Tech Tools, Image Libraries Transforming Art History Classes

By Leo Doran

Over the course of an academic year, AP Art History teachers must get their students to respond emotionally and intellectually to artworks that are often found in galleries or historic sites thousands of miles away.

The college-level course covers pieces that include Emperor Qin’s Terra Cotta Warriors, buried in China’s Shaanxi province, and Caravaggio’s “Calling of St. Matthew,” which hangs in the church of San Luigi dei Francesi, a few blocks from the Pantheon in Rome.

Figuring out how to virtually “transport” these creations to the classroom, through photos, prints, and other means is a challenge for educators that dates back decades—even centuries. Teachers of art history have continually adapted to incorporate changes in image technology. Most recently, an array of new tools, particularly high-resolution digital images, immersive technology, and multimedia textbooks, have brought about a fundamental shift in how the discipline is being taught.
Photo, top: A printed textbook, Janson's History of Art, Eighth Edition, includes a floorplan, a written description, and images of the interior and exterior of the Basilica of San Vitale in Ravenna, Italy. Historically, textbooks and slide projectors have been primary tools used by art history teachers.
Image, below: A 360-degree panorama allows viewers to take an interactive, virtual tour of San Vitale, starting from the area behind the altar. Teachers of art history classes are using similar interactive tools to introduce students to famous works of art.
—Courtesy of the Columbia University’s Media Center for Art History

One of the most prominent of those platforms is Smarthistory, a nonprofit initiative founded a decade ago that has evolved into a widely used, free online multimedia introductory textbook in art history. Other tools, such as the databases Artstor and the Google Art Project, image and architecture viewers like Wöllf and Google Streetview, and technologies like virtual reality and 3D printing are also connecting students with works cloistered in faraway museums to a degree that was once impossible.

Smarthistory, which uses Khan Academy as its primary platform, features 5-10-minute videos of visits by art historians Beth Harris and Stephen Zucker to museums around the world. The platform presents viewers with high-resolution images of individual pieces of artwork, set to recordings of the pair’s semiscripted conversations and reactions to what they’re seeing.

Video: Smarthistory, a nonprofit that makes recordings of art historians interpreting prominent works, has created its own video interpretation of San Vitale, which focuses on the church’s layout and interior. Smarthistory content, which is being used by high school art history teachers around the country, was accessed by the public 13.5 million times in 2015, the organization says.
—YouTube
Stephen Murray, an expert in Medieval Art History at Columbia University, and a leader in the move toward high resolution imaging for decades, said that the combination of resources that have become available can be used to “replace a sense of static thinking with a sense of wonder,” particularly in complex areas like Gothic architecture.

Highly sophisticated works of art, like the Gothic architecture Murray studies, “does not turn into a book easily.” He said that while many in the discipline could buttress their lessons with technology, he has seen how well executed images “make students gasp.”

**Multiple Interpretations**

The Smarthistory videos, which are paired with articles and contributions from more than 200 experts in the field, have elbowed aside traditional textbooks and have become so popular that their content is the first result to appear in Google, after Wikipedia, when one searches “art history.”

John Gunnin, an art-history teacher at Corona Del Mar High School in Orange County, Calif., attributes the popularity of Smarthistory to the ability of Harris and Zucker to be “very articulate and conversational at the same time.” The videos also allow for multiple interpretations of the same work, which, incidentally, is a core point of emphasis in the new AP curriculum the College Board launched this year. (See related story on the [new AP Art History curriculum.](#)

“They really do go deep, they give good information, and they are succinct,” Gunnin said. “You can get a lot out of a six-minute video.”

Tiffany Alvare-Thurman, an AP teacher at Plano Senior High School in Texas, uses Smarthistory along with supplemental-textbook readings. She said her students prefer Smarthistory and visibly perk up when they hear the rolling jazz-piano introduction that accompanies each video: “These are 21st-century learners who are just more engaged in multimedia.”

Two of Alvare-Thurman’s 11th graders, Kathryn Brooks and Joshua Fowler, have embraced the multimedia lessons. Both said that if forced to choose, they would stick to Smarthistory over their art-history textbook to prepare for the AP exam.

Brooks said she appreciates how the conversational style of the videos allows for the experts to disagree over interpretations of the art—and how they tease out nuances and contradictions in possible meanings, rather than offer monolithic explanations.

“They is always an aspect of thinking for yourself,” she said.

Harris and Zucker believe the widespread use of their curriculum in classes validates their wide-lens strategy. Harris says they have content for “97 percent” of the 250 artworks covered by the newly overhauled AP curriculum. Though the College Board is not officially partnered with Smarthistory, the test-maker’s AP History homepage links to the art history platform’s website.

**Evolutions in Teaching**

Centuries ago, art instructors would copy paintings by hand or disseminate images through laboriously produced prints. In the 19th century, lithographs were used until black-and-white photography took over and allowed for the first “mechanical” reproductions of art.
For much of the 20th century, slide projections of color images dominated the teaching of art history. Students’ exposure to some of the world’s most important and sublime works of art came through overhead projectors or static, often grainy images from printed texts.

Today, online databases of high-resolution digital images mean that students can access millions of artworks, or move through virtual spaces, where their parents might have had access to only a few hundred lower-resolution images.

Standard of Ur, c. 2600-2400 B.C.E.
Image, top: Smarthistory has created a video entry on "The Standard of Ur," one of the better preserved and most illustrative artifacts extant from Ancient Mesopotamia. The work is housed at the British Museum, in London. —YouTube

Slider, below: By toggling this high-resolution sliding image, students and teachers have an easy way of enhancing an image from the "War" side of the Standard or Ur. The detail of the "War" panel comes from the middle of the lowest section of the artwork and depicts a soldier being trampled to death by a chariot. —Wikimedia Commons

Having access to precise reproductions of art in the classroom matters, argues Fowler of Plano Senior High. Images are “the next-best thing” to studying works of art in person, he said, and “a lot of intricacies can be missed if an image isn’t high quality.”

Some of the resources where the images are housed are public, such as Smarthistory or the Google art project, while other image repositories, like nonprofit Artstor, require schools or districts to buy an institutional license. Behind its paywall, Artstor also offers a slew of essays and teaching resources targeted specifically to the AP Art History exam.

The overall effect, said Zucker, is “an explosion in access to images,” including the ability to study a huge number of works outside the traditional art history canon.

While educators and cultural institutions have generally supported the movement toward making artworks available through digital images, the enthusiasm is not universal. Since the 1930s, the philosopher and cultural critic Walter Benjamin has warned that the proliferation of reproductions of original artworks risks diluting the impact of the original object.

According to Ian McDermott, the collection-development manager at Artstor, some museums, particularly in Europe, are wary of relinquishing virtual access to what they refer to as their “cultural patrimony.”

In other words, while many museums cite cost as the largest barrier to offering schools or the public digital access to their collections, some are worried about ceding control of digital assets, and others are concerned that virtual access could serve as a substitute for visitors coming to their institutions in person.

Furthermore, a more existential concern for Western traditionalists is how the larger collective image library has opened the door for modern schools of criticism to pick apart what they see as the proven ways of critiquing art.

As those voices have become more prominent in recent decades, the canon and its “political foundation” have become “more and more suspect,” said Harris of Smarthistory.

In that context, the College Board’s new AP Art History course, which jettisoned numerous European Baroque and Renaissance artists for a larger share of non-Western artists, is more evidence of a wider sea change in cultural values.

In addition to Smarthistory, other ed-tech platforms are giving educators an unprecedented ability to manipulate or enhance the quality of artistic reproductions in ways that would have been unthinkable a decade ago.

Greg Bryda, a doctoral candidate at Yale University, produced the Wölf app, a free mobile application launched last August that gives educators a platform to manipulate and zoom into
details of high-resolution images during their lessons through touch-screen technology.

The application, which Bryda developed to address his own teaching needs through a Kickstarter campaign, is named after Swiss art historian Heinrich Wölfflin, who pioneered the method of side-by-side slide comparisons in the early 20th century.

Despite the advantages a high-resolution reproduction can have in certain instances, Bryda believes there is no substitute for the original, and museums should not be concerned about the in-person attraction of their collections.

According to Bryda, the better an image is, the more likely students are to go out of their way to see the original in person.

“The first time a student sees a reproduction followed by an original,” Bryda argued, “they realize how important it is to see the original for all other artworks, because they are always different.”

**Virtual and 3D Viewing**

New technology, however, continues to close the gap between virtual reproductions and physical reality.

Art-history teachers are already taking their students on virtual tours of faraway places like Versailles through Google maps and Streetview—applications that are improving markedly with the plummeting costs of virtual-reality headsets like Cardboard.

*Streetview:* Google Streetview, which is used in some art history classes, provides an option for virtual visits to
museum collections and renowned architectural sites. Here viewers are taken to the Hall of Mirrors in the French palace of Versailles.

—Google

Those applications are especially important for giving students an understanding of architecture, as Brooks, the Texas student, explains, “with people and cars and streets, you get a different idea of scale and space.”

Dana Howard, Artstor’s K-12 relationship manager, which has its own library of 360-degree high-definition panoramic images, says the files are especially valuable in “leveling the playing field” between well-heeled students and those who can’t afford to travel.

Beyond virtual reality is 3D printing, which holds some promise for the possibility of recreating nearly identical copies of artworks from nearly the same materials.

Video: Another tool that may be on the horizon for educators is the prospect of printing 3-D copies of great works of art. This video shows researchers printing a highly faithful copy of Rembrandt’s 1667 oil painting “The Jewish Bride,” a process that begins with a highly detailed 3-D scan of the work’s topography.

—YouTube

The gulf between the experiences that students like Brooks describe in witnessing flat, digital images of Van Gogh’s “Starry Night,” and seeing the thick textured layers of impasto oil paint in person, could soon become a thing of the past.

In partnership with OCE, a division of the camera-maker Cannon, Dutch researcher Tim Zaman has
succeeded in scanning and reprinting topographically faithful reproductions of works by Rembrandt and Van Gogh with an oil-paintlike polymer.

While Zaman is quick to say that his reproductions are not perfect copies of the original, they offer an unprecedented degree of fidelity to the original object.

Bryda acknowledges that reproductions are getting ever closer in accuracy to original artworks—a trend that has museums appropriately concerned about protecting the aura that surrounds their collections, as well as their bottom line.

While cautioning against “fetishizing the original” pieces of art, Bryda said that original artworks will always have primacy.

After they’re created, original works “have an afterlife,” he said, by virtue of their historical presence in society, and the physical changes they endure over time, which he argues reproductions will never be able to fully capture.

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