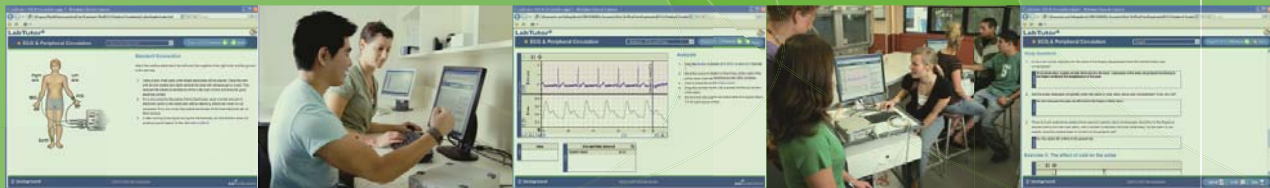


LabTutor Case Study



Client: San Diego Mesa College, USA

Situation: San Diego Mesa College required a complete teaching system that is easy-to-use and can be readily customized to suit customized course materials.

Solution: PowerLab LabTutor Teaching Systems with LabAuthor

PowerLab LabTutor Teaching Systems can be Customized to Suit Course Materials

Educators at the Department of Biology at San Diego Mesa College have recently chosen to utilize LabTutor software and experiments in their physiology labs after acquiring LabAuthor. “I didn’t use LabTutor at first since I couldn’t customize the programs, however I just started using it this semester after acquiring LabAuthor... I can customize Chart files for my specific lab exercises,” said Professor William Brothers.

The Department of Biology has an annual intake of 600 students for the Human Physiology course and 300 students for the Human Anatomy and Physiology course. PowerLab Teaching Systems replaced old Physiograph pen recorders. This allowed students to easily collect and analyze data using LabTutor based experiments such as Finger Pulse, ECG, Frog Heart, Vascular Labs and Pulmonary Functions.

Students reported an enhanced learning experience using the PowerLab LabTutor Teaching Systems, with fewer set-up problems noticed in practical classes. Hands-on experience allowed students to gain a better understanding of scientific principles presented in lecture. LabTutor software provided for students the complete instructions, data recording ability, analysis tasks and experimental reports that can be electronically submitted for marking.

Professor William Brothers used LabAuthor extensively to create new experiments and modify existing LabTutor experiments. “The basic concepts were easy, since I was self taught, but I did need some expert assistance from your staff” said Professor William Brothers of his initial experience using LabAuthor. In future he plans to delve further into LabAuthor and use it to develop more LabTutor experiments.

Background information

Courses: Human Physiology and Human Anatomy and Physiology course.

Educators: Professor William Brothers.

Students using PowerLab LabTutor systems: 600 students in Human Physiology and 300 students in Human Anatomy and Physiology.

Experiments performed: Introduction to LabTutor using the Finger Pulse, ECG, Frog Heart, Vascular Labs, Pulmonary Functions.

Interview with Prof. W. Brothers

Please describe your role(s) at your institution. How long have you been in this role?

Professor of Biology, 30 years.

What courses use LabTutor and how many students are in the course(s)?

Human Physiology 600 students/year; Human Anatomy and Physiology (1 semester class) 300/year

How many PowerLabs do you have and what other ADInstruments equipment do you have?

6 teaching labs plus 6 very old PowerLabs for Anatomy and Physiology

When you were looking for data acquisition systems which ones did you evaluate?

Biopac and ADInstruments

What were the key factors that made you choose ADInstruments products?

Ease in using the equipment, macro feature in Chart, and changing the screen display.

Can you describe the implementation of the PowerLab data acquisition system in the lab? (Laboratory setup, number of staff running labs, how the labs are run.)

We use six systems in our 10 sections/semester. One technician sets up the equipment, but all the instructors use the Chart or LabTutor.

How long have you and/or the university been using ADInstruments data acquisition systems?

Since 1998.

What difference has PowerLab made for you, your students, and the courses you run?

I can customize Chart files (LabTutor) for my specific lab exercises. Students can collect and analyze the data directly from the recording, from tables and/or graphs.

What type of experiments are your students conducting with LabTutor systems?

Introduction using the finger pulse, ECG, Frog heart, Vascular labs, Pulmonary functions. I will be adding EMG and reflex time.

Can you describe how the course was run before the use of LabTutor systems?

We used Physiograph pen recorders.

What particular features of LabTutor software have made a big difference?

I didn't use LabTutor at first since I couldn't customize the programs, however I just started using it this semester after acquiring LabAuthor. The students have a complete lab, with instructions, data recording and reports done with the computer.

How have LabTutor and PowerLab systems saved you time?

It hasn't saved me time because of the learning curve. However in class it has since the labs are self contained.

Can you comment on the students' experience with LabTutor systems?

There seems to be less problems, since the settings are preset. The only problem I have notices is with students wanting to run the exercise without reading the dialogue next to the recording screen.

How does LabTutor help students with understanding scientific principles or learning goals?

Scientific principles are presented in lecture, but it's great to have a hands on experience using those principles. Any data acquisition system would help learning and applying the principles.

What are your future plans for LabTutor? Do you intend to increase the number of systems that you use, the way you use them etc?

Yes, I plan on cleaning up the labs I have authored and plan on developing a few more labs.

LabAuthor: Have you modified existing experiments with LabAuthor? Have you created a new experiment?

Yes to both questions.

Please comment on the use of LabAuthor: Was it easy to use? Had you used another HTML editor? How does LabAuthor compare?

The basic concepts were easy, since I was self taught, but I did need some expert assistance from your staff. I haven't used a HTML editor at all. I would love to delve further into LabAuthor.

Support: Do have any comments you would like to make about the service from ADInstruments

I have had positive and quick responses when contacting the service department of ADInstruments. They are always helpful when problems arise with my authored labs.

Final question. Would you recommend LabTutor to other educators?

Yes

Biography

William Brothers has been the Professor of Biology at San Diego Mesa College for over 30 years. He has been using ADInstruments products since 1998.