

Real-Time Interactive Education Environment Powered By Wacom Interactive Pen Displays Kangwon National University at Samchok

Kangwon National University at Samchok was founded in 1939 as Samchok Vocational Public School with a mission to impart new skills among workers in the energy sector for effective resource development. As one of the leading industrial vocational education institutes during a period of heavy chemical/industrial growth in the 1960s and 1970s, it empowered many students to lend their skills to the industry. In 1991, its status was raised to that of a national university. The merger with Kangwon University in 2006 is considered as the turning point for the school to strengthen its position as one of the leading the national university of Central Korea, and set the foundation for the institute to take the leap forward and expand itself into a world-class university. It currently comprises four colleges: Engineering, Design, Humanities & Social Sciences and Health Sciences.



Kangwon National University at Samchok offers a specialized curriculum and actively promotes experiential learning for students who require a field-centric curriculum. Its efforts have been recognized by industry, resulting in an increase in employability of its graduates to an average of 80% in recent years. In addition, almost 60% of its students receive scholarships.

Revolutionizing the Classroom Experience Based on the Concept of Hands-on Education

The educational objective of Kangwon National University at Samchok is to contribute locally, nationally and globally to the development of talents by integrating best-in-class textbook education with on-the-ground hands-on learning. This enables the school to not only develop its students as useful contributors to the industry, but also to contribute to the society and communities they operate in.

Based on this educational philosophy, the University strives to provide a consistently better educational environment and learning experience for its students. It has installed electronic lesson desks equipped with projectors and PCs in all classrooms to shape a teaching system that utilizes a wealth of e-Learning tools. However, despite the heavy use of multimedia to train students more effectively, the school was confined to only using pre-produced multimedia for the lectures. The professors and students, who weren't familiar with state-of-the-art technologies, preferred the traditional lecture method and rarely utilized the new equipment that had incurred a significant capital investment.

To address this, early in the semester Kangwon National University at Samchok embarked on educational-environment innovation project that entailed provision of two Wacom Interactive Pen Displays (PL-720) in each department to facilitate a more effective learning environment. The results were great. Now, users can operate the Wacom Interactive Pen Displays the same way they would draw a picture or write on a sheet of paper with a pen. There is no need for special training. All the user has to do is to pick up the digital pen and write. This paves way for better communication between the professors and students while building future-oriented digital classrooms.

Another very effective way of using the Wacom Interactive Pen Displays is to connect it to a projector, and use it as an electronic whiteboard to increase the student's understanding of the lesson, and maximize the lecturer's potential.



Turning “Ideas on Paper” into “Ideas in Practice”

Kanwon University’s College of Engineering specializes in science and technology, whereas the College of Design is the centre of excellence for arts and culture enthusiasts. Together, the two colleges collaborate their resources to shape strong talent that is able to contribute momentarily to the industry. In 2001 the university became the first national institute to establish a Division of Fire & Disaster Prevention (comprising the Department of Fire Protection Engineering, Department of Disaster Prevention & Safety Engineering and Department of Fire & Emergency Management). With an exclusive focus on catering to the future needs of the disaster-prevention industry it continues to be a local center of excellence to develop the new talent who will play a critical role in national growth.

The departments actively use Wacom Interactive Pen Displays to build the educational environment and turn “ideas on paper” into “ideas in practice.” The transformation from lectures centered on writing on boards to interactive lectures, employing the visually captivating Wacom teaching tools that enable users to freely share the ideas, has clearly increased the student participation and understanding. Moreover, they help in building a lively atmosphere through interactivity as now professors and students face each other throughout the class.

Building of Future-Oriented Classroom Facilitating Good Rapport between Professors and Students

Wacom Interactive Pen Displays not only facilitate professors in delivering their lectures effectively, but also increase the concentration span of students. With the growing use of PowerPoint for lectures, a professor can add the information on the digitalized lecture material in real time, thus making the information more retentive. The same applies to student presentations in the classroom. The effectiveness of presentations greatly increases as the presenter delivers the presentation. It is just like drawing or writing on paper instead of having to look at the presentation material on the screen, which dilutes user interest.



With lectures using Wacom Interactive Pen Displays receiving positive response from professors and students alike, Kangwon National University at Samchok has decided to expand them to all lectures, and to distribute more multimedia materials in an effort to increase their utilization. It plans to strengthen its position as an education institute serving the nation and community through the transformation of budding talent into creative and knowledge resource, and by progressively upgrading vocational skills of local and national manpower.

**[Interview with Prof. Baek Seok-heum
from the Department of Mechanical
Engineering]**

Which classes do you currently teach?

I've begun teaching the Material Mechanics class, which is a mandatory course for mechanical engineering majors this year. Students in the Material Mechanics class learn the basic properties of materials needed to build a machine. Since the students don't simply memorize the properties of materials but also study their changes under different environments, my lectures comprise presentation of complex charts and equations in the class. Therefore, I always use PowerPoint to facilitate learning.



How often do you use Wacom Interactive Pen Displays?

Since I use the projector and PowerPoint in almost all of my classes, I use the pen displays very often. With the adoption of Wacom Interactive Pen Displays, more professors who were previously reluctant to use PowerPoint, thinking that it wasn't user-friendly, now use them because it has become easier to use the tool as they can write directly on the monitor.

What is the benefit of using Wacom Interactive Pen Displays in your class?

PowerPoint can't explain everything, because my lectures involve a lot of equations. You can't solve a problem just by looking at it. So, Wacom Interactive Pen Displays helps problem solving dramatically, because I can write directly on the screen. Before I used Wacom's pen displays, I would show the PowerPoint screen and then write the problem and solve it on the board. Now, I don't have to do that because I can write directly on the screen. This increases each student's concentration in the class.

What has changed since Wacom Interactive Pen Displays were adopted?

As I said earlier, the students' concentration in the classroom has clearly increased. Previously, when I wrote something on the board, I had to turn my back towards the students, which disrupted the flow of the class. However, using Wacom Interactive Pen Displays allows me to continuously face the students, and I like that. I can easily tell whether or not the students are following my lecture. Although it isn't directly related to lecturing, another change is that I don't have to inhale the chalk powder anymore. The fact that I don't have to worry about dropping the chalk or marker is another convenient factor.

How are the students responding?

The students have responded well. They previously had to watch the PowerPoint display and the board in turns, but now it's easier for them to understand the lecture because they only have to follow the screen. Moreover, the use of the whiteboard wastes time because one has to continuously write and erase the content, but Wacom Interactive Pen Displays helps save time. Also, it is a helpful tool for their presentation assignments. Students who aren't used to writing on a board prefer it because they make the presentation as if they're writing on a notebook.

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