

## Editorial Backgrounder

### Keysight Education Solutions

#### Introduction

Educational challenges brought on by the COVID-19 pandemic have significantly changed the way university professors teach and students learn. These challenges have opened the door to remote, hybrid and eLearning solutions, which have touched all corners of the academic experience, including engineering teaching labs.

[Market research firm Global Market Insights](#) predicts that the eLearning market, at 250 billion USD as of 2020, will reach 1 trillion USD over the next six years. The market includes academic, corporate and government use of eLearning solutions.

While eLearning brings great potential, academia's shift from traditional in-person teaching models to hybrid and virtual educational experiences invites new challenges for engineering educators. In this new environment, it has been challenging for professors to ensure students are industry-ready at graduation. This is just the beginning: 72 percent of survey respondents believe hybrid learning will continue for at least the next five years, according to a survey conducted by [the World Economic Forum](#).

Keysight Technologies provides educational tools for educators around the world to modernize the teaching lab experience and reshape the way future engineers solve problems. Keysight's education solutions equip both budding engineers and professionals with the latest tools and software to accelerate innovation in the lab and remotely.

At Keysight, we understand there's no substitute for in-person, hands-on lab experiences, but today's world demands a more agile learning environment. We supplement our industry-grade instruments with remote access capabilities, enabling educators and students the ability to access lab equipment remotely and in-person.

#### Keysight Tools in the Classroom

Keysight's key educational offerings include the following:

- The Smart Bench Essentials Series
- Remote Access Lab
- Keysight University

The [Smart Bench Essentials Series](#) consists of an oscilloscope, digital multimeter, power supply and function generator; all connected with Keysight's [PathWave BenchVue](#) software. Students and professors can access lab equipment from anywhere, anytime. Its sleek, compact design has been popular among professors, as it minimizes lab space and is aesthetically appealing. This series provides industry-grade equipment at a price point to meet university budgets.

Key features:

- EDU33212A waveform function generator
- EDU36311A triple-output DC power supply
- EDU34450A digital multimeter
- EDUX1052G InfiniiVision oscilloscope
- PathWave BenchVue software

Key benefits:

- Configure, control and monitor multiple bench instruments from a single screen.
- Automate workflows from test setup to report generation.
- Access lab instruments remotely with your peers to test, analyze and share.
- Manage an entire lab through a single screen interface.

Find out more about Smart Bench Essentials [here](#).

### Remote Access Lab

Keysight's Remote Access Lab provides a convenient way to switch to online lab access. This end-to-end solution offers a complete remote setup of a basic instrument lab. It covers web-based lab management, scheduling administration and instrument control, as well as *remote* access for measurement and analysis. Students can continue working with industry-grade test and measurement instruments and software, gaining practical skills and application knowledge similar to industry engineers working in the lab today.

A cornerstone of the Remote Access Lab solution is the [PathWave BenchVue Lab Management and Control solution](#), a centralized and integrated approach for bench management, instrument configuration and troubleshooting. With this solution, lab admins can centrally configure, preset, control, monitor and manage instruments. Students can perform measurement analysis either onsite or remotely.

### PathWave Lab Operations for Remote Learning

Keysight's [PathWave Lab Operations for Remote Learning](#) is cloud-based application software. It provides multiuser access so educators and students can transition their hands-on lab to a remote environment and access the lab through a web browser at any time, from anywhere, in a secure environment. It provides centralized control for educators to seamlessly connect, manage, monitor and troubleshoot instruments in the lab.

Key features:

- PW9112EDU cloud-based PathWave Lab Operations for Remote Learning software
- PW9111EDU PathWave BenchVue Lab Management and Control software
- U3900DAQ switching system

Key benefits:

- Easily and seamlessly migrate engineering labs online with the elements needed to transform traditional classroom teaching and hands-on labs to a remote environment.
- Centralized user access and teaching content management system with learning management system integration, enabling educators and students to navigate seamlessly to university resources.
- Connect to industry-grade test and measurement instruments.
- Interact with students and facilitate group collaboration in real time to accomplish smart teaching and learning.

Learn more about Remote Access Lab [here](#).

### Keysight University

The Keysight University platform provides knowledge of smart bench essentials, precision digital and radio-frequency measurement approaches, the latest industry standards, compliance, power and more. Students will learn basic to advanced techniques, tips and tricks that lead to more accurate measurements and insightful signal interpretation. This is a community where engineers, educators and students can learn, grow and work together to innovate engineering.

Keysight University is an eLearning platform created for engineers by engineers - [explore courses today](#).