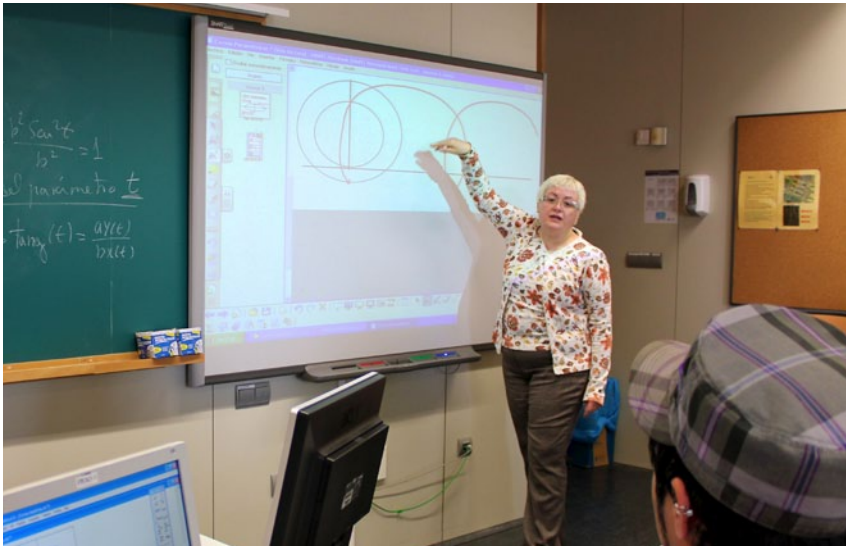**SMART**®

SMART Board® interactive whiteboard improves the training of engineers
University of Valencia, Valencia/Spain

Pepa Marín, lecturer in the Applied Mathematics Department teaching a first year class.

In 2010, the Engineering School in Geodesics, Cartography and Surviying of the Technical University of Valencia celebrated its 20th Anniversary with the satisfaction of having become one of the most prestigious engineering schools in Europe. Besides the quality and experience of its teaching staff, its success is due to its commitment to ICTs and equipping its students and lecturers with the best teaching/learning tools. One of these tools is undoubtedly the SMART Board® interactive whiteboard which has been installed in all the classrooms since 2009.

In addition to the 11 classrooms equipped with interactive whiteboards, the school has an SMART Board interactive whiteboard in the applied mathematics seminar room and a portable SMART Board interactive whiteboard in the boardroom. They also plan to purchase an additional SMART Board interactive whiteboard for the conference room where students present their dissertations. The implementation of SMART Board interactive whiteboards is part of a larger project, including computers for students in the lecture and tutorial rooms, subject-based websites where lecturers upload educational content, projects and assignments to be carried out by the students. The goal of the project is to ensure that students have a variety of ways to collaborate with each other. "Our school has very good resources," says Ricardo López, vice-chairman of the school. "We have gone to great lengths in recent years, and now we are reaping the benefits. We're considered as one of the best departments in its field in Europe and we maintain an optimum number of students. I believe that we are the first engineering school in Europe with interactive whiteboards in all classrooms."

With SMART Board interactive whiteboards in their classrooms, lecturers say their classes have become more dynamic and they are able to explain concepts more clearly. "Being able to highlight the most important aspects using the interactive features of the SMART Board interactive whiteboard, without being limited to a previously designed presentation, such as a PowerPoint presentation, brings freshness to teaching," says López. In his classes, López says it is important to make notes as the class progresses, save them, review them and then

Challenge
Find the best digital tools for teaching and learning to equip one of the most prestigious engineering schools in Europe while continuing their commitment to ICT's in Universidad de Valencia.

Solution
Installation of 11 SMART Board® interactive whiteboards in the classrooms, one in the applied mathematics seminar room and a portable in the boardroom.

Result
With SMART education solutions, lessons have become more dynamic and the students have better visualization of complex geometric figures and solutions to mathematical problems.
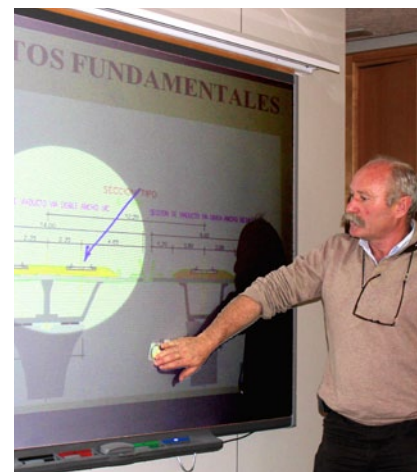
send the notes to students by email or upload them on the class website after the class. Teachers like to use the features in SMART Notebook™ collaborative learning software to engage students. They often use the Spotlight or Screen Shade feature to focus attention on the material that is being explained. "I have to explain aspects related to construction work and field work. I need to use many drawings and photographs," explains López. "It is helpful to be able to mark and indicate the points that I am explaining, for example, highlighting where to position the supports of a bridge floor. It also enables me to allow students to come up to the interactive whiteboard and do it themselves."

"When we were considering installing SMART Board interactive whiteboards we were evaluating the different options available. The SMART Board interactive whiteboard was exactly what we were looking for. We liked that it was tactile, and the quality of the tray. The floating toolbar is a great feature and we saw its potential and quality," says López. During the implementation, the school knew that training would be a critical factor in ensuring optimal use of the technology. "Training and support for the teaching staff was a crucial factor for us," says López. Teachers were offered training courses with SMART Certified Trainers and it helped them feel comfortable with the new technology.

The ICE (Institute of Education Sciences) of the Technical University of Valencia also organized courses from SMART Certified Trainers which were offered to all university teachers. They plan to continue to offer two training courses each year. Now that teachers are comfortable with the technology, they are focusing on creating interactive content that takes advantage of the features of SMART Notebook software to further engage students and increase understanding. López explains, "Our objective to increase the effectiveness of teaching in ways that help students learn more effectively. To help us do that, we provide teachers with resources that will help them achieve that." López explains, "Our objective to increase the effectiveness of teaching in ways that help students learn more effectively. To help us do that, we provide teachers with resources that will help them achieve that."

Pepa Marín, a professor at the school is enthusiastic about the SMART® Board interactive whiteboard. "An advantage of the interactive whiteboard is that it allows you to project different windows on the same screen and work with them simultaneously, so you are able to refer to the text document that you are using in this class while also writing in SMART Notebook software where you can add any necessary drawings, explanations or demonstrations," Marín says.

Marín appreciates the ability to save the development and solution to a problem in SMART Notebook software and then retrieve it at any time. Her students are also able to see the content in SMART Notebook software on their computers and make notes on the content. The school has had a successful history of graduating professionals who have made major contributions to projects in Spain and around the world. Their objective is to continue to improving what they offer every year. "I am sure that future Geodesics and Cartography engineers or graduates in Geometrics and Surveying Engineering in the 21st century will be even better trained because we will use the classroom technology we have to its maximum potential," says López.

Professor Ricardo López highlighting a feature of the structure of a bridge on the SMART Board® interactive whiteboard.

"The SMART Board interactive whiteboard helps us to visualise complex geometric figures and highlight their interesting aspects. It also enables us to display the solutions to mathematical problems."
Pepa Marín, Professor of Applied Mathematics.

About SMART
SMART Technologies is a leading provider of collaboration solutions that transform the way the world works and learns. We believe that collaboration and interaction should be easy. As the global leader in interactive whiteboards, we bring more than two decades of collaboration research and development to a broad range of easy-to-use, integrated solutions that free people from their desks and computer screens, so collaborating and learning with digital resources are more natural.

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