ARTiFACT: Fostering expression through exploration of and access to the arts

Page McMullen and Lia Woo
Stanford University
November 30, 2001

Design Representation:  http://ldt.stanford.edu/~pagemc/mockup/

ARTiFACT offers an interactive, cross-curricular exploration of art. The objective of ARTiFACT is to develop experiences to encourage expression of understanding in children. By linking the exploration of art with other disciplines, ARTiFACT hopes to facilitate the integration of art into everyday curriculum.

ARTiFACT is composed of modules or ‘experiences’ in which fifth graders explore the concepts of a specific medium of expression, its relationship to another core subject, as well as participate in the process of creating art. The current experience being designed is ‘Developing History’, a module focusing on photography and history. In line with Seymour Papert’s idea of guided exploration, an expert avatar, named Arti, first introduces students to the formal concepts of photography, light, framing, contrast, and motion. Arti uses historical photographs to not only model formal photography concepts, but also to provide knowledge on significant events, times, traditions, and beliefs of the past. Students are encouraged to analyze the way visual images can convey a story. In this way, ARTiFACT presents content that integrates photography and history.

Within this first component of the experience, Arti guides students through a series of interactive activities, solidifying knowledge learned. For instance, to describe the concept of framing, Arti encourages students to reposition the camera viewfinder, demonstrating various shots. While students manipulate the frame, Arti provides active feedback by articulating the strengths and weaknesses of different frames.

ARTiFACT provides content in dynamic, multimedia forms, creating a space where students can actively explore concepts and their relationships to other disciplines. This integrated approach to art curriculum can “…broaden the means through with the student’s understanding is advanced by appealing not only to academic historical renditions… but by consulting…materials which may in the end speak as eloquently as anything a historian might write.” (Eisner, 2001)

Once students complete the concept experience, they are ready to embark on a hands-on experience. The hands-on activity allows students the opportunity to construct their own knowledge and apply the formal concepts learned. In the Developing History experience, the hands-on piece involves a series of activities. The first is to develop history. Using the concepts of photography, students take photographs of artifacts, people, and/or environments that they feel represent the present. The experience requires that students capture images that 1) show similarities between the present and the past 2) show differences between the present and the past 3) show how things have changed over time.
4) show how things have remained the same. (These criteria meet a section of the California standards requirements for fifth grade history.) Students then choose five photographs they feel best convey the connection between the present and the past. Collectively, students will post their photographs to the Share and Reflect space.

The second part of the experience asks students to write a reflection in their journal, using the formal concepts of photography they have learned, to explain how their images illustrate their history. These reflections will be kept private, only to be read by the teacher. After students reflect on their own work, they will experience a classmate’s photographs and write an essay describing what those images convey. Students will then be able to compare the responses of their work with their intentions to determine if they succeeded in telling their story.

Through ARTiFACT’s Share and Reflect space, a new context for exploring integrated art emerges, one that is social and personal. ARTiFACT attempts to inspire a learning community, where students learn through active interaction with fellow students, teachers, and multimedia systems. This intimate learning space creates new relationships between students and students and teachers. Students are able to learn about their work through their peers.

The design of ARTiFACT attempts to create an environment in line with principles derived from Vygotsky’s work. Vygotsky states that students should participate in authentic activities. “Children should have access to, and participate in, similar cultural activities to those of adults and should be using age-appropriate tools and artifacts…” (Bellamy, 1996). Vygotsky also argues that children should construct such artifacts and share them with the community. By students taking photographs and posting them in the Share and Reflect space, students are constructing and sharing their knowledge. The third principle weaved into the design of ARTiFACT is the idea of collaboration. Students collaborate with other students and teachers in the reflection of expressions. The online gallery will provide a more formal space to display student work and inspire collaborative reflection.

For successful and effective integration of ARTiFACT in classrooms, teachers must understand the way ARTiFACT alters the content, process, and context of exploring art. Therefore, an essential component of the design is a teacher’s guide to implementing ARTiFACT. The teacher’s space intends to motivate and support teachers in their use of ARTiFACT. The space includes an introduction to ARTiFACT, a component that highlights why it is important to integrate art and develop ways of expression, connections to grade five standards, assessment suggestions, and additional resources. The concept behind the teacher’s space is to scaffold teachers who may not have a formal art background and who are cautious to actively implement art exploration within their classroom.

We envision ARTiFACT to be used in grade five classrooms in a variety of ways. ARTiFACT is designed to be experienced as a class over a period of time. However, the ways of use can vary. Teachers and students can collectively progress through the guided
exploration section or individuals can experience the lesson on their own. ARTiFACT incorporates individual learning experiences (progressing through the concepts with Arti, taking photographs, writing a self-reflection) with collaborative experiences (Share and Reflect space) to create a unique way of exploring art.

The current capabilities of ARTiFACT represent a slice of a larger vision. ARTiFACT will offer a variety of experiences, focusing on various forms of expression. For instance, one experience may center on sculpture and science, another may concentrate on dance and math- the possibilities are endless. With the Share and Reflect space, ARTiFACT aims to connect students across the world. The design of the opening space for Share and Reflect can include a map of the world, with visual symbols represented the classes participating. The ultimate goal is for many classrooms to engage in an experience like Developing History over the same period of time. Thus, students will be able to share and reflect on images from another part of the world. Teachers can use the variety of content that emerges to spark discussion and encourage worldly thinking.

An idea to personalize the learning space is to have students create icons that represent themselves. When individuals contribute to the Share and Reflect space, their icon or image would appear next to their expressions. The process of designing an icon to represent one’s self not only encourages self-reflection, but also engages the student in the process of expression.

**User Testing**
Since ARTiFACT targets teachers and students, we asked both audiences to evaluate the site. Eleven users tested ARTiFACT and provided valuable feedback. Our users ranged from students (6th, 7th, 9th grade), to teachers (art and elementary), to artists, to our significant others. The informal testing took place at the user’s convenience. We provided no guidelines for their exploration and responses, as we wanted to see what strengths and concerns naturally surfaced.

The feedback we received was positive and encouraging. All the users thought the concept of ARTiFACT was useful and interesting. We received several comments that our logo was striking and bold. All the users said the general navigation was clear; however, several users commented that the directions for the activity in the Hands-on section were a bit confusing. The elementary school teacher repeatedly noted that the directions should be more explicit. For instance, clearly stating how many paragraphs compose an acceptable essay. Along these lines of explicitness, a couple users highlighted that some of our terminology in the student pieces were too complex for our intended audience (like ‘avatar’ or ‘interdisciplinary’). However, Alex, a seventh grader, had no trouble clearly understanding the goals of the site. When asked what he thought the purpose of ARTiFACT was, he said, “…that you want fifth graders to learn the concepts and methodology of art, and use it express themselves and their views on life and this world.”

An older student who tested ARTiFACT told us that she would rather engage in a discussion with another student than write an essay reflecting on the Hands-on activity.
This excellent idea is one that we will explore – in what new ways can we foster small group discussion and interaction? How will technology support this interaction? Also, how can ARTiFACT scaffold the students in their reflections? Another new idea that emerged involved students creating a timeline of their lives. The timeline can visually represent their development, growth, and change in values and interests.

A user suggested incorporating different guides for different experiences. This is an idea that we definitely explore. Also, when possible, we would like to utilize a professional artist as the expert guiding the students. Students could even work with the expert on the creation of a collaborative piece of expression. (see Idea Sheet 1)

From the users feedback, it is clear that we will need to make the Concepts component, complete with an expert guide, more concrete. This piece will introduce the integrated content that students will explore. One of our users, an artist, offered to be available for consultation on content information. Since this design representation is the beginning of a tool that will be developed for our Masters project, one of the next steps will be to construct a working Concepts component. Before we attempt to execute this task, we are brainstorming in search of wild, innovative ways to use technology to teach the concepts. The attached idea sheets briefly outline two of our current thoughts.
Idea Sheet 1: Follow an Expert!

An alternative option for Arti, the expert avatar, is to involve a professional artist in the learning process of ARTiFACT. Students will follow the artist on their journey of creation. The artist can lead the students (either live or taped) through the Concepts component of the experience and then model the methods described. Students will follow the evolution of a piece of expression, with the artist explaining the choices, values, and concepts behind their work. Students can model the process within their classroom. This form of apprenticeship will deepen students’ exploration of expression and help them understand the connection between formal concepts and professional art creation.

Through chat rooms students will have the opportunity to probe artists to comprehend the rationale and motivation behind decisions. Students are encouraged to offer their own suggestions and critiques and hear the artist’s responses. Students can also learn first hand about the rewards and challenges of being a professional artist.

An example

Students in Mrs. Kline’s fifth grade class are currently using ARTiFACT to study the process of expression. The experience connects the process of writing with that of painting. The Concepts component involves a constant interaction with Chris Saper, painter and writer. By observing his process of painting and hearing his thoughts, students are able to understand the parallel process of creating a painting and writing an essay. Saper, who lives in Hawaii, tapes his painting sessions in his studio and outdoors. While painting, Saper verbalizes his thoughts, helping students see the process. Students watch the video in class. Saper says, “Although the process of painting clearly requires an integrated approach, there are some simple and necessary decisions to be made along the way, and they should be made in a logical sequence.”

Saper explains to the students that there are three simple stages in creating a painting, early, middle, and final. The first stage, ‘Think Before You Paint’, involves identifying the center of interest, creating thumbnail sketches, determining the color of light, and determining the color of harmony. The second stage, “The Painting Process”, is when an artist makes the color choices and paints! The third and final stage, “Proofreading Your Painting”, requires the artist to identify if the center of interest is clear, if the composition is effective, if the color temperatures are unified… Students model this approach to painting by engaging in hands-on activities in class.

The teacher and Saper scaffold students by encouraging students to draw connections between the processes of painting and writing. To integrate and strengthen this relationship, students are asked to write, following the same process, a reflection of a peer’s painting. Students capture their paintings with a digital camera and upload the images as well as their writings to the Share and Reflect space of ARTiFACT. Students from all over the world can experience the class’ work and respond.
Idea Sheet 2: Interactive Examples

So many art concepts are best illustrated by examples, but there is no guarantee that students are really seeing the concept in the example. Manipulating the examples of concepts would allow children to explore and construct their own knowledge of art concepts. These interactive examples would be embedded within a process of learning. Prior to each of these interactive examples would be an explanation by Arti, the avatar, or the expert artist. During the explanation, the concept would be modeled. In this way, students are guided to direct their attention to the appropriate aspects of the photograph before they engage in the activity. The presence of the avatar or expert is essential since many teachers have not received the proper training to provide correct, detailed feedback on art works.

This idea, itself, is best illustrated through examples.

An Example

Students are studying the concepts behind photography. On the computer, they are presented with a scene and a frame that may be repositioned using their mouse(s). Students are allowed to explore how framing affects the dramatic and expressive nature of the photograph. Each time the student finds a framing he or she likes, a click of the mouse will take the snapshot. The snapshots are recorded and displayed for the student to review. In addition, students will receive feedback from Arti, the avatar, or the expert who is guiding the unit.

A second concept within photography that can be illustrated with an interactive example is contrast. Students are presented with one scene in which they can change the lighting to adjust contrast. More contrast would be achieved through direct sunlight causing deep shadows and bright light. Moving the slider towards the cloudy end of the spectrum, students will see how indirect light affects the overall presentation of the photograph. Feedback on the different contrast levels would be provided in this exploratory phase. Following this activity, students are presented with a series of pictures in which they can adjust the contrast to reflect the mood of the picture. Again Arti or the expert would provide feedback on these choices.

A similar idea could be used to demonstrate focus and depth of field. By adjusting the aperture of the lens, students would manipulate the focus of the photograph, consequently, adjusting the subject of interest of the image. The aperture could be represented by a circle displaying the scene whose diameter changes based on student input. The students would see how the size of the opening would affect the amount of light entering the lens. In addition, students would be engaged in a concrete experience on aperture adjustments, which is often a difficult concept to understand because of the seemingly abstract relationship between the numbers and their effect. This activity also enables the integration of other subjects like math and science into Developing History.