

Digital schooling: TRUMPF relies on virtual learning

From digital whiteboards and VR headsets to teacher avatars, digitalization continues to make inroads into the worlds of adult education and vocational training. This is especially true at TRUMPF's Training Center in Ditzingen, where Francesco De Marco is planning virtual learning formats that will soon allow trainers to summon up customers' machines at the touch of a button.

It's a busy day at the Ditzingen Training Center. Twenty machines are dotted around the large hall, which is flooded with fall sunshine. Each machine is surrounded by a small group of training participants who are taking notes, asking the TRUMPF experts questions and trying out the touchscreens on the machines. "This is a fairly typical day for us," says Francesco De Marco, the Training Center's e-learning manager, as he strolls through the hall. "Traditional face-to-face teaching still has an important role to play in education despite online learning tools, and I don't see that changing in the future."



Francesco De Marco, head of digital learning at TRUMPF's training center is planning virtual learning formats that will soon allow trainers to summon up customers' machines at the touch of a button.
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Future of learning

Together with his staff and colleagues, De Marco develops digital learning formats. He leads us into a dimly lit classroom, where staff member Christopher Poppel is carrying out repair and maintenance work on a machine using a virtual reality headset and two hand controllers. The TruPrint 3000 3D printer he is currently working on is projected on the screen in front of us.

"VR will play a major role in how people learn in the future," says De Marco, pointing to his colleague. Poppel has just activated a print job on the virtual machine by clicking a button on one of his hand controllers. "The virtual world will enhance face-to-face training rather than replacing it," says De Marco. "One reason is that VR doesn't have haptic feedback. To use a torque wrench properly, for example, mechanics need to feel the weight of the tool in their hand and hear it engage. You can't get that in a VR application. But what VR can do is give an impression of how the machine works and let people try things out without the risk of breaking anything!"



Virtual reality is only the beginning: Francesco De Marco heads up the digital learning group. He and his team plan to continue incorporating modern teaching methods in the Ditzingen Training Center and making them available on a global basis.
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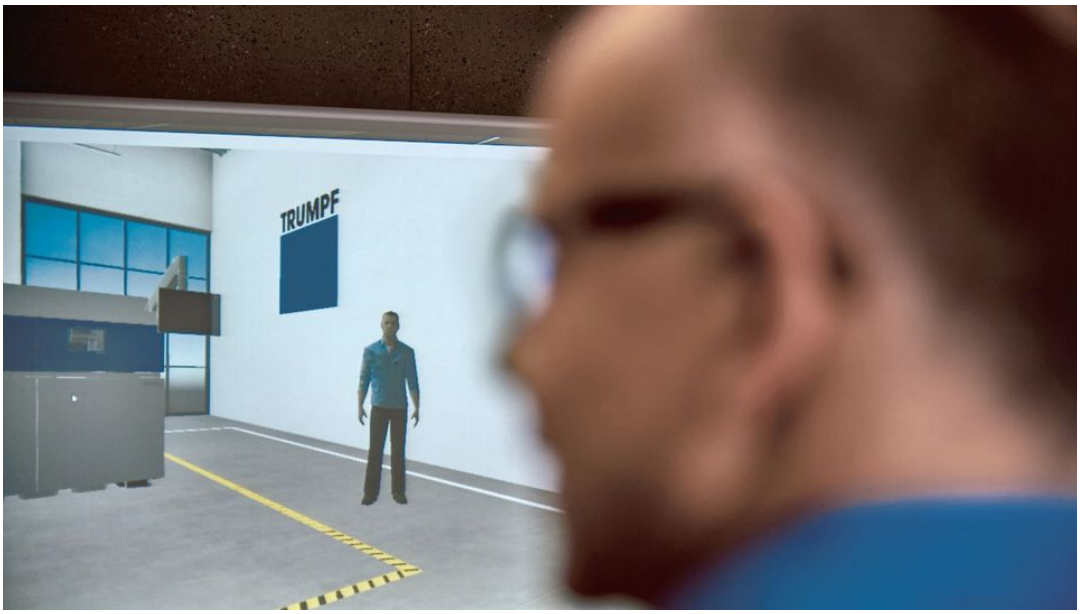
Digital natives have a head start

The VR application forms part of the VASE project, which stands for virtual and analytic services in mechanical and plant engineering. VASE is a research and development project funded by the German Federal Ministry of Education and Research – and the Ditzingen Training Center is one of the organizations taking part. With an annual total of almost 50,000 face-to-face participant training days, some 2,500 e-learning participant training days and around 500 different types of courses, the Ditzingen Training Center is the largest of TRUMPF's eight training centers worldwide. Headed up by Stephan Bundschu, it is a pioneer in setting global standards. TRUMPF started incorporating digital learning methods in its training programs as long ago as 2014. Part of the impetus was to give customers and employees the flexibility to choose when they want to train and to partici-pate from wherever they are using a computer, tablet or smartphone.



Christopher Poppel, a member of Francesco De Marco's team, is carrying out repair and maintenance work on a machine using a virtual reality headset and two hand controllers. © Frederik Dulay-Winkler

The center now uses a total of four well-established e-learning methods. The first, web-based training, offers users the opportunity to participate in online courses at a time of their choosing. The second is a virtual classroom, which participants can attend from anywhere, but at a scheduled time when both the teacher and students are online. The teacher typically makes use of a digital whiteboard, and participants can communicate with each other via audio conferencing as well as text chats. A third way of learning how to use TRUMPF machines is through video tutorials. Available around the clock, these focus on a defined set of operating steps and help learners find answers to specific questions. The fourth option is instructional videos. These take things to the next level by guiding the viewer step-by-step through more complex situations. All the learning modules are available in both German and English, and TRUMPF can also provide them in other languages on request. "We try to design our learning materials in a way that is accessible to everyone," says De Marco. "There's a big variation in the average age of our training participants. Digital natives certainly have a head start, but our training materials also go down very well with my generation."



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The right machine appears at the touch of a button

De Marco's enthusiasm to try out new things is what motivates him to come up with new learning formats. "I love being the first one to try out new technologies," says the mechanical engineering expert, who has worked at TRUMPF since 1989. "My first experi-ence with VR was trying out various different VR headsets at home with my son and his friends. Nowadays, I'm pretty good at spotting things that need to be improved in our training – for example if I can't find my way around a VR environment or if the voice-over doesn't match the learning content."

Virtual Reality will play a major role in how people learn in the future.

Francesco De Marco, E-Learning Manager

Yet virtual reality is only one of the tools the Ditzingen Training Center is taking on board for the future. De Marco and his team are currently experimenting with a number of other approaches. One example is micro learning, a strategy that breaks down learning into bite-sized portions. Participants can choose exactly which elements they wish to learn without having to plough through an entire module. The idea is to use video tutorials and instructional videos that get straight to the point and encourage viewers to reflect on what they have learned.

De Marco also dreams of one day creating an entirely digital training center in which all the different learning formats will be accessible online. He believes in keeping an open mind and learning new things because, as we all know, learning never stops - and nor does the search for new learning methods.



The Training Center in Ditzingen is the biggest of TRUMPF's worldwide educational facilities. The seminars it offers include train-the-trainer courses for teaching professionals from other training centers.

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