

An elementary school that combines Electronic Whiteboards with easy-to-operate video cameras to study and implement education — "Making it fun for all children to learn."

Installation Details

Studying and Implementing Elementary School Education Using Electronic Whiteboards

Kochi City Educational Committee is an administrative organization that manages a variety of schools in Kochi City, including 41 elementary schools, 19 junior high schools, a school for handicapped children, a commercial high school, and a kindergarten. It has also established an Educational Research Institute and is engaged in the research of ICT (Information and Communication Technology). The Kochi City Educational Committee recently installed Panasonic 65-inch multi-touch screen displays for use as Electronic Whiteboards, including several units in the Kochi City Kanda Elementary

School. Kanda Elementary School is a designated school for Kochi City's ICT Educational Research and took part in the Panasonic Educational Foundation's 40th Ordinary Research Assistance School Program. Based on the theme of "making it fun for all children to learn," the school studies and implements elementary school education based on the ICT System.

Easy-to-Use ICT Systems Were Constructed by Combining Peripheral Devices That Can Be Used Without PCs

A total of 85 ICT Systems were used, centering on the LFB70 Series high-resolution LCD display with a touch panel based on the Infrared Blocking Detection Method. Three of these ICT Systems were installed in



Information written onto a blackboard can be used together with enlarged PC materials and video camera images displayed on the Electronic Whiteboard. This enables effective classes while holding the students' interest.

the Kanda Elementary School. The LFB70 Series LCD displays were highly evaluated for the following features:

- A built-in Whiteboard function that allows use immediately after turning the power on.
- Wireless connection for tablet devices and applicable video cameras without having to use a PC.
- A durable protective glass on the front surface of the display for break-resistant safety in the event that a child accidentally strikes the display.

In addition, the ICT Systems included the following equipment:

- The "Boken" Digital Full-HD Video Camera for educational use, making it possible to intuitively and easily shoot images, then enlarge and view them on the display.
- A DIGA BD/DVD Recorder for playing educational BD and DVD media.



Students use the Boken Video Camera to record their handwritten notes, then enlarge and display them on the Electronic Whiteboard. Information can also be written directly onto the displayed images without having to use a PC, so the teacher can add additional comments during the classroom session.

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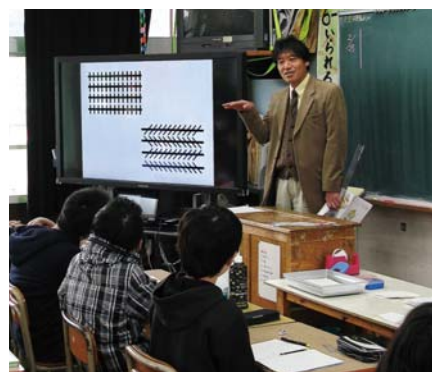
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Example of Use in Class

By Displaying Video Camera Images on the Electronic Whiteboard, Classes Allow All Students to Share Opinions in an Easy-to-Understand Manner

Here, the 6th grade class is using the Electronic Whiteboard and Boken Video Camera to participate in a game called "Arithmetic Graduation Trip" that allows them to experience the wonders of geometry and mathematics. For example, various optical illusions are shown on the large-screen display so the entire class can share the fun of viewing them. PPT files into which the drawings have been pasted are then saved in a PC and viewed as a slide show. The display has a wide viewing angle, so even students sitting at the edges of the classroom can see them clearly. This raises the interest of each student. In classes where the teacher writes problems onto the blackboard for the students to solve, interesting ideas and viewpoints can be written into the students' notebooks and captured with the Boken Video Camera for enlarged display on the Electronic Whiteboard. In addition to allowing all of the students to

see the images and share the content, this encourages greater thought by all. Points and hints for solving problems can also be written onto the notebook images displayed on the Electronic Whiteboard. The Electronic Whiteboard and Boken Video Camera combination is easy enough for the students to operate, so it can also be actively used for presentations during group learning sessions.



The wide viewing angle lets even students sitting at the edges of the classroom see the drawings clearly.

After Installation

Increasing the Desire to Learn with the ICT System

Since three ICT Systems have presently been installed in the Kanda Elementary School, only a certain number of classes can use them at the same time. However, the school principal, describes the effect of expanding the system, saying "In the future, when more of the ICT Systems are available to the students, we'll be able to save the time that it now takes to make enlarged copies of textbooks and prepare teaching materials by pasting them onto special paper, and use that time instead to concentrate more on class preparation." He also praises Panasonic's multi-touch screen displays, which can serve as whiteboards without having to use a PC, by explaining that "All you have to do is turn on the power, which is a major advantage for teachers that have difficulty operating complicated devices."

In lessons where the Boken Video Camera is used to record images of notebooks and other materials and then enlarge and display them on the Electronic Whiteboard, good ideas can be easily shared by the entire class, so it motivates and increases the students' desire to learn. Use is also possible in a wide variety of classes in addition to the mathematics class that is covered in this report, providing considerable potential for future ICT Systems. As one of the educators described it, "We can think of a lot of interesting uses for the system."

Example of combining the Electronic Whiteboard and Boken Video Camera

Students capture notebook images at their desks

Easy-to-operate Boken Video Camera for educational use
はろけいけん
 Digital Full-HD Video Camera
HC-BKK1

Enlarged and displayed on the Electronic Whiteboard

Wireless data transfer

▲ The easy-to-use Boken Video Camera can be used by the teacher between desks. Unlike a Document Camera, images can be recorded, enlarged, and shown all at once on the Electronic Whiteboard for highly effective lessons.

▲ Notebook images enlarged and displayed on the Electronic Whiteboard can be directly written into. Points and hints for solving problems can be added.