Virtual Learning Environments

Virtual Learning Environments (VLEs) are increasingly used by educators because of their proven ability to aid retention, strengthen social interaction, and trigger creative thinking.

CNDG is a highly respected and experienced designer and provider of online, networked VLEs. Our VLEs use a fraction of the resources of traditional classroom methods of teaching, but do not negatively impact on learning objectives or results.

They allow students and educators to explore places together that they would never be able to visit in the real world, such as a geological station in the Antarctic, the surface of Mars, Easter Island 20,000 years ago, or the interior of a human cell.

And they are networked: we do not create stand-alone single-player gamifications of educational materials, which are isolating for the students, but persistent interactive virtual worlds that are experienced and interacted with in groups.

“For students who struggle with learning from books, virtual reality could be the ultimate “field trip,” opening up more engaging learning experiences that were too expensive, or even impossible, to access before. It’s no longer about telling them, it’s about showing them.”

Nick Mokey
Digital Trends

See inside for details of some of our current courses. You can find out more about CNDG and how our VLEs work on the back cover.
CHEMISTRY

Client: Florida State University

Aim: increase enrolment.

Result: enrolment increased from 86 students (Fall 2016) to 299 students (Fall 2017). There is anecdotal evidence that the students’ understanding and retention of material has also increased.

Working with Dr Stephanie Dillon, Director of Freshman Chemistry Laboratories, CNDG designed a series of lectures, labs and assignments (including reading and examination materials), all presented through the VLE “Liberal Studies Chemistry: A Forensic Academy” Program. Students purchase an access code for the course directly from Pearson Education, or through the University bookstore.

The course asks students to take on the role of a junior forensic scientist in order to solve a case based on a real Tallahassee murder.

Lectures are brought to life in the lab assignments, in which students collect evidence samples from a crime scene, analyse them in a virtual lab, and draft a coroner’s report based on their findings.

Students apply what they have learned using equipment and techniques which would not available to them in real life, in a context that is both exciting and engaging.

BIOLOGY

Client: University of Central Florida

Aim: relieve the resource burden of running a very large introductory undergraduate course in biology.

Result: As of 2016-17, approximately 4,500 students are enrolled annually on this course, using a fraction of the resources of the traditional classroom-based course, but without any negative impact on the students’ grades, or their acquisition of the information or the learning objectives.

Working with Michele Yeargain, the Laboratory Course Coordinator in the University of Central Florida’s Biology Department, we designed a series of ten VLEs which allow students to familiarize themselves with the analytical machines and safety equipment they use in real laboratories, practise core lab skills, and test their theoretical knowledge.

The modules include simulations of real life experiments, explorations of habitats, and imaginative conceptualisations. They are delivered both as supervised class sessions and as self-directed exercises that can be accessed at any time.

For more information about our courses and a breakdown of modules, visit: www.cndg.info
**ENV-SCIENCE**

**Client:** Florida State University  

**Aim:** enhance student experience without significantly increasing the resource burden on both the students and department.

**Result:** student satisfaction improved; enrolment increased by 50% in Fall 2017 compared to the previous year.

Working with Dr William Landing, we devised and built a laboratory series consisting of eight modules taught within four VLEs.

Students travel back in time to Easter Island with the mission of discovering what caused the collapse of the Rapa Nui culture. They monitor invasive species by SCUBA diving on the Great Barrier Reef and analyze the Earth’s climate change by drilling ice cores in the Antarctic.

The last environment is closer to home: a suburban housing development in which students learn about the design, construction and maintenance of sustainable buildings. Dr Landing and his students are delighted with the project. Using VLEs, he presents the course material in a far more engaging way, without forfeiting the educational standards required of a core science class.

The course is currently offered year-round and has attracted approximately 750 new students annually.

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**ECONOMICS**

**Client:** Florida State University  

**Aim:** Increase student involvement in practical experiments

**Outcome:** All students actively engage with course material. Their progress is monitored in detail.

Each year, 2,000 students enroll in Dr Joe Calhoun’s micro and macroeconomics classes. The time and space for physical experiments is limited.

Dr Calhoun wanted to enable all his students to participate in practical experiments without making the classes longer and more chaotic. Together with our design team, Dr Calhoun devised a series of economic “experiments” that would take place in a virtual world.

Students work through the modules outside of class as homework assignments, and their progress is monitored throughout the course via checkmarks on HUDs that translate into a grade at the end of the semester.

We are now working with him to expand the options for assessment, to streamline the enrollment process, and to modify and expand the virtual environments based on student feedback.

As Dr Calhoun’s ideas and creative processes develop, our VLEs do too.
How do our VLEs work?

Students create an avatar, and log on to our virtual campus. Onscreen instructions direct them to their activities, and guide them through their assignments.

Depending upon the structure of the course, they can either work in their own time, or participate in “lab sessions” where they interact with other students, professors and TAs.

Teaching and learning activities, assignments, and synchronous or asynchronous exercises are available 24 hours a day, 365 days a year. There is always someone on hand to help with technical queries.

We are able to integrate both existing and new learning materials into our VLEs, enabling you to create your own customised course.

These materials can include textbooks and supplements, data sets, videos and other media to make content more interesting and engaging for your students.

To find out more, or talk to us about your ideas, contact your local Pearson representative or email hello@cndg.info

We put the social engagement back into teaching

“We are not interested in building completely automated, run-on-their-own, no-contact systems: we build environments that help educators communicate their expertise and their knowledge to students in a direct, impactful way.

If you look at the origin of Western education — the Socratic method of dialogue — that’s what we are trying to get back to.”

William Prensky
CEO, CNDG

CNDG was founded in 2006 by a small group of emergent technology enthusiasts who wanted to create stimulating virtual meeting and learning spaces.

Over the last 12 years, and in our partnership with Pearson Education, we have grown to become one of the leading providers of online 3D Virtual Learning Environments.