“There certainly is a learning curve to technology”

An interview with dental technician Lee Culp, CEO of Sculpture Studios

Having been at the forefront of the digital evolution in dentistry for 20 years now, Lee Culp can be considered a true digital pioneer. At this year’s International Expert Symposium hosted by Ivoclar Vivadent in Madrid in Spain, he lectured on the impact of digital restorative dentistry for improving communication and teamwork in daily practice. Dental Tribune had the opportunity to speak with him about his fully digitally operated dental laboratory, Sculpture Studios, and when he realised that the future of dentistry is digital.

Dental Tribune: Although dentistry is evolving towards the digital world, the dental community still seems divided when it comes to acknowledging the relevance of digital dentistry.

Lee Culp: Yes, we have those who embrace digital technology and there is the group that is still concerned about, confused about or fearful of digital technology, but there is also the group in the middle, which is the largest one. They have bought the equipment, but not made the change yet. For example, they have a scanner, but they do not really do anything with it. One could say that they have not fully committed yet to using the technology to its fullest.

As software and fabrication processes continue to evolve, practitioners need advanced training. Do you think there are enough educational opportunities available today and are they adequate?

The certainly is a learning curve to technology, and from my point of view, the digital companies do not necessarily do the greatest job of training. They are good at basic training upon sale, but there is just not a great deal of advanced training out there. We run a digital academy back in the US and we offer a large number of courses. However, there need to be more in each country, because more people want to know how to accomplish advanced things, such as smile design, implant placement, surgeries—all of those things. There is a great need for education but not enough education providers.

What is the focus of your company?

For one, it is a dental laboratory where we create dental restorations, but we also conduct a great deal of research, both on materials and on technology for many different companies. For example, I have served on a number of development teams for several of the major Ivoclar Vivadent products. In our laboratory, we assisted in the development of the product Empress Esthetic, as well as the Ivoclar Denture teeth. We are hired as consultants to work on projects from companies, and we provide education to dentists and laboratory technicians—all digitally based.

You are a certified dental technician and probably trained only the analogue way. Was there a moment when you knew there was no stopping the digital development in dentistry?

I know exactly when that was. CEREC (Sirona) hired me as a consultant to help create a laboratory system. When I started with CEREC, it could not produce a 3-D representation of a tooth. It produced many lines on the screen and one had to interpret those lines to make out a tooth.

It was incredibly difficult. So, the aha moment was when the engineers and marketing people came over from Germany and they hooked up the computer to a projector and a screen and I saw a tooth moving. I knew right away: this is it!

With all the digital possibilities available, will traditional expertise and technical skills become somewhat obsolete?

Whatever design is produced on the computer and by machine, the final 25 per cent has to be done by hand. One still has to mould, carve, glaze, colour—whatever we do. We do not lose this; we just get to the artistic part faster and more efficiently now, but one still has to be a very well-trained technician or dentist. A bad technician is not going to be a good digital technician. Similarly, as a dentist, if one cannot take an impression with vinyl, one is probably not going to be able to take an impression with digital technology either.

In your lecture, you spoke about how digital technology can improve communication. Could you please explain that aspect?

It is mainly about the amazing visual possibilities. With the new technology, I have the case digitised in the computer. I can move it around, invite the dentist to view the screen and discuss everything while I change something on the computer. The dentist understands my challenges and sees the situation from my perspective, and I do not have to verbalise it over the phone.

This facilitates long-distance communication too, for example, if specialists or patients live in remote areas.

Yes, we have had cases from all over North America, Great Britain, Denmark and Australia, to name a few, and apart from the time difference, the digital technology enables one to work closely together on cases wherever one is in the world. It also makes the workflow much easier because everybody involved is on the same page.

From your perspective, what are the next developments to expect in the digital field?

If one imagines diagnosis and treatment planning to be on the far left of a scale and the process of making the restoration on the right, digital technology is already very advanced on the manufacture side. However, it has not progressed as much in terms of the planning process, except for implants maybe—but implant planning does not consider the overall picture, the entire mouth. It is just planning software to put something somewhere surgically.

Right now, we have software for the last 50 per cent, now we need software for the first 50 per cent. Companies like 3Shape are starting to respond, as they are starting to realise the importance of the diagnosis and treatment planning process.

Another development is predictive software. I believe that every child, once the permanent dentition starts to erupt, should be given a full-mouth scan every six months. With each scan, we would know what to be aware of in terms of tooth movement, tooth wear, bone and tissue changes. In dentistry today, we mostly do not act before there is an obvious problem. Therefore, we need to have predictive software to change that, namely processes and technologies that can sound the alarm before something is seriously wrong.

Thank you very much for the interview.