



Application in Education

**California Science Center
Los Angeles, California, USA**
www.californiasciencecenter.org

The California Science Center combines a major hands-on science center, an adjacent neighborhood elementary school and the Wallis Annenberg Building for Science Learning and Innovation, a learning environment for teachers, children and scientists, all in one location. The best explanation of what the science center does is described by their mission statement: "The California Science Center aspires to stimulate curiosity and inspire science learning in everyone by creating fun, memorable experiences because we value science as an indispensable tool for understanding our world, accessibility and inclusiveness, and enriching people's lives".

The WolfVision Portable Visualizer not only assists staff members of the Amgen Center for Science Learning (the Science Center's educational programming division) to teach science to students but also to demonstrate to educators how they can teach hands-on science experiments themselves using state of the art technology. The Visualizer's capability of showing live demonstrations on a large screen allows them to provide better and more interesting learning experiences to a larger number of educators and an ever increasing number of children.

The high frame rate of 30 frames per second allows experiments to be shown in real-time motion. WolfVision's Progressive Scan Technology combines all actions and displays them in high resolution. The auto focus ensures pictures are automatically and instantly adjusted and sharp. The Zoom Wheel makes it easy for the user to magnify and show details in a controlled manner.

Small scale phenomena, techniques, procedures, diagrams and tables can be presented engagingly. Generally, one of the biggest hurdles in science education is the uncertainty that many teachers feel in teaching science. They don't know how to effectively incorporate hands-on science experiments into their lesson plans in interesting ways.

Many teachers have simply never seen hands-on experiments being used before, let alone conducted one on their own.



Children having a blast(above)while working on a hands-on science experiment which was demonstrated for them by their teacher on a large screen using the Visualizer (see below)..



The WolfVision Visualizer lets them see what interactive science teaching and learning is all about. And if educators get excited about it, they will more likely be able to make it an exciting reality for their students. Also, the simple operation of WolfVision devices makes it easy for them to use, a point not to be underestimated when trying to integrate new technology successfully.

Since summer 2004, Science Center professional development programs have included one-day workshops for educators from elementary and secondary schools, mostly from within LAUSD (Los Angeles Unified School District). In these workshops, teachers split up into small groups so as to lead their own simple hands-on science experiments.

Now with the availability of the Visualizer, the center is in the process of rethinking these seminars, so that in addition to having educators experience rudimentary science experiments, they can also now start demonstrating how to conduct more advanced, live science experiments within their own classes.

The Visualizer enables all this by showing educators procedural elements, step-by-step, live and on large screens, before asking them to do it by themselves. The 9-image memory allows saving each experiment step by step, and later recalling these images from the memory of the Visualizer by just pressing one button.



Teacher using the zoom wheel to magnify specific objects.



Teacher using 9-image memory to recall various stages of a science and also from a previously scanned text book illustration.

As their new Math and Science Camp from the Science Center's Professional Development programs expands, more and more teachers have hands-on experience using the Visualizer.

There was already one instance of an educator being so impressed with the Visualizer that he went on to acquire one to use in other week long training programs for LAUSD.

The WolfVision Visualizer has allowed them to bring Best Practice science learning techniques to educators, and these will in turn, impact science learning experiences of students all over Southern California.