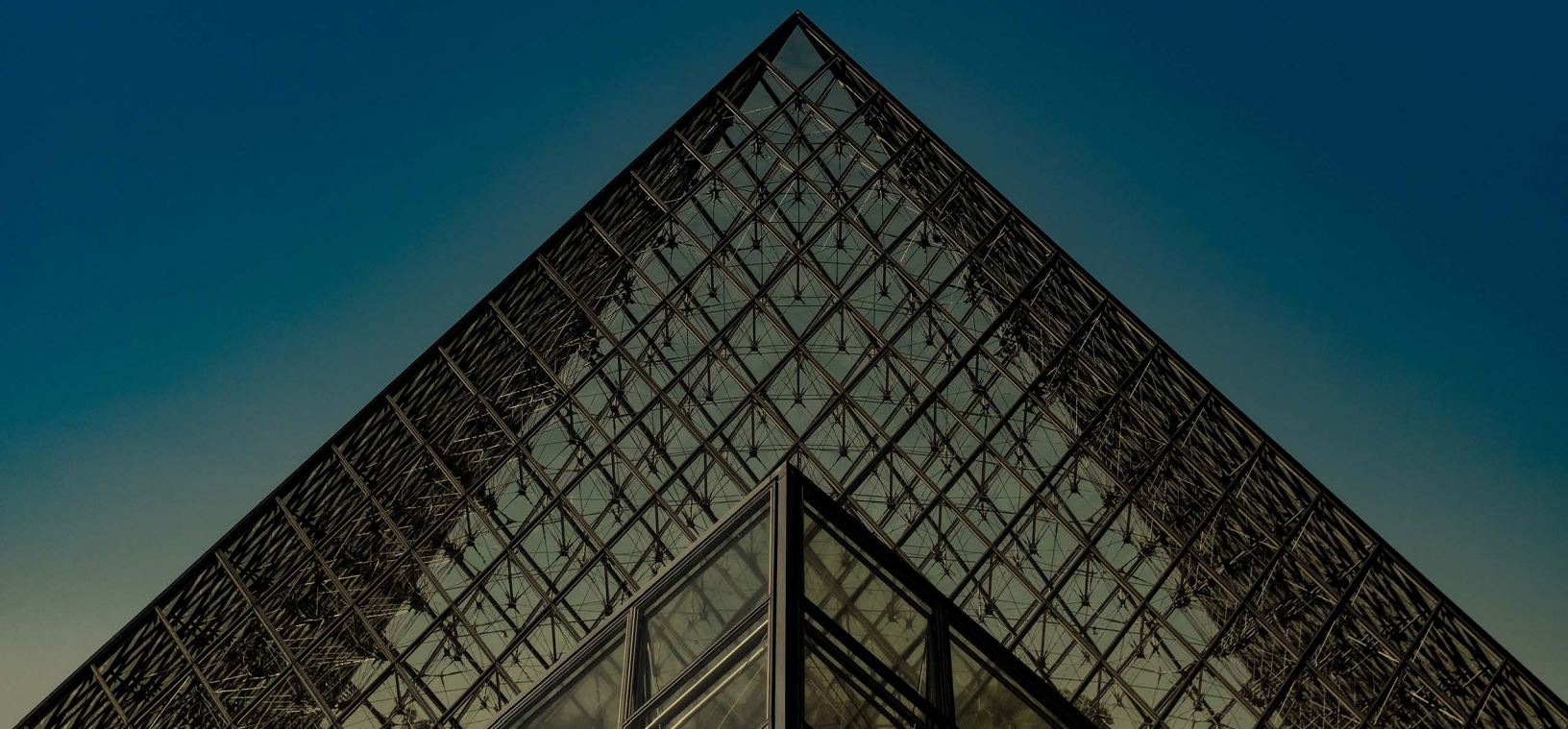




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# Teaching argumentation through art: insights for museums from the STELLAR Project

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**Keywords** Museum studies; critical thinking; visual literacy; argument writing; reasoning

**Abstract** How can museum educators use art to teach argument writing? This article describes the implementation, results, and implications of the STELLAR (Strategies for Technology-Enhanced Learning and Literacy through Art) Project. In this federally funded project, the University of Oregon's Jordan Schnitzer Museum of Art collaborated with the Oregon Writing Project and three rural school districts to address two growing, but seemingly unrelated challenges in rural K-12 schools—students' limited exposure to art education and the need to improve students' argument writing. The STELLAR Project focused primarily on teachers, providing them with an intensive and sustained professional development program to improve their knowledge and skill in teaching argument writing through the use of Visual Teaching Strategies. The museum played a key role in the success of the project, hosting in-person workshops for teachers and class field trips, and providing a wealth of practical resources—including support from knowledgeable docents and access to an extensive collection of art images. Results showed that teachers significantly improved knowledge and skills targeted by the intervention: perceived knowledge of critical thinking concepts, ability to teach critical thinking concepts, knowledge of concepts related to argument writing, and ability to perceive and analyze artistic work. Students of trained teachers gained in evidence-based reasoning and argument writing abilities. This project offers a powerful model for 21<sup>st</sup>-century museum outreach and education, demonstrating how art museums can partner with other institutions to effectively engage wide and diverse audiences with art in new, creative, and practical ways.

**About the Authors** [Lisa Abia-Smith](#) is the Director of Education/Outreach at the University of Oregon's Jordan Schnitzer Museum of Art, and a Senior Instructor in the university's School of Planning, Public Policy and Management. She is nationally recognized for using visual arts to improve 21<sup>st</sup>-century skills, strengthening docent programs, creating interactive learning exhibits, providing outreach to teachers, and establishing collaborative partnerships with schools. She earned a master's degree in Museum Studies from John F. Kennedy University. [Keith Smolkowski](#) is a Senior Research Scientist at Oregon Research Institute, Eugene, Oregon, with more than 30 years of experience in education, social science, and public health research. He holds a doctoral degree in Special Education from the University of Oregon. [Lisa A. Strycker](#) is a Research Methodologist at the University of Oregon College of Education and a Senior Research Associate at Oregon Research Institute in

Eugene, Oregon. She holds a master's degree in Psychology. Lynne Anderson is a former professor at the University of Oregon's College of Education, where she was Director of the Center for Advanced Technology in Education from 1995-2010 and Director of the Oregon Writing Project at the University of Oregon from 2003-2017. She directed the STELLAR Project from 2014-2017. Peggy Marconi was a Research Associate in the University of Oregon's Center for Advanced Technology in Education for 13 years and Associate Director of the Oregon Writing Project at the University of Oregon for 11 years. She was the STELLAR Project Coordinator and remains an avid technology advocate for educators.

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Figure 1. At the galleries of the University of Oregon Jordan Schnitzer Museum of Art, a teacher uses the Visual Teaching Strategies method with students to think critically about *The Last Audience of the Hapsburgs*, a 1918 oil painting by Hungarian artist Artur von Ferraris.

## Introduction

As they view *The Last Audience of the Hapsburgs*, a 1918 oil painting by Hungarian artist Artur von Ferraris, schoolchildren visiting the galleries at the University of Oregon Jordan Schnitzer Museum of Art (JSMA) answer three questions from their teacher:

- What is going on in this picture?
- What do you see that makes you say that?
- What more can we find?

To respond to these simple—but not simplistic—questions, these students engage deeply with

the art, think critically, and make sense of what they see. The process gives them a rich appreciation of the artwork itself, but something else happens at the same time. They are also taking a point of view and supporting it with evidence—in essence, they are learning to form an argument.

This compelling link between art and argumentation was the defining feature of the STELLAR (Strategies for Technology-Enhanced Learning and Literacy through Art) Project. In this project, the University of Oregon’s Jordan Schnitzer Museum of Art (JSMA) collaborated with the Oregon Writing Project and rural Oregon school districts to address two growing, but seemingly unrelated challenges in rural K-12 schools—students’ limited exposure to art and the need to improve students’ argument writing. The STELLAR Project focused on teachers, giving them an intensive art-based professional development program to prepare them to teach argumentation in their classrooms. The project yielded fruitful results for both teachers and students, with multiple social and academic benefits related to teaching visual literacy and argument writing.

This article describes implementation of the STELLAR Project, with emphasis on the museum’s role, and it offers insights for museums seeking to engage wide and diverse audiences with art in new, creative, and practical ways. Details about the STELLAR Project’s impact on teachers and students are presented elsewhere (Smolkowski et al., 2020).

### **Jordan Schnitzer Museum of Art (JSMA) at the University of Oregon**

Research–practice partnerships (RPPs) have proliferated in recent years as an effective way for museums to connect with the many and varied audiences in their communities (Garner et al., 2019; Smolkowski et al., 2019). The Jordan Schnitzer Museum of Art (JSMA) on the University of Oregon campus has a long history of partnering with researchers and practitioners in order to fulfill its mission to “further the appreciation and enjoyment of the visual arts for the general public.” In particular, JSMA educators have forged strong partnerships with community K-12 schools, school districts, and education



Figure 2. Exterior view of the Jordan Schnitzer Museum of Art at the University of Oregon.

service districts in a continuing effort to serve as an integral element of education and enhance the art education of children. For students, JSMA offers a full arts-based K-12 curriculum. The curriculum model is sequential and developmentally based to respect and reflect students' growth in critical thinking, language, and art-viewing skills over time. For teachers, JSMA places a high priority on providing meaningful professional development to improve student performance. Trained museum educators serve as valuable resources for arts integration in schools. The JSMA also offers another important teaching resource—its collection of 13,500 works of art from Japan, Korea, China, Cuba, the U. S., and Europe.

### **Visual Thinking Strategies**

The JSMA's ongoing professional development program for teachers has increasingly focused on the use of Visual Thinking Strategies (VTS), an internationally recognized curriculum for the visual arts developed originally at the Museum of Modern Art in New York City (Yenawine, 2013; Housen, 2001). The VTS curriculum is an approach to teaching visual literacy in the arts based on a series of questions that prompt students to think carefully about what they see in selected works of art, describe what is going on, and then document their statements with evidence from the image. The role of the VTS facilitator—either a docent or a teacher—is to ask key open-ended questions, acknowledging student responses, paraphrasing their answers, pointing to parts of an image being referred to, probing student input to encourage more in-depth visual analysis, and making connections across responses to surface commonalities and differences in students' interpretations. VTS provides a safe and highly effective way to engage students with carefully selected works of art, build their capacity for visual analysis and visual literacy, and provide them with arts-related vocabulary for thinking and communicating.

VTS has been linked to improved student performance in writing, literacy, and other academic outcomes (Moorman et al., 2017; Cappello and Walker, 2016). The method is so effective that a growing number of medical schools across the U. S. and in other countries have adopted some form of VTS—often in collaboration with art museums—to train nurses and medical students on assessment skills and teamwork. This approach has led to significant improvements in students' diagnostic, relationship, surgical, and interpersonal skills (Abia-Smith, 2016; Karwowski et al., 2014; Nanavaty, 2018; Reilly et al., 2005). Research over the past 30+ years has consistently validated the value of visual arts experiences and VTS in enhancing observation and reasoning skills for diverse populations and purposes—for instance, for engineering students (e.g., Campbell et al., 2017); discussing racial trauma (Gardner, 2017); and improving creative and critical thinking (Moeller et al., 2013). VTS is well aligned with the anchor standards for two of the four artistic processes expressed in the *National Visual Arts Standards*, part of the *National Core Arts Standards* that were launched in 2014 by the National Art Education Association ([www.nationalartsstandards.org/](http://www.nationalartsstandards.org/)).

For use with VTS, art images must be carefully selected. Ideally, they provoke good discussion, are of interest to the audience, look somewhat familiar, have multiple possible meanings, and lend themselves to narratives. In a VTS discussion session, docents in museums or teachers in classrooms ask viewers to look at a piece of art and to take a moment to think about it. For instance, this image (Figure 3) shows a museum docent and adult viewers engaging in a VTS discussion of a 2011 mixed-media triptych print, *All the Ancestors*, by Chinese-American artist Hung Liu, from the JSMA collection.



Figure 3. Facilitated by a museum docent, adult viewers discuss a 2011 mixed-media triptych print, *All the Ancestors*, by Chinese-American Hung Liu from the University of Oregon Jordan Schnitzer Museum of Art collection.

Students then discuss the image after each of three questions: (a) “What is going on in this picture?” (b) “What do you see that makes you say that?” and (c) “What else can we find?”. The first question, “What is going on in this picture?”, asks students to look beyond what they see and to share what they think is happening in the image—an interpretation, a snippet of the narrative. The open-ended question suggests that many answers are possible. In this case, a student might say, “An Asian shopworker looks longingly out of a window—and for some reason the window has been painted with pictures of peaches.” The second question, “What do you see that makes you say that?”, asks students to share what elements in the picture led to their interpretation. It is a non-threatening way to introduce reasoning and the use of evidence to support one’s conclusions. Looking at this image, the first student might say: “I think this is an Asian woman because of the long, smooth, black hair; delicate features; and dark, narrow eyes. Her face expresses sadness. The colorful background makes it seem like a shop, maybe a fruit shop or a paint shop because of the peaches painted on the window.” The third question, “What more can we find?”, deepens the meaning-making process. It asks students to think more about the picture, which could lead them to change their thinking or to develop a more nuanced claim—or it could cause other students to express a different or expanded interpretation. With the example image, another student might say: “The woman might not be sad, but just thinking about something she remembers, because her head is lifted up and she is looking forward, like she is not afraid to meet other people’s eyes.” The VTS process is a dialogue between the facilitator and the students. The teacher or docent might again ask the second question, “What do you see that makes you say that?” Teachers and docents facilitate the discussion by pointing to the details observed by their students, neutrally paraphrasing their comments, and linking comments from one student to those of others. The facilitator is central in the process, but is not the authoritative source (Housen, 2001). Importantly, the teacher or docent must remain neutral and avoid judgmental comments or statements about what the artist intended.

Through ongoing workshops and other outreach activities to schools, VTS-certified educators at JSMA support teachers as they learn the VTS techniques for visual analysis and classroom instruction. Because VTS emphasizes object-based learning, critical thinking, and problem solving, this technique can be integrated across a school's curriculum, from writing to reading, mathematics, social studies, science, and other subjects. Thinking and listening skills honed through VTS tend to become habitual over time, transferring across classrooms and possibly leading to a more respectful and collaborative school community. This format, when used on tours of the gallery, also turns the museum into an environment where all students have a voice and can participate in a nonthreatening way. Each interpretation and opinion is valued, and students leave feeling that the museum environment is participatory and welcoming.

### **Art and argument writing**

Following adoption of the Common Core State Standards (CCSS) (National Governors Association Center for Best Practices, 2010), Oregon teachers have become more focused on helping students develop skills for writing in general and for argument writing in particular. Embedded in the CCSS for Writing is increased emphasis on critical thinking and the ability to use reasoning to both construct and critique arguments. The standards ask that students be able to “delineate and evaluate an argument and specific claims...including the validity of the reasoning [and] the relevance and sufficiency of the evidence” (National Governors Association Center for Best Practices, 2010).

To meet the CCSS, students require instruction on the components of good arguments in authentic contexts, but many teachers must first learn how to teach argument writing. Teachers who lack professional preparation to teach argument writing often underestimate how much background knowledge students require in order to make a claim and support it with evidence. Some teachers choose to forgo teaching argumentation in an effort to minimize classroom conflict. These issues are especially acute in rural school districts, where teachers have little access to professional development, and often feel isolated.

The Oregon Writing Project at the University of Oregon was founded in the 1960s to help teachers improve writing instruction in their classrooms. It is one of nearly 200 sites across the nation that are part of the National Writing Project, headquartered in Berkeley, California. Since the adoption of the CCSS, the Oregon Writing Project has provided intensive in-service teacher training, support, and resources to teachers wanting to improve their skills in teaching argument writing. In 2010, the Oregon Writing Project began to collaborate with JSMA educators to provide professional development in how to integrate writing and art. Through these sessions, JSMA educators introduced VTS to Oregon Writing Project personnel, as well as participating classroom teachers. The Oregon Writing Project staff made the connection linking VTS to argument writing, and the idea for the STELLAR Project was born.

Through VTS, art and argumentation go hand in hand. VTS incorporates the essential components of practical arguments, as advanced by Toulmin (1958/2003; Klein and Rose, 2010). In the Toulmin framework, an argument consists of a claim supported by evidence, ideally with a warrant linking the evidence to the claim. A claim is a proposition which asserts a clear and unambiguous point of view. Support for a claim comes from evidence (or, grounds, data, facts, or reasons). An argument is usually more convincing if evidence is linked to the claim through a warrant, which describes how evidence validates the claim. Warrants are



hypothetical, and follow the form, “if [evidence] then [conclusion].” Claims, evidence, and warrants are fundamental to arguments—and they are intrinsically part of VTS. Visual art readily lends itself to discussion, theorizing, and finding meaning, as art images are rich in detail, are often compelling and ambiguous, and require no special background or technical knowledge to appreciate. Thus, visual art provides a relatively neutral context for engaging in civil discourse—and VTS creates a safe environment where everyone has a voice. VTS also demonstrates that all students—even those with limited art exposure—can appreciate and comment on art.

### **The STELLAR Project**

The STELLAR Project was a federally funded project at the University of Oregon designed to improve teachers’ abilities to teach argument writing and visual literacy by integrating VTS into the curriculum.

#### *Participants*

Teachers in three rural school districts participated in the project. Teachers at all grade levels and in all subject areas were invited to take part, with implementation staggered across 4 years. The goal was to have all teachers in the participating rural schools be able to use VTS and link it to instruction in argument writing.

#### *Design*

The STELLAR Project addressed two persistent challenges for teachers in the classroom: students’ limited exposure to art and the need to improve students’ argument writing.

The project’s collaborative design and implementation combined the interests and expertise of its two lead organizations: JSMA, with experience using VTS to teach visual literacy skills to teachers and students, and the Oregon Writing Project, with experience providing high-quality professional development on argument writing to rural teachers. VTS professionals, researchers, writing experts, and school districts worked collaboratively with the goal of helping teachers in rural schools enhance classroom instruction in argument writing and the visual arts. The project was designed to build capacity of all teachers in rural high-poverty schools to teach evidence-based reasoning and argument writing using VTS. The theory of change underlying the STELLAR Project posited that (a) an intensive and sustained professional development program will impact the arts knowledge and skill of rural teachers; (b) engaging in this type of professional development will improve teachers’ knowledge and skill in VTS, evidence-based reasoning, and argument writing; and (c) gains in teacher knowledge and skill will positively impact students’ visual literacy, critical thinking skills, and argument writing.

### **Teacher professional development implementation**

JSMA educators skilled in using VTS played a primary role in delivering the STELLAR Project’s central intervention component—professional development in VTS for teachers. The intensive and sustained program was aimed at showing teachers how to use VTS to promote their students’ critical thinking, visual literacy, argumentation, and argument writing skills. The professional development program, in line with recommendations for implementing successful innovations (Fixsen, et al., 2005), began with a 1-day teacher workshop at the museum, followed by online professional development and peer coaching. JSMA hosted

workshops to introduce teachers to VTS principles, with discussion and reflection on visual literacy, instruction and discussion on the specific components of VTS, and hands-on practice using VTS in the JSMA galleries. Workshops ended with a discussion of how to introduce VTS broadly into school curricula, an overview of web resources and additional professional development opportunities, and a review of critical thinking assessment. A second, half-day training session provided by Oregon Writing Project personnel introduced teachers to a culture of argumentation and the components of argument writing, and enrolled them in the *Second Life* digital platform, an immersive, virtual environment where teachers could remain connected and receive additional training.

Throughout the school year, teachers participated in online professional development via *Second Life* for about 2 hours every 2 weeks, which extended and refined their skills in teaching with VTS, integrating VTS into their curricula, and teaching critical thinking and argument writing. Example topics included (a) elements of VTS, (b) practicing VTS with art images, (c) refining VTS paraphrasing, (d) VTS and journaling, (e) argument in elementary classrooms, (f) VTS and elements of argument, (g) supporting students thinking through paraphrasing, and (h) writing the argument essay. Teachers also learned how to teach argument writing aligned with the CCSS and received copies of three books: *Teaching Argument Writing, Grades 6–12: Supporting Claims with Relevant Evidence and Clear Reasoning* (Hillocks, 2011), *They Say / I Say: The Moves That Matter in Academic Writing* (Graff and Birkenstein, 2014), and *Visual Thinking Strategies Basic Manual Grades 3–5* (Housen and Yenawine, 2000).

### **Classroom implementation**

After receiving professional development, teachers in multiple subject areas (including art, English language arts, social studies, science, math, and social skills) were asked to conduct at least nine VTS lessons with students throughout the academic year. Teachers used images from the VTS Image Library or other sources, objects, documents, infographics, text, photos, puzzles, data displays, and problems. Most classrooms took a field trip to the JSMA financed by the STELLAR Project. At the museum, teachers practiced VTS with their students in the galleries, taking advantage of the museum’s rich art collection, accompanied by VTS-trained JSMA docents. Museum visits were fun for participants, giving teachers and students opportunities for hands-on experience with VTS. Field trips also served another important function for the STELLAR Project. Because project staff could not observe teachers conducting VTS in their classrooms, the museum visit offered teachers an opportunity to have a VTS expert observe and provide feedback on their VTS interactions with students. The role of the docent in this context was not to criticize, but to offer positive, constructive comments that would boost teachers’ VTS future interactions with students. In this way, docents provided meaningful learning experiences for teachers as well as students (Palamara, 2018).

Throughout the STELLAR Project, JSMA leveraged ongoing initiatives to benefit participating rural teachers and students. For instance, JSMA and the STELLAR Project invited “Artie the Art Bus” to visit the schools and communities. This psychedelic bus, funded by Imagination International, offers a mobile art studio where professional artists can provide instruction in a variety of genres. JSMA also ensured that participating schools were notified of ongoing museum initiatives—including JSMA’s annual student art competition, which awarded prizes to several STELLAR Project student participants.

## Results

Teacher surveys and assessments were created for the project to document the effects of the professional development program on the areas it targeted: perceived knowledge of critical thinking concepts, ability to teach critical thinking concepts, knowledge of concepts related to argument writing, and ability to perceive and analyze artistic work. Basic measures of student argument writing also were collected, although students were not the project's primary focus.

Data were analyzed from 52 teachers and 212 students from grades K-11. Results are detailed elsewhere (Smolkowski et al., 2020); briefly, the findings showed that the STELLAR Project succeeded in providing teacher professional development to (a) increase art exposure, enhance art appreciation, and promote visual literacy among teachers and their students; (b) scaffold students' critical thinking and argument writing—especially the use of supporting evidence—through visual literacy; and (c) integrate visual literacy, critical thinking, and argument writing across the curriculum. The results indicated that teachers improved knowledge and skills explicitly targeted by the professional development program: perceived knowledge of critical thinking concepts, ability to teach critical thinking concepts, knowledge of concepts related to argumentative writing, and ability to perceive and analyze artistic work. Students improved on presenting a claim, including source material with multiple perspectives, connecting source material to the claim, organization contributing to argument development, language contributing to argument development, word count, and overall writing. These findings are in line with prior research, and support the conceptual theory underlying the STELLAR Project, which posited that an intensive and sustained professional development program would positively affect teachers' knowledge and skill in VTS and argument writing and, in turn, improve students' evidence-based reasoning and argument writing abilities.

## Insights for museums from the STELLAR Project

Art and argumentation are both essential to a functioning society. Art reflects society's collective memory, instills values, communicates experiences across time and space, and influences opinions. Art appreciation and participation have aesthetic and practical value, with demonstrable links to cognitive ability, self-control, and general intelligence. Argument underlies all of society's politics, ethics, management, science, decision making, negotiation, and much more. People who learn how to understand and interpret arguments put forth by others, and to speak or write strong arguments themselves, can better grasp complicated content and assess the merits of various positions. According to Gilbert (1996), "One major reason for arguing, then, is to learn: to explore, probe, and test a belief or point of view" (p 9).

Art museums are well positioned to help diverse audiences make the connection between art and argumentation through VTS. The STELLAR Project demonstrates the value of art-based teacher professional development programs and student curricula focused on argument writing. Art instruction is really training in observation and critical thinking—the same skills needed to make persuasive arguments, with claims backed by evidence. The STELLAR Project shows that art, through VTS, teaches students to synthesize data, draw conclusions, collaborate on ideas, and write cogent arguments. Art institutions can readily integrate VTS with new or existing art-based professional development programs for teachers and schools—and university art museums, with their heritage collections, are especially suited for this work; their old, rare, and important objects hold a wealth of information with potential to tell many

stories (Kozak, 2016).

More broadly, the STELLAR Project offers a powerful model for 21<sup>st</sup>-century museum outreach and education, and demonstrates the important and tangible impacts that museums can have on diverse communities. It suggests new ways for museums to use their experts and art collections to educate beyond art history and natural alliances. The job of the modern-day art museum is not only to expose people to art, but also to help audiences develop the “4 Cs”—critical thinking, communication, collaboration, and creativity skills (Trilling and Fadel, 2009), which are essential for success in all walks of life.

Because observation and critical thinking begin at an early age, museums should cultivate long-term partnerships with school districts to reach students. Many museums host classroom visits or artist-in-residence programs, but these initiatives tend to be one-off or add-on events that are not necessarily well-integrated into the curriculum. A strength of the STELLAR approach is its reliance on long-term partnerships to fill an identified need, with frequent, intensive, and focused contact. There is much to be gained by constant contact, which engenders mutual trust and understanding, encourages two-way conversations, and fosters sustained integration of visual literacy into the school curriculum. Two roles of the museum are to enrich lives by promoting interest in and developing skills in the visual arts, and schools offer museums an ideal place to further this important work. The investment of resources, time, and personnel is well worth it, for this helps ensure that the next generation will be equipped with the tools it needs to make sense of our changing world.

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