

# Increasing Students' Motivation, Comprehension and Expressiveness, and Improving Academic Performance by Installing and Using ICT Systems, Including an Electronic Blackboard.

## Installation Details

### A Board of Education That Focuses on Classroom Research Using ICT

The Motoyama-cho Educational Committee is an administrative organization that manages two elementary schools within Motoyama-cho, a daycare nursery, and a junior high school that integrates both junior high school and high school education. In recent years, the Educational Committee has been active in researching and enhancing classes using ICT, and decided to implement ICT Systems, including electronic blackboards, in all the schools within Motoyama-cho starting from 2014. Prior to that, in order to review the potential effects of implementing the system into classrooms, and to learn the details of the system, they conducted an advance implementation of an ICT System at Yoshino Elementary School.

Panasonic's LFB70 Series Multi-Touch Screen LCD Display was used for the electronic blackboard.

### The ICT System Features a Robust Electronic Blackboard That Offers High Image Quality

Principal Kitaoka of Yoshino Elementary School felt a slight challenge with regard to the "expressiveness" needed to convey his own feelings toward his students. From his personal experience, he believed that "utilizing an ICT System was extremely effective in increasing children's motivation, comprehension, and expressiveness in their studies," and actively participated in constructing the ICT System. For the selection of the ICT System device, the Yoshino Elementary School Educational Committee compared and evaluated the electronic blackboards of various manufacturers based on the perspective of the students, such as



Content can be displayed from an electronic textbook on a large screen. Clear, vivid images keep students glued to the screen. This can increase the ability to focus in class and improve comprehension.

whether "the children can operate them" and "will the images appear clear enough for the students?"

The LFB70 Series received high acclaim for the following points, which led to the decision to choose Panasonic's electronic blackboard.

- Outstanding image display capabilities that can faithfully reproduce vivid images with subtle differences in colors.
- Operational capability that can be intuitively controlled by everyone, from children to veteran teachers.
- A protective glass on the front surface of the device that prevents the screen from getting scratched. Also, the system is highly robust and won't break if a student accidentally bumps into it.
- A strong support system that can be used to resolve any problems (such as inquiries) that may occur while operating the device.

The 65-inch screen was selected based on its use in the classroom, and along with the TH-65LFB70, four sets of the ICT System that combines a tablet terminal and other linked software were delivered to Yoshino Elementary School.



The students' own work can be recorded with the tablet device and instantly displayed with an enlarged image on the electronic blackboard to easily create opportunities for presentations. This lets students improve the way they convey their own thoughts (expressiveness).

# Professional Display System Report

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## Example of Use in Class

### ICT Systems Were Permanently Installed in Classrooms and Used in Various Ways

At Yoshino Elementary School, ICT Systems were installed in four classrooms. Because they are permanently installed, an environment has been established that enables students to use them whenever they want. The systems can be combined with an electronic blackboard, tablets, and linked software, enabling flexible operation in a wide range of styles for lessons.

#### ■ Lessons Linked with an Electronic Blackboard and Tablets

In order to improve the student's "power of expression" to convey their own thoughts, a software called eTalkie is used to link the electronic blackboard and tablet devices. By displaying images from any given tablet onto the electronic blackboard using the eTalkie software, images can be enlarged and displayed on a single screen, on a split screen in a quiz format, or displayed onto all devices in unison. By providing students who have difficulty expressing their own thoughts with an opportunity to give presentations using the ICT System, their activeness and power of expression have significantly improved. The tablet devices have cameras built into

them, so they can also be used as document cameras. They can also be brought out for field trips, and recorded images can be displayed onto the electronic blackboard back at the classroom.

In addition to displaying images from a tablet, the electronic blackboard can also display electronic textbooks and display



▲ Everyone focuses on the screen.



▲ Write onto the screen while displaying enlarged images of textbooks and move ahead with the class. When preparing materials, Japanese language lessons can be made easier to understand by visual presentations using various colors to show sentence structure and word relationships.



English education is also emphasized at Yoshino Elementary School.

(Pictured at the left) Using a short amount of time, content from vocabulary flash cards is used. The ICT System is permanently installed in the classroom, so it can be set up instantly for effective use of time.

(Pictured at the right) The Board of Education also creates original educational content to actively offer support.

enlarged course materials onto a screen for explaining while simultaneously writing to achieve easy-to-understand and interesting lessons. As a result, the students' motivation and comprehension toward learning can be increased, and an improvement of 10-20 points can be expected in various academic achievement tests.



◀ In order to prevent the electronic blackboard from falling over in the event of an earthquake, it is fixed to the wall with chains (red arrows) when not in use.

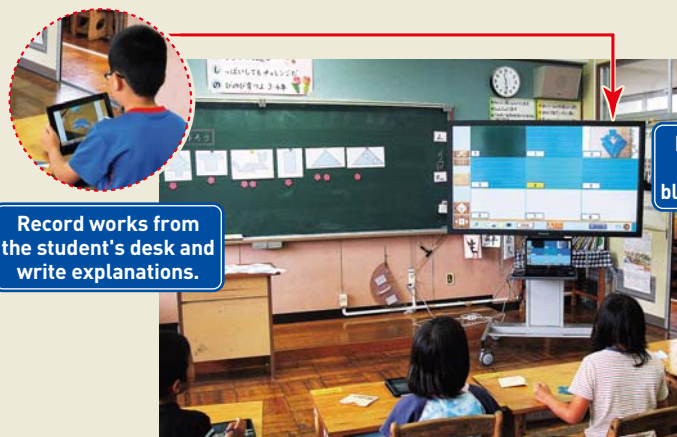
#### After Installation

### Increased Comprehension and Academic Achievements Are Clearly Felt Due to the Installation of the ICT System

According to Ms. Kawazoe, a teacher at Yoshino Elementary School who actually uses the ICT System in her classroom, "It's very easy to use, and it lets me proceed with lessons smoothly. When I use the electronic blackboard for a lesson, the students look on with great interest, and as a result, it helps them understand the content even better." Mr. Kitaoka, the school's principal, added, "Shy students who resisted giving presentations can now write their own thoughts down onto a tablet and present their work, and they're gradually becoming more active and expressive. Looking at the results of various academic achievement tests, the math scores have increased by about 20 points, while other subjects have increased by over 10 points. Using this system, we've been able to see amazing effects."

#### ■ Linkage Examples Between the Electronic Blackboard and Tablets

Images from tablet devices can be displayed onto an electronic blackboard. Images from each student can be displayed one by one in order, making presentations easier and enabling students to listen more carefully.



Record works from the student's desk and write explanations.

Enlarge images onto the electronic blackboard and present.