner Museum courtyard, October 2014

Program Background

School Partnership Program

Since the beginning of the Education department in 1992, the Isabella Stewart Gardner Museum has focused its work with K-12 audiences through the School Partnership Program (SPP), which builds relationships with local Boston Public Schools. After a decade of connecting local schools’ curricula to the Gardner, we embarked on a major 3-year research study, *Thinking Through Art*, funded by a U.S. Department of Education’s Arts in Education Model Development and Dissemination (AEMDD) grant to study our work with elementary students. Preliminary results in Year 2 found that our teaching methods, which at the time featured a combination of open-ended questions and layering in information about the artwork, was ineffective. Students were not connecting to the artworks used in the curriculum, nor were they able to recall specific galleries, works previously viewed and discussed, or facts about the artworks that we had shared during their museum visits.

[These results](#) led to our commitment in Year 3 of TTA to Visual Thinking Strategies, or VTS, as our main pedagogy, as well as a complete overhaul in classroom and museum curricula. Instead of using artworks that illustrated themes or concepts from the classroom curricula, we honed in on artworks that would grab students’ attention, peak their curiosity, and keep them engaged. At the end of one year of 8 VTS lessons, grade 3-5 students who participated in SPP doubled their observations and interpretations, as

well as their ability to provide evidence for their ideas. Carefully matched peer students who did not participate in the SPP did not demonstrate growth in critical thinking skills.

Throughout the history of the School Partnership and the *Thinking Through Art* project, all program teaching (both onsite in the Gardner and in the classroom) had been performed by Gardner Museum educators. After the TTA results were shared, partner schools including Tobin saw the potential for VTS discussions to develop critical thinking skills in their students, as well as opportunities for classroom teachers to integrate art and student-centered learning into their teaching repertoire. Today, all partner teachers have been trained in VTS by Gardner Museum educators, and most teachers lead a minimum of 8 VTS lessons annually in their classroom. All museum-situated teaching is still led by the two full-time Gardner Museum educators who manage the School Partnership—so our relationships with each school grow year after and year.

Tobin K-8 School

In the 2013-14 academic year, the Maurice J. Tobin K-8 School, located in Roxbury, MA, served approximately [450 students](#) and 36 teachers. Most of the students were Hispanic (68.9%) and African-American/Black (24.9%); nearly half of the students were English Language Learners (42.3%) and most (90.5%) were eligible for free or reduced lunch.

Tobin was one of the two treatment schools in the *Thinking Through Art* study, and one of the first Gardner partner schools to commit to VTS professional development for the entire teaching staff. However the school has experienced a fair amount of staff turnover in the past six years, particularly in the elementary levels. In addition, Tobin’s attrition rate has been high, between 20-24% annually—whereas the Boston Public School district typically experiences around 9% annual attrition. The school’s standardized test scores have historically been low. Tobin has also experienced a steady increase of Hispanic and Limited English or English Language Learners (ELL) over time; most students have at least one parent for whom English is not their first language.

Case Study Subjects

We first became interested in studying the long-term effects of our School Partnership in 2008-09, and collected data from 8 subjects in Kindergarten (Boston Public Schools uses the abbreviation, K2). However, due to high level of student attrition, we expanded the scope of the study to 23 subjects in 2010-11 when the students were in 2nd grade. At the conclusion of the case study in June 2014, only 11 subjects remained at the Tobin, including 3 who were part of the original kindergarten cohort (Figure 2). All of our subjects were designated as English Language Learners during the first years that they attended the Tobin. By 5th grade, all but two of the students had reached English proficiency. One student has an [Individualized Education Plan](#) (IEP).



Figure 2 Third grade students discuss a projected image in Mr. Fizer’s classroom at Tobin School, April 2012

Classroom VTS Lessons

Tobin classroom teachers use non-Gardner Museum images so that students may learn to look at art with a diverse range of imagery. We aimed for 8-10 classroom lessons a year, which often breaks down to one classroom lesson per month. However, each teacher determined the timing and final number of lessons for his or her class per year, and the implementation varied depending on commitment to the Partnership and VTS, among other factors. Some teachers are very excited by VTS, as evidenced in the average of 13 lessons led by Grade 3 teachers (Figure 3).

Grade	Average number of VTS lessons during school year
Kindergarten	6
Grade 1	6
Grade 2	7
Grade 3	13
Grade 4	6
Grade 5	6

Figure 3 Average number of VTS lessons led by classroom teachers per grade level

Over time, some classroom teachers began to apply VTS to other subject areas, not just visual art. For example, in 2008-09, a third grade teacher created VTS writing notebooks for her students. In 2010-11, a middle school Math teacher independently developed a lesson plan to use VTS to help students prepare for open-response questions on the standardized Math exam. In 2012-13, a third grade teacher used Crayola Model Magic (the sculpting material students worked with during their visit to the Museum) to make a Wampanoag village. When a Gardner Museum educator visited the classroom, the students were eager to describe how they had made each element of the village, and talked excitedly about how the whole class had engaged in a VTS discussion about their creation.

Grade 3 Sheltered English Instruction (SEI) teacher Brian Fizer led a VTS lesson on American laws in which students analyzed a letter between Abigail Adams and her husband during the Continental Congress meeting in Philadelphia, the text of a law from the Reconstruction era following the Civil War, and a photograph of 1960's segregated drinking fountains. Students then worked in pairs to design their own laws and related flags that conveyed their main ideas (Figure 4).



Figure 4 3rd grade students discuss a projected image in Mr. Fizer's classroom at Tobin School, April 2012

When we asked him to reflect on why he uses VTS, Brian explained, "I want them to have that sort of ability to defend themselves with reasons and to be interested to figure something out. I try and tell them, and help them to see that History, Science, everything, is someone's perspective on things...it sort of makes it more accessible when we have to look at different accounts of History because everybody has a perspective and no two are going to be exactly the same...and Reading is the same way, I feel like. You have to think about the author and where the author, their place in History and station in life..."

When asked about connections between VTS and their school learning, a third grade student said:

“In VTS, you need to use evidence. In reading, you need to use evidence to support your ideas and that’s basically what you do in VTS.”

The students recognized that as they begin to start taking tests that measure their comprehension skills through reading and writing, VTS can help them develop skills for success (Figure 5).



Figure 5 Tobin 5th grade students discuss their art-making process in the Studio

Museum Visits



Figure 6 Tobin 3rd grade’s first visit to the Gardner Museum included discussion of *El Jaleo*, experimenting with how to use the art-making supplies in the Studio Classroom and sketching around the courtyard.

The case study’s students also visited the Isabella Stewart Gardner Museum with their classes in third, fourth and fifth grade. Each third grade class visited the Museum in February 2012 after the opening of our new Renzo Piano wing, using VTS to discuss John Singer Sargent’s *El Jaleo* and a gold cassone in the Raphael Room (Figure 6). The students also sketched plants and sculptures in the Courtyard, which they translated to oil pastel drawings.

In fourth grade, all of the classes visited the Museum twice, in October 2012 and February or March 2013. For the first visit, the classes had VTS discussions about the Mexican Tiles in the Spanish Cloister, sketched plants in the Greenhouse Classroom, and painted on ceramic tiles. The second visit included VTS discussions about *St. George Slaying the Dragon* by Carlo Crivelli (Figure 7) and the *Messenger Tapestry*, as well as a collage project in the Studio. Students’ responses to the painting included:

- "That spear looks like a candy cane because it has red and white stripes. I see the same stripes on the chair near the window! And on the sofa in the middle of the room! It's everywhere!"
- "It’s like realistic fiction; there aren't any dragons in real life, and I've never seen a gold sky before, but the horse looks real."



Figure 7 Carl Crivelli, *Saint George Slaying the Dragon*, 1470.



Figure 8 Tobin 5th grade students use VTS to discuss *Saint Martin and the Beggar* in the Dutch Room, October 2014

In fifth grade, two of the classes visited the Gardner twice, in October 2013 and April or June 2014; the third class with a teacher new to the SPP visited once, in December 2013. All classes viewed *The Annunciation* and *St. Martin and the Beggar* (Figure 8), and created wire sculptures based on their drawings in the galleries. For the second visit, students looked at *The Tragedy of Lucretia* by Sandro Botticelli and the carved French wooden chest in the Gothic Room, complemented by a printmaking activity.

When asked about their experiences at the Gardner and with visual art, students reflected:

- People go to art museums “to look at paintings because paintings actually have more than one meaning.”
- “I like to look at what’s going on. What’s hard is sometimes there are little details you can’t see, like at the Gardner I didn’t see the man in back because it was so dark until [my classmate] saw it.”

Case Study Design

In addition to the qualitative data described above, we used these assessment tools to quantify the long-term impact of our program:

1. Aesthetic Development Interviews (ADI): Students were asked individually to think aloud about a reproduction of a work of art. ADIs were collected in the fall and spring of 2008-09 (Kindergarten), fall and spring of 2010-11 (2nd grade), springs of 2012, 2013 and 2014 for grades 3-5. We consider the fall of 2010 to be the post-1st grade measurement.
2. Writing Sample: An image was projected in the classroom, and students were given up to 15 minutes to write in response to “What’s going on in this picture?” This tool measures transfer across context, from group discussions to individual writing. Writing samples were collected in springs 2012-14, at the end of grades 3-5.

All interviews and writing samples were transcribed and analyzed by Gardner Museum educators. Both data sets were coded for the following types of critical thinking (Elaborations, Supported Observations, Speculations, Revisions, Questions and Multiple Possibilities) using the ISGM Critical Thinking Skills Rubric. *See Appendix A

ADIs were also coded for Aesthetic Development using cognitive psychologist Abigail Housen’s Aesthetic Development Scoring Manual (Housen, Abigail. *Aesthetic Development Scoring Manual in the Eye of the Beholder: Measuring Aesthetic Development*. E.D. Diss., Harvard University, 1983b). This report will

address data from 2010-14, or Grades 2-5, considering that three remaining subjects that began our case study in Kindergarten to be too small a sample to analyze for program impact.

Aesthetic Development Findings

According to Abigail Housen’s theory of Aesthetic Development (DeSantis, Karin and Abigail Housen. *A Brief Guide to Developmental Theory and Aesthetic Development*, 2009), the main way for viewers to grow in their ability to make meaning with works of art is time spent with “eyes on canvas.” As students spend time deeply at works of art and exchanging ideas with their peers through facilitated VTS discussions, they become more familiar with the looking and interpretative process, and start to become aware of art-making processes and the artist’s role.

Learning takes time, and growth often doesn’t follow a straight path year to year—it’s often messy. As illustrated in Figure 9, the subjects started with Aesthetic Development distributed across Stages I (Accountive Viewers), II (Constructive viewers) and I/II, those who straddled thinking behaviors in both Stages I and II. By the end of 5th grade, most of the students were firmly in Stage II, with a few students in Stage I/II.

Examining the Aesthetic Development Stages of the students in the intervening years demonstrates that several students spent that time transitioning towards Stage II, with their Interviews coding as Stage I, I/II or II depending upon which meaning-making strategy was dominant in a given year. Over time, these students did less listing of objects in the image (Stage I behavior, such as saying “dog, red, sky”), and gradually described more detail (“brown dog in right-hand corner, red chair, the sky’s colors show it’s nighttime”). The evidence that students used to support their ideas was frequently a mix of concepts that were grounded in the image and idiosyncratic leaps (Stage I/II behavior, such as “he’s making a snow angel in the grass, her hand is glowing, a storm is coming”). By the end of 5th grade, most students were speaking in complete thoughts and quite a few were beginning to comment on the artist’s choices, as well as speculate about the time period, setting, and medium used; all of which are indicators of Stage II behavior.

For example, at the end of 5th grade, students were clearly using their knowledge and experiences to make sense of the images, and often referred to artist process as a lens. Subject 14 was interested in emotions of the artist and how it impacts the artist’ choices in William Kurelek’s *Nature Ecstasy* (Figure 10) when saying: “I think this whole entire thing is a painting because if it was a picture, it would look

Learning through VTS prepares students to construct meaning

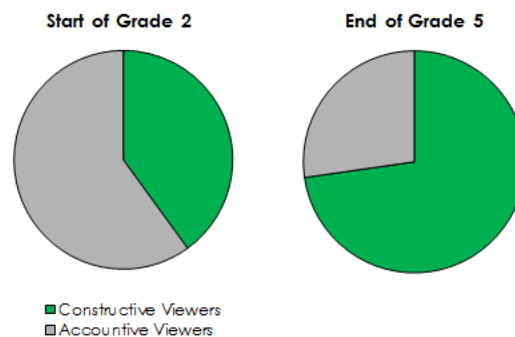


Figure 9 While a majority of the students began the School Partnership in Housen’s Stage I (Accountive) of Aesthetic Development, most were in Stage II (Constructive) at the end of the study

more realistic, and you would know what everything is...I think the author has kinda like, kind of like in a middle mood, because he's using like, black, and red, and orange, and dark blue. But he doesn't feel so bad because he added some white and some yellow."



Figure 10 Grade 2
Pre ADI Image
William Kurelek, *Nature Ecstasy*, 1974



Figure 11 Grade 5 Post ADI Image
Henri Matisse, *The Dessert: Harmony in Red (The Red Room)*, 1908

Subject 14 also considers why certain choices were made in Henri Matisse's *The Dessert: Harmony in Red (The Red Room)*, particularly when the artwork does not meet his expectations for reality, such as, "I have a question for the author, artist. What was, what is that, like that, all that there supposed to be? Like designs, or to make the house look pretty? I'm wondering if this looks like a table, but like I don't see where like the table stops because it goes on and on and then it turns." And Subject 19 uses her knowledge of the natural world to analyze details and make sense of the image (Figure 11), "maybe it's spring or summer, because I see the window outside. It has the tree leaves and there's flowers, and it's daytime, I guess. Because in the winter, there usually will be snow and it'll be cold outside with no leaves."

Critical Thinking Skills Findings

Just like Aesthetic Development, the growth of critical thinking skills is complex and not a linear path. All students' critical thinking increased during the study, with one student's exceptional critical thinking skill levels in 3rd grade causing a usually large spike in the number of oral language critical thinking skill counts that year (Figure 12). Elaborations and Supported Observations were the most prominent types of critical thinking to grow, logical developments given that these skills are direct responses to the VTS questions "What more can we find?" (look further, talk more) and "What do you see that makes you say that?" (back up your ideas with evidence in the image). Speculations, Multiple Possibilities and Questions all rose in third grade as students think more openly and flexibly, considering their perspective on the artwork to be just one out of many possible interpretations.

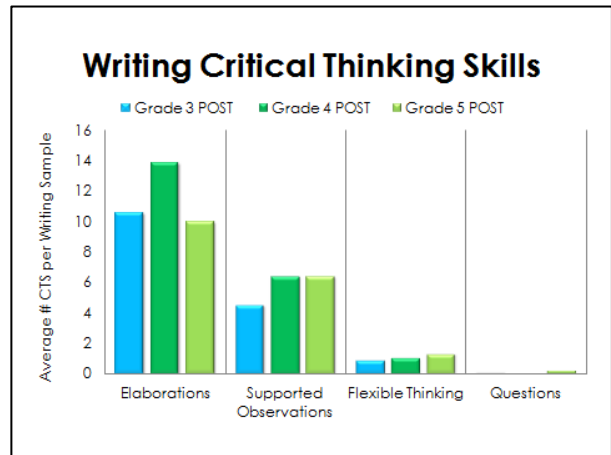
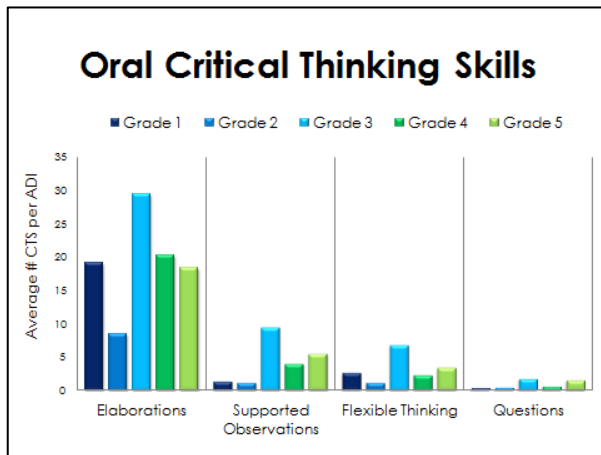


Figure 12 Average number of critical thinking skills used in individually by students in their think aloud interviews (ADIs) and writing samples over time

While the major increase in oral language critical thinking occurred in third grade, we see these skills transfer to writing a year later, and staying relatively stable in Grade 5, demonstrating that these skills are sticking with the students. The types of thinking that grew in writing parallel those in oral language—Elaborations and Supported Observations both increased between 3rd and 5th grade.

We were surprised to see an overall decrease in oral language critical thinking skills (CTS) from third grade to fourth grade. However, comparing the same classes’ scores on the English Language Arts (ELA) component of the Massachusetts Comprehensive Assessment System (MCAS) in third through fifth grade shows that this dip is consistent with the students’ academic performance (Figure 13).

One possible explanation for the drop in critical thinking and test scores in fourth grade is that the students are on the cusp of a developmental burst or spurt, causing some cognitive abilities to lay low for a time. As the students are internalizing the critical thinking that they practice as a group during VTS discussions, they first demonstrated a dramatic increase in critical thinking in oral language in third grade, followed a year later with a sharp increase in critical thinking in writing. That the oral language critical thinking count went down at the same time as the writing critical thinking skill count went up indicates that the students are still using rigorous thinking to make sense of works of art, but perhaps the effort in translating these skills from the context of talking to the context of writing is taking priority in this moment.

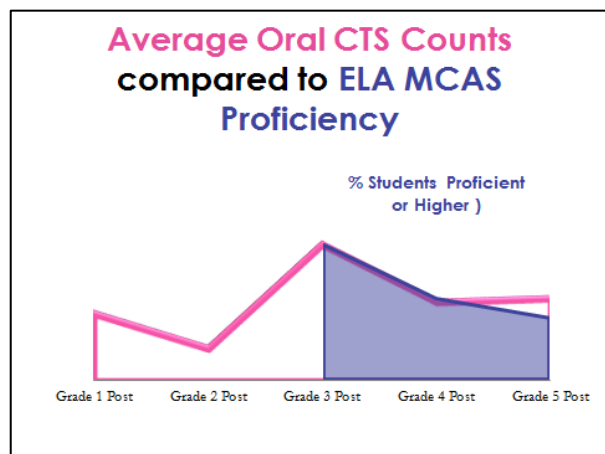


Figure 13 Comparison of oral critical thinking skills used in the individual think aloud interviews (ADIs) to Tobin’s ELA standardized test scores over time

If the dip in critical thinking occurs between grades 3 and 4 in multiple BPS schools, then we should consider how we may best support that crucial learning juncture for the students and their teachers. The students' oral critical thinking skill counts start to rise again in our data at the end of 5th grade, surpassing their 5th grade MCAS proficiency growth rates, suggesting that our program has staying power with the students.

Correlation between Critical Thinking and Aesthetic Development

Previous VTS studies (*Aesthetic Thought, Critical Thinking and Transfer*, Housen, 1997; *Highlights of Findings—San Antonio: Aesthetic Development and Creative and Critical Thinking Skills Study*, Housen & DeSantis, 2007) demonstrated that Aesthetic Development and critical thinking grow together as a person's cognitive skills develop. As students connect ideas in more detailed descriptions or stories (Stage II behavior), they are able to practice the skills of elaboration, supported observations, and flexible thinking (Figure 14).

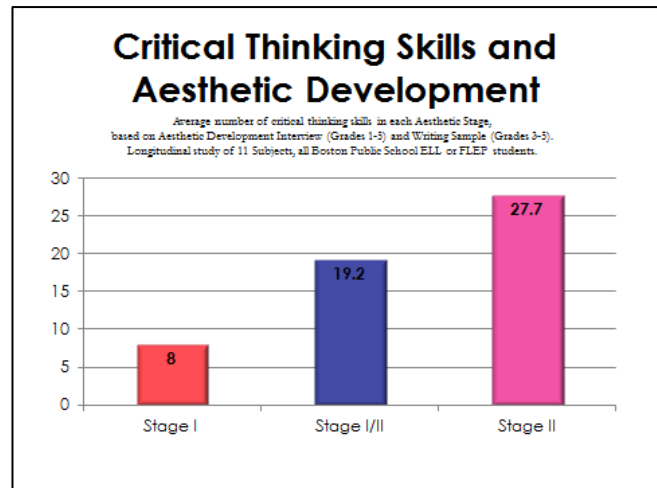


Figure 14 The average critical thinking skills used in think aloud interviews (ADIs) and writing samples is rises significantly by Housen's Aesthetic Development Stage.

Confirming our expectation that critical thinking will rise as these students progress out of Stage I, we found a steady increase in critical thinking skills in ADIs by students from Stage I to Stage I/II and Stage II. By looking at students' data over time, we get a sense of how their critical thinking skills evolve in parallel to their Aesthetic Development.

For example, in the beginning of Grade 2, Subject 14 was in Stage I. In his first ADI, the transcript shows that he needed a lot of prompting from the interviewer, and his thoughts are relatively short, such as "I see like trees, like fallen down. One kid's watching the rest. This is the house of these kids." By his Grade 3 Post ADI, he was in Stage II, and started classifying the medium or art materials used to make the artwork, "I think it's a painting. I say this because it looks like, it was like, painted and it, and it couldn't be a photograph because people are like colored." He also starts talking about the artist's intent, "the artist chose to paint this because maybe he was in his family and he was imagining it because how it would look like in a picture and he put some fake things so it could look like, like a fake picture." In third grade, he wrote, "I think the author was thinking of girls play in the beach," and in fourth grade, he wrote "I think this is a Painting because it look like If it paint on woman face and because it doesn't look real like a painting."

Then at the end of Grade 5, Subject 14 is still in Stage II, in his ADI, he makes many comments about emotions of the artist and how it impacts the artist' choices, "I think this whole entire thing is a painting

because if it was a picture, it would look more realistic, and you would know what everything is...I think the author has kinda like, kind of like in a middle mood, because he's using like, black, and red, and orange, and dark blue. But he doesn't feel so bad because he added some white and some yellow." His concern with colors and emotions show up again in his fifth grade writing sample, "I think the artist was in a good mood because there's flowers, there's bright colors, there's animals, which means that he's happy, because if he was sad, he would have dark colors." The student also becomes concerned with societal standards and applying what he knows about nature, "the person who owns the house has a lot of money, the bowl looks expensive because it's clean, I think there's a butterfly flying in the sky. I can see its reflection on the water. Because butterflies do not go into the water."

Subject 19 started as Stage I/II in 2nd grade. In her ADI, she was very loquacious and descriptive, but the descriptions were simple, such as, "and I see a little church. And a little house. And I see something in back of the house. And I see a little thing with, under the bushes." She also made a few inferences with circular logic, "I know that it's dark because it's dark blue." At the end of 3rd grade, she was still Stage I/II, but had begun to narrate the scene, "I think this is a picture of a family. And I think that maybe that girl, maybe she by accident, she fell down." She also continues to build inferences, drawing from her personal experience, "Because like, every time I see this side it looks like if it's snowing, and every time I see this way, it's like if it's the summer." Her 3rd grade writing showed similar thought process of entering into the image, as if she were a participant in the scene. For example, "the water looks different because the ocean has salty water and the beach is not salty you could swim." By the end of 5th grade, Subject 19 was in Stage II, and she used her knowledge of conventions, especially in the natural world, to make sense of the image, "maybe it's spring or summer, because I see the window outside. It has the tree leaves and there's flowers, and it's daytime, I guess. Because in the winter, there usually will be snow and it'll be cold outside with no leaves." Now all of the supported observations are grounded in evidence in the picture.

The upward trend in critical thinking skills by aesthetic stage exemplified by these examples indicates that students need to look at and talk about art regularly for the critical thinking skills to stick and transfer to other contexts. The continuous looking can only occur if teams of teachers, spanning at least three consecutive grades, commit to leading monthly VTS lessons with works of art—which is why we design our program over multiple academic years.

Conclusion and Implications of our Findings

There is an overall upward trajectory of growth in critical thinking, both orally and in writing. However, the Aesthetic Stage tends to be a more significant indicator of the level of critical thinking, rather than grade level—which makes sense, because students grow at different rates and not everyone is interested in visual art or art museums. Educators at both the Gardner Museum and Tobin School are interested in developing skills that students may transfer to other contexts and content—but that development takes time, in the case at Tobin, a few years for those skills to assimilate into the ways students respond to work of art in writing. Although overall critical thinking skills dipped in 4th grade, that growth pattern mirrors the English Language Arts scores on the MCAS assessments. And lastly,

specific types of critical thinking skills develop and transfer more quickly than others, particularly elaborations and supported observations.

The Gardner Museum's School Partnership Program now has a coding process for both Aesthetic Development and critical thinking skills, including coding manuals for each elementary grade level. We also have strong inter-rater reliability between two staff members, and we began training other staff and classroom teachers to use our Critical Thinking Skills rubric.

In May 2014, Gardner Museum educators presented the above findings to the entire Tobin staff. Teachers were interested in the data, and increasingly became conscious of how their facilitation of VTS discussions could cause or inhibit the growth of each critical thinking skill. As a result of this meeting, Brian Fizer proposed a Grade 3 project for the 2014-15 school year, applying VTS to writing. He and the two other members of his grade team met with Gardner Museum staff four times during the school year to define the teachers' questions, design the project, analyze findings, reflect, and finally present the project to the Tobin staff in May 2015. The teachers agreed that their focus would be on cultivating a habit of revision and editing in writing and encouraging students to use evidentiary reasoning. Each 3rd grade class implemented five VTS & Writing lessons, each of which followed the following steps:

1. Teachers chose and photographed a picture from a book in their Expeditionary Learning curriculum.
2. Before reading the book, students wrote about the selected picture answering, "What's going on in this image?"
3. The class spent about a week studying the book using the Close Reading approach.
4. At the end of the unit, the class had a VTS discussion about the same picture.
5. Students reviewed their initial writing then completed a second writing sample about the same picture, using the same prompt.
6. Teachers coded the writing samples using the Gardner's critical thinking skills rubric.

Over the course of these five lessons of using VTS with the book imagery, which took about two months, students showed dramatic increases in their volume of writing and excitement to write. They felt ownership over the books and images, and began to use more academic vocabulary. Combining the critical thinking skill counts from all of the students from the three classes, total critical thinking rose 152% from lesson 1 to lesson 5, including an increase of questioning and of supported observations, fulfilling the teachers' initial goals. The third grade team shared the results at an all-staff meeting at the end of the year (Figure 15), where they encouraged their colleagues to consider how they could adapt the VTS method to address their grade team goals. We hope to see more teachers collaborating on similar projects in the 2015-16 school year, and beyond.

VTS has become a part of Tobin School's culture. Several elementary teachers lead regular VTS lessons throughout the year, and many apply the VTS method across their curriculum, especially with text analysis and social studies learning units. Tobin teachers are also finding connections between VTS and the Common Core State Standards, including students' ability to ground their ideas with evidence from the images and texts during Reading, problem-solving and acknowledging

different points of view in Math, and overall excitement about learning with visual art. As the case study demonstrates a strong connection between aesthetic development and critical thinking skills, regular discussions with works of art with careful facilitation by classroom teachers will continue to support student growth. Strong collaboration over multiple grade levels, over multiple school years between the Gardner and Tobin enabled these kinds of thinking and learning happen and stick over time.

In the future, we will deepen our understanding of the effects of VTS on our partner schools by comparing and contrasting this data set with others, including longitudinal data with high school students and teachers. We look forward to sustaining our partnership with Tobin School and will continue to build on this study as we explore new ways of using and studying VTS and visual art with local students, teachers, and their families.



Figure 15 Tobin 3rd Grade teachers share their reading VTS project results at an all-staff meeting, May 2015

Critical Thinking Skills (CTS) Rubric

CRITICAL THINKING SKILL	Definition with Example	Tally of Uses by Student	Total
1. Supported Observation	Comment about the image/artwork that is grounded in evidence found in the artwork <i>"I think they're in the same room because they have the squares on the back."</i>		
2. Speculation	Considering something is possible; often uses conditional language such as "maybe, possibly, could be, might be" <i>"And they might seem like that even though they're different colors, they could be together."</i>		
3. Revision	Changing opinion about previously made statement <i>"The woman has, well, it looks like it has on a strange, or like, a strange outfit. Well, not strange, but uncommon for, like, for this day and age."</i>		
4. Question	Wondering about something in the image; may address how or when the artwork was made, often uses a question mark <i>"What's that called?"</i>		
5. Elaboration	Student makes a comment, and then adds more than was previously stated. <i>"And the temperature...the weather looks really hot...people moved out of the houses because it was really hot"</i>		
6. Multiple Possibilities	Acknowledges that more than one idea is plausible or recognizes different perspectives; often uses "or" to delineate the various options. <i>"So the back seems little, either discolored or it's reflecting from some kind of light."</i>		
TOTAL CTS COUNT USED			