BACKGROUND: 2008-09 IMLS STUDY
The School Partnership Program at the Isabella Stewart Gardner Museum received funding in 2008-09 from the Institute for Museum and Library Services (IMLS) for research into the impact of its Visual Thinking Strategies (VTS) program. As outlined in the Report to the Education Department of the Isabella Stewart Gardner Museum on the 8th Grade School Partnership Program Visual Thinking Strategies Adaptation 2008-2009, this study analyzed the aesthetic and critical thinking skills of 8th grade students at Boston Latin School who participated in 17 discussions using VTS in the classroom and at the Museum during one school year. It demonstrated that the 8th graders who participated in this program tripled the number of critical thinking skills that they used in oral interviews about a work of art and doubled the number of critical thinking skills that they used when writing. The matched control subjects, from a cohort of students at Boston Latin School who did not do any VTS, had no change in their oral critical thinking skills and decreased the number of critical thinking skills in their writing over the same period of time.

IMLS STUDY FOLLOW UP: METHODS
In the seven years since that initial report, the School Partnership Program has investigated the cumulative effects of years of VTS, which made us wonder, what was the lasting impact of the program on the IMLS study subjects who only did VTS for one year? In the spring of 2013 we followed up with the students who had participated in the study described above -- students who were now high school seniors and had not experienced any VTS programming since they were 8th graders. This follow up study used the same methods as the initial study: students were asked to think out loud about a reproduction of a work of art (an Aesthetic Development Interview) as well as write about a reproduction of a work of art for 15 minutes in response to the prompt, “What’s going on in this picture?” Students also completed a questionnaire detailing their attitudes about art and museums and their experiences within those realms. In total, 8 of the original 20 treatment students and 10 of the original 16 control students participated in this follow up study.

IMLS STUDY FOLLOW UP: FINDINGS
1. Students in the treatment group who had participated in VTS through the School Partnership Program maintained higher critical thinking skills scores than the control students. Treatment students scored especially high in Supported Observations, a category of critical thinking where students explicitly support an idea with evidence. For example, “it looks like a river in the background because I see more bridges.” This type of critical thinking is crucial for college and career readiness. In the follow up oral interviews, the treatment group used almost triple the number of Supported Observations than the control group. In their writing samples, the treatment students used 1.5 times the number of Supported

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1 Prepared by Karin DeSantis of Visual Understanding in Education.
Observations per interview than the control group. Students also attributed their critical thinking skills to VTS. One student wrote, “I have used the [VTS] skills when observing situations or during problem solving.”

2. **Treatment students exhibited a new type of critical thinking that we have not seen in previous data, which we are calling Evidentiary Reasoning.** Unlike the explicit use of evidence in a Supported Observation such as the one cited above, when using Evidentiary Reasoning students more subtly imply that other information is related to their claim. For example, one student said, “it kind of reminds me of impressionism with all the colors kind of melding together.” Another student remarked, “it's interesting to see that the woman on top of the woman's head is facing the same way as the rooster while the other woman is facing the same way, so that sort of provides an interesting contrast.”

3. Students in the treatment group were more likely to have taken art or art history classes and were more likely to visit museums than the control students. As one student wrote on the questionnaire, “I feel more comfortable speaking about art and forming opinions about art, like any opinion or idea I have about a piece is valid.” This suggests that the School Partnership Program impacted students’ attitudes about art and museums in ways that will change their relationships with these cultural institutions into adulthood.

**IMLS STUDY FOLLOW UP: IMPLICATIONS AND NEXT STEPS**
Encouraged by the profound impact of a one-year VTS program, the School Partnership Program built research into a new partnership with the Edward M. Kennedy Academy for Health Careers. From 2012-2016, Gardner Museum staff have collected data from these high school students to determine how the effects of the program accumulate over four years.

As we shift our focus to these older students, we will continue to look for new categories of critical thinking. The development of a Gardner Museum critical thinking skills rubric and related coding that takes into account the language and thinking of contemporary adolescents will be a useful resource for teachers and museum education colleagues nationwide.