

New app offers customized advice to improve learning

May 24 2018



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University of Colorado researchers have created on-demand, voice-activated apps to enhance learning and teaching for members of CU Anschutz Medical Campus and CU Denver.

VoxScholar (VoxScholar.com) has released its first two apps, CU Study Skills and CU Faculty Development. These apps make it possible for faculty and students to talk to Google Assistant to receive study tips or to get information on faculty development topics.

VoxScholar is an initiative funded by the CU Department of Medicine and was developed by faculty from the CU Anschutz School of Medicine and the CU Denver College of Engineering and Applied Science.

While multiple voice-activated platforms exist, using the Google Assistant platform allows for the creation of higher education apps without extensive and costly infrastructure investment. Students and faculty using the apps can use devices they already own, including cell phones. This approach to academic innovation helps keep higher education affordable, responsive and relevant.

"One goal of the project was to leverage technology everyone had in their pocket—a cell phone—to transform [learning](#)," said Janet Corral, Ph.D., associate professor of medicine, who leads the project. "Our busy learners and faculty are working in multiple sites: campuses and clinics, homes and offices, in the city and in rural communities. Often, they need just-in-time access to information and cannot wait until the next time they are on campus for face-to-face sessions."

The VoxScholar apps provide more than other voice-activated apps, which typically offer information on campus meals or laundry services. VoxScholar's apps focus on academic performance by offering improved study skills or evidence-based teaching advice. For example, students can get timely, practical tips on how to handle multiple choice questions or manage time during an exam. Faculty can get advice on leading small group sessions or improving learner engagement.

Corral is a scholar in the Department of Medicine's Program for Academic Clinician Educators (PACE), which launched in 2017 and provides grants to support faculty in developing and improving innovative educational programs, and in engaging in educational research to guide how we teach and assess health professions learners.

Suzanne Brandenburg, MD, vice chair for education in the Department of Medicine, said, "Dr. Corral's innovative work has the potential to transform medical education. I'm delighted that our unique PACE program has provided her the resources, time and mentorship needed to achieve this milestone."

Corral collaborated with the CU Denver Department of Computer Science and Engineering at the College of Engineering and Applied Science to develop VoxScholar. Assistant Professor Farnoush Banaei-Kashani, Ph.D., an expert in intelligent and large-scale data-driven systems, along with his Ph.D. student, Javier Pastorino, worked with Corral to develop these apps.

"We have introduced novel ideas based on machine learning and text mining to make the apps smart," said Banaei-Kashani. "For instance, the apps can capture and use the context of the conversation with the learner or faculty member and personalize the tips it provides accordingly."

The VoxScholar apps innovate by relying on artificial intelligence. The apps are designed to send specific tips based on the specific student's needs. Similarly, educators offering lecture-based programming in a classroom setting receive different tips than faculty teaching in a hospital or other clinical setting.

"The spaces where we work and study are complex, and I wanted the apps to do better than our existing fact-based learning modules and tips sheets. My goal was to create apps that respond just-in-time to what

people need, and, furthermore, help coach them to success," said Corral. Both apps have been developed in consultation with academic leaders, faculty and students. Students and faculty have also beta tested the apps prior to release.

The apps are available for free through the Google Play store, but require an official affiliation with CU Anschutz Medical Campus or CU Denver to access the content. VoxScholar plans to release additional apps throughout the spring and summer as students return to the health professions programs on both campuses.

Provided by CU Anschutz Medical Campus

Citation: New app offers customized advice to improve learning (2018, May 24) retrieved 7 August 2024 from <https://phys.org/news/2018-05-app-customized-advice.html>

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