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Vaud elementary school teachers get training on digital education

Around 15 elementary-school teachers who received digital-education training from EPFL's LEARN Center began training their peers this past spring. Through this initiative, the Canton of Vaud aims to begin equipping its schoolchildren with digital skills from their very first years.

In the science classroom at Cheminet elementary school in Penthalaz, small groups of elementary-school teachers are using their iPads to record songs, create GIFs, generate QR codes, take pictures and capture videos on their screens. They may appear to be a distracted bunch, but they're actually highly focused on the task at hand. They're just one of the many groups of teachers across Vaud who took part this spring in the first afternoon of a six-day training program on digital learning tools, as part of an initiative to incorporate digital technology into the education received by Vaud schoolchildren.

The initiative was launched by the Vaud Department of Education, Youth and Culture (DFJC) with the goal of training all elementary and junior-high teachers in the canton by 2023. These teachers will then be able to better incorporate digital subjects into their own curricula. The program is being carried out in association with HEP Vaud, UNIL and EPFL's LEARN Center.

The initiative began in 2018-2019 when the LEARN Center trained around 350 elementary-school teachers from ten pilot schools on computer science and computational thinking. Then in 2020, the Center recruited around 15 of these teachers to participate in a train-the-trainer program to pass the digital-education methods they learned along to other Vaud schoolteachers.

"We selected a diverse group of participants with complementary backgrounds," say Frédérique Chessel-Lazzarotto and Grégory Liégeois, the LEARN Center project managers in charge of continuing-education programs for teachers. "We met with the group once a week for six months, adjusting the training program based on teachers' feedback in order to better meet their needs. The priority is to use hands-on learning methods whenever possible. We will hold meetings again regularly in this new school year."

High uptake

The selected group of participants began training other teachers this past spring. The first step was to make sure all the teachers knew how to use a tablet, activate its different features and create online "multimedia book" with text, pictures, video and sound. At the training session at Penthalaz-Venoge elementary school, teachers who took part have various backgrounds, and only a handful had already used the technology in their classrooms. "We're still in the very early days of our program, but the teachers are very interested and enthusiastic and want to get involved," says Chantal Vial, a schoolteacher at Chernex elementary school, who is one of the trainers selected by the LEARN Center.

Chantal Vial (on the right) with a teacher at Cheminet elementary school in Penthalaz. © Alain Herzog 2021 EPFL

According to a survey of the 350 teachers who completed the LEARN Center training in 2018-2019, many of them went on to adopt the digital-education methods they learned. In April 2019, 97% of the teachers said they had run at least one of the digital activities with their students, and the rate was still 80% nearly a year later, in March 2020. Unplugged learning activities were the most popular.

Encouraging curiosity about digital technology

The initiative focuses on three aspects of digital education in particular: digital citizenship, computer science and information and communication technology. "We want children to learn to think critically about digital technology. That is, we want to encourage them to be curious about it and to try to understand how it works," say Chessel-Lazzarotto and Liégeois who worked as teachers before joining the LEARN Center. "The idea is to show them that the power is in the hands of humans, that it's just a matter of choice."

In the program, teachers are trained to use unplugged activities – such as Jeu de la Grue (the "Crane Game"), where children have to move a cube virtually by going through various choices, and Pixel-Paravent (the "Pixel Screen"), where children learn the basics of the binary system – to introduce students to digital concepts. The students will then move on to activities on tablets, computers and the Thymio and Blue-Bot educational robots. "The goal is to encourage children to use devices in other ways and stimulate their creativity," says Chessel-Lazzarotto. From the age of five, the students will be asked to perform more advanced tasks like creating a stop-motion animated video. "That shows them they can play around with images, that there's no magic behind them," says Liégeois.

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The LEARN Center also helped create the Oscar & Zoé series of children's books on the topic of digital citizenship. "The Oscar & Zoé book called Bestioles de l'ombre ("Creepy Critters in the Dark"), by Allison Ochs, addresses the issue of the fear that some digital content, such as scary images, could arouse in young children," says Chessel-Lazzarotto. "One activity in our digital education program, inspired by that book, is to have students go on a 'photo safari' with their iPads, taking pictures of creepy critters they find and then modifying the images. That also opens the door to more philosophical conversations with children on topics like their emotions, the different opinions people can have and the importance of consent."

Training all Vaud teachers in two years

The LEARN Center already took the first step towards the goal of training all Vaud teachers by 2023 through a program it ran back in 2019 for junior-high teachers at ten pilot schools. The program will be extended to all Vaud junior-high schools in the fall of 2022. It will be modeled after the one for elementary-school teachers. The Canton of Vaud has also funded the purchase of teaching materials, with the target of equipping all classrooms with Thymio robots (for schoolchildren aged 6 and up), Blue-Bot robot (for schoolchildren aged 4-8) and a set of five iPads (for schoolchildren aged 6-8).

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Also as part of the initiative, the Canton of Vaud, along with EPFL, HEP Vaud, UNIL and outside experts, has developed a handbook for teachers called Décodage ("Decoding"). "The handbook describes both plugged and unplugged activities that teachers can run, as well as various scenarios they can use to introduce the concepts of digital citizenship to schoolchildren and instill a digital culture from the age of four," says Chessel-Lazzarotto. Experience has shown that materials like this, as well as the support, equipment and time to learn and implement activities are key to the long-term success of this kind of initiative.