



UNIVERSITY OF
EASTERN FINLAND

Planmeca's teaching concept at the University of Eastern Finland takes dental education to a whole new level



"Dentists are trained nowadays to take on a more versatile role than the traditional one," says Professor Jari Kellokoski from the University of Eastern Finland. On the left, Mr. Esko Hokkanen from Plandent Oy.

Dental education in Eastern Finland was discontinued in 1998, which resulted in an acute need for dentists in the region. It was decided to start teaching again on the Kuopio campus of the University of Eastern Finland in the autumn of 2010.

The new teaching environment aims to provide the most modern dental training in Finland, with dentists graduating with a more versatile skill set than the traditional job description requires. "We want to educate doctors specializing in the mouth area who care for the health of the whole person through oral care," says Professor **Jari Kellokoski**, Director of the University of Eastern Finland Institute of Dentistry.

Students are taught to prioritise the kind of treatment that is most essential and urgent for the patient. "For example, if the patient is very overweight, the matter should be discussed, and it should be considered whether it would be necessary to consult a nutritional therapist, an internist, etc. Excess weight causes an ongoing inflammatory process in the body, making conditions such as gingivitis difficult to treat in such patients. Gingivitis in turn affects the entire body and is harmful in relation to many general diseases."

Similarly, students are taught to suspect sleep apnea on the basis of facial bone structure, as well as to explore causes of headaches, for example. "The idea is that a whole person is treated at the reception, not just a set of teeth, as has been the case traditionally. What we seek to do now is to ensure that people receive the treatment they need. Dentistry should be taken as a part of overall health care."

Planmeca dental units as modern teaching aids

When selecting a provider for the new learning environment, one of the many criteria was that the leg rest on the patient's chair in the dental unit could fold down 90 degrees. "The patient will be interviewed face-to-face today, and the traditional dental unit is not suitable for this purpose. The Planmeca patient chairs also function as a consultation chair. When the leg rest is down, the dentist can sit easily in front of the patient."

The importance of medical history is emphasised in modern dental education. "One should talk with the patient for some time before doing anything else. In an upright position, the neck and lymph nodes can also be examined. The first visit is often used for discussion alone, and people must get used to this change. Dentists are being taught more and more these days to take on the role of consultant."

Good ergonomics right from the start

Planmeca's idea behind the learning environment is that students learn good working ergonomics right from the start of their studies by practicing with real dental units. Neck and shoulder disorders are general occupational health problems for dental practitioners, so acquiring the right ergonomics is important even before beginning to work with patients.

"In simulation, the treatment stations are exactly the same as they are in real patient care. Attached to the dental unit is a torso with neck joints that bend with the

headrest just like a real person's neck does," explains Plandent Regional Manager **Esko Hokkanen**. The dental unit is suitable for both simulated training and for normal dental care and treatment. "The torsos can be removed and placed in their specially made storage bags."

The torso has a chest area as well, so during simulation exercises, the anatomical conditions are correct the whole time. "You have to move yourself in relation to the patient's chest," says Kellokoski. In addition, the wireless foot controls and foot-adjustable working chairs provide additional ergonomic support.

Seamless collaboration with the university hospital

Kuopio University Hospital is located next to the Institute of Dentistry: easy access is provided by a tunnel 200 meters long. Larger X-rays can be taken at the hospital, while intraoral images are taken at the institute. "The hospital's oral imaging center is equipped with all the latest available technology, and in December it got the **Planmeca ProFace**® face photo system. Similarly, ultrasound equipment is available and it is possible to carry out laboratory tests in the hospital."

During simulations, students can practice taking X-ray images of the skull. The teacher authorises taking pictures from his or her own workstation, as well as approves the images.

The students are also taught how to recognise changes in facial skin. The changes are photographed and sent directly to the hospital dermatologist for consultation.

Planmeca and its subsidiary Plandent signed a record-breaking contract in the spring of 2012 with the University of Eastern Finland in Kuopio. The contract consisted of delivering 127 Planmeca dental units and 18 intraoral X-ray systems, together with the accompanying suction, water and cleaning systems to the university's new teaching environment. This delivery agreement was the largest in Plandent's history and also the biggest contract ever signed in the dental field in Finland.



University of Eastern Finland, Kuopio campus, medical and dental school building





Third-year students Lauri Tuulainen and Saara Kivelä practice working with a torso attached to a dental unit.

Each treatment unit is the optimum size, which leads to significant rental savings.

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- Biofilm elimination system based on electrochemically activated water
- Environmentally friendly
- Safe for the patient, the dental team and maintenance personnel
- Replaces chemicals
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- Does not require daily or weekly disinfection
- The result of collaboration and research by Planmeca, Trustwater and Trinity College in Dublin

New generation of teaching methods

The simulation room has 40 student places and 2 teacher workstations. The teacher controls all the student workstations from his or her own station, and the teaching can be organised with fewer staff, thanks to this modern technology.

The simulation area is separated from the rest of the department by a glass wall. "Those who are still training with torsos can continuously see the older students who are already working with real patients. This is very motivating for them in every way. When you move to the other side of the glass wall, you will find exactly the same layout and dental unit. There is no need to learn everything from scratch," says Kellokoski. "Yes, the students have a completely different start to their studies here because of the cutting-edge technology," he continues.

Each unit is also the most optimal size. "It would not be possible to fit into a space with a smaller floor area. However, there is enough room to manoeuvre. For example, positioning the dental unit for right- or left-handed use just takes a couple of minutes. There is also enough space to carry out maintenance procedures well. When you consider how much one square meter costs in rent over 10 years, you are already talking about quite a large sum of money."

Green technology

One of the most important competitive advantages of Planmeca's learning environment is the use of green technology. The University of Eastern Finland is the first university in Finland that has installed a centralised automated waterline cleaning system, **Trustwater**. "The system reduces labor and maintenance costs, as well as chemical purchases. This is an extremely wise investment that will pay for itself in about six years," Kellokoski says.



In Trustwater's environmentally friendly and chemical replacement system, water is separated and purified in a centralised manner. In this way, water directed to the dental units and sinks is completely purified, so that soap dispensers are no longer required at the treatment stations. "You can wash your hands in the changing room in the morning with soap and use rinses and gloves in the workspace," says Hokkanen.

Continuous cooperation

In choosing a provider for the learning environment, it was important to select a company that would also commit to continuous development and cooperation with the university after delivery. "It is not enough that the unit is modern just for now – it must also be so a year from now," Kellokoski points out. "This in turn requires continuous co-operation and development. The learning environment is also a good place to test new innovations. This serves both the manufacturer and us as a university."

The leg rest on Planmeca's dental unit chairs folds down 90 degrees so that it also serves as a consultation chair. In modern dental care, detailed discussions are held face-to-face with patients before treatment.



The Finnish Minister of Education, Jukka Gustavsson, met third-year students, who were working with a Planmeca Compact i dental unit with simulation torso.

IMAGES TUOMAS LOKKI



Grand Opening in Kuopio

Planmeca and its subsidiary Plandent were proud to congratulate one of the most modern teaching clinics in the world, University of Eastern Finland Institute of Dentistry. The opening ceremony gathered hundreds of guests to Kuopio on 22 January 2013.



Plandent Regional Manager Esko Hokkanen (on the left) and President Heikki Kyöstiä presented Planmeca's greetings in Kuopio.



Professor Jari Kellokoski, Director of the University of Eastern Finland Institute of Dentistry gave the opening speech.