Metaverse Lab-XR: Virtual Lab Builds Diagnostic and Teamwork Skills for Medical Technology Students

BANGKOK, THAILAND, September 28, 2026 /EINPresswire.com/ -- A Chula Medical Technology lecturer has developed Metaverse Lab-XR, an innovative virtual laboratory that allows students to practice lab procedures and develop the soft skills needed for real-world work in hospitals, preparing them to become skilled and knowledgeable medical technologists.



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For Medical Technology students, laboratory skills are just as important as academic learning. However, developing these skills into expertise requires extensive hands-on practice—a challenge for third- and fourth-year students in Clinical Microbiology at the Faculty of Allied Health Sciences, Chulalongkorn University.

Asst. Prof. Dr. Navaporn Worasilchai, a lecturer in the Department of Transfusion Medicine, Faculty of Allied Health Sciences, Chulalongkorn University developed Metaverse Lab-XR to offer students more opportunities to practice before entering the simulated laboratory.

“We want to make sure that all students reach the same level before moving on to the next lesson,” she said.

In use since early 2024, Metaverse Lab-XR recreates a hospital laboratory where students can independently practice procedures and diagnostic skills as often as needed. The first training module focuses on diagnosing fungal infections. Students work through realistic scenarios, from checking patient and specimen information to selecting appropriate tests and responding when laboratory findings do not match a patient’s symptoms or medical history.

The virtual environment also prepares students to work more safely with actual patient specimens and microorganisms during subsequent hands-on training, helping reduce infection

risks while making better use of laboratory resources.

Beyond technical skills, the program develops communication, teamwork, laboratory management, critical thinking, and prioritization. Students learn to communicate with doctors and nurses, identify urgent cases, and investigate unexpected test results.

According to Asst. Prof. Dr. Navaporn, research and observation showed that Metaverse Lab-XR improved students' learning outcomes by approximately 20%. Students also reported feeling psychologically safer practicing privately in the virtual environment, where they can repeat exercises without feeling embarrassed about making mistakes.

Metaverse Lab-XR received the Excellent Innovation Award for Outstanding Innovation in Student Development from the Ministry of Higher Education, Science, Research and Innovation (MHESI) in September 2025.

Asst. Prof. Dr. Navaporn hopes the project will eventually expand to other universities and medical technology laboratories in Thailand and abroad, with additional scenarios covering bacterial, respiratory, and viral infections.

Read the full article at https://www.chula.ac.th/en/highlight/422901/

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