

Integrated Circuits Across the Arts: How ArtsBridge Scholars Use Technology in Working with Pupils

In the Spring of 2002, ArtsBridge distributed a survey to a sample group of scholars across eight University of California campuses to solicit their **perspectives on the use of technology in the arts and its application in their instruction of pupils**. The survey instrument included scaled-response and open-ended items and was available as a hard copy and electronic document. The questionnaire **intentionally employed a broad definition of technology**, incorporating computer hardware and software; Internet use; storage media; electronic musical instruments and recording technology; digital, video, and conventional cameras; and others. The survey also solicited **information about technology use with respect to planning, performance, presentation, use as a resource for research, assessment, archive, or other purpose**. Finally, scholars were asked to **comment on opportunities and challenges involved with using technology in arts education**. Findings from the survey questionnaire will be integrated into a larger and more comprehensive study of technology use among ArtsBridge scholars and host teachers that will include interviews and structured observations. Although ArtsBridge offers instruction in digital arts

(a specialty area using technology almost exclusively), we found that our sample of 60 scholars **incorporated various types of technologies into even the most traditional settings for varied purposes**.

The sample breakdown by arts discipline is as follows: 26 percent visual/studio art or related fields; 15 percent music or related disciplines; 19 percent dance or related disciplines; 28 percent drama or theatre arts; and five percent "other"¹. **Only seven percent of the sample constituted digital arts specialists**. Some of the more significant survey findings are presented below:

- **40 percent of ArtsBridge scholars reported using the Internet** as a pedagogical tool with pupils. Uses included virtual tours of museums, communicating with international pen pals, downloading shareware, among many other purposes.
- **38 percent of scholars in the sample used digital or video cameras to record performances, frequently providing feedback** to pupils using these media. Close to **30 percent** of scholars surveyed used **Digital Video Disks (DVDs), videotapes, or Compact Disks (CDs)** both as a storage medium and a presentation tool. Eight percent of scholars reported using electronic instrumentation with pupils, such as synthesizers and MIDI.
- **28 percent of scholars surveyed indicated that they used computer hardware and software regularly** with their pupils as part of ArtsBridge instruction. Packages used included Dream Weaver, Kid Pix, Finale, Illustrator, Photoshop, along with more conventional software, such as Word, Power Point, and Excel. **Twenty eight percent of scholars** used other types of technology, including portable stereos, scanners, LCD projectors and Digital Audio Recorders (DAR) in their work with pupils.

¹ "Other" includes smaller categories such as Art History, General Art, Architecture, Photography, and Scientific Illustration.

- **Over 60 percent of ArtsBridge scholars** indicated that they **used technology in planning lessons or instructional activities** for their ArtsBridge projects. Technology was used as a **resource for presentation and research** by **fifty percent** of survey respondents. Approximately **45 percent of participants used technology as a means to archive** and store data on pupil performance. **Twenty two percent** of the sample **used technology as an assessment tool** in working with pupils. **Seventeen percent of scholars** used technology for other purposes, including the creation of storybooks with pupils

Scholars responding to the ArtsBridge survey suggested that **technology presented several opportunities** to impact their work with pupils. Among those cited were the following:

- Value of technology in archiving, organizing, and record keeping;
- Promoting awareness of performance and celebrating pupils' artistic accomplishments;
- Helping students to understand their strengths and areas to work on through modeling;
- Cost effectiveness of technology as a means to research, present, and to offer immediate access to art works across the world; and
- Value of technology as a hands-on motivational learning tool, capable of opening "new worlds" to pupils.

ArtsBridge scholars also highlighted a **number of challenges involved in using technology** with their pupils. These included:

- Insufficient access to technology at host schools;
- Difficulties associated with determining pupils' technology aptitudes and interests in using technology, especially when taken in the context of age appropriateness; and
- Issues related to the learning and teaching of technology, including expense, need for one-to-one interaction, differential pupil ability, time requirements, and limitations of pupils' attention spans.

Although our observational research on technology use by ArtsBridge scholars is in an initial phase, findings from classroom ethnographies suggest that **far from an add on, technology has been integrated into arts education in significant ways**. For example, at South Lake Middle School in Irvine, the ArtsBridge scholar and host teacher work with pupils to build multimedia presentations using Photo Shop and digital cameras. In using technology, pupils become familiarized with perspective, shading, and other critical visual arts concepts. At Laguna Beach High School in Laguna Beach, the ArtsBridge scholar works with dancers using digital and video cameras to present feedback on performance and suggestions for improvement. At Brookhurst Junior High School in Anaheim, ArtsBridge scholars working with middle school students on a production of Shakespeare's *Romeo and Juliet* use videotapes to help budding actors enhance their performances. Pupils will enact a scene, and will be shown the identical scene from the late 1990s version of the film starring Leonardo di Caprio. Pupils, scholars, and the host teacher then review pupils' performances collaboratively and present feedback based on their understandings of the scene and the film. In April of 2002, the **Claire Trevor School of the Arts collaborated with the UCI Department of Education to bring hundreds of Orange County ArtsBridge pupils to engage in a weeklong presentation of interactive computer-based lessons** designed by pre-service teachers using HyperStudio 4. These lessons **allowed pupils to become deeply immersed in history and to enhance their literacy skills**, often providing opportunities for them to take on the roles of important figures from the Gold Rush to the modern period.

Our research to date suggests that **far from replacing traditional materials, new technologies can serve as fundamental tools to help immerse children and young adults in the arts, nurturing their inventive spirits and providing important media to further the creative process**. For the ArtsBridge scholar, new technologies facilitate instructional delivery and the assessment process. As technology use in the arts becomes increasingly sophisticated, those involved in arts education will be presented with **unique opportunities to share great works with others and inspire future generations**. The Center for Arts Research in Education (CARE) will continue to examine these processes in depth, especially as they pertain to collaborative relationships between universities and schools pursuing innovative curricula and instruction in the visual and performing arts.