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Enhanced WebAssign® Helps Keep College Algebra Students Actively Engaged in Learning

Alvin Bahr has enjoyed a lifelong love of mathematics and statistics. Graduating from South Dakota State University in 1996, he taught high school math for two years but wanted to continue formal learning. In 1998, he returned to the university to obtain a master's degree. During graduate school, he worked as a teaching assistant in the Mathematics and Statistics Department and has now been at the university for fifteen years. Currently, he is an instructor of statistics and college algebra, where he shares his love of these two disciplines with entering students.

Alvin has a busy schedule. “Most semesters,” he says, “I carry a full course load. Enhanced WebAssign is a terrific tool, because I can quickly assign homework and have it graded before the next class. This makes it possible for my students to review how they’ve done on their assignments and come to class better prepared. They seem to appreciate how much easier WebAssign makes it to stay actively involved in their schoolwork.”

Alvin has worked with EWA for close to seven years. Though he has used another digital instructional tool, he praises EWA for its cost effectiveness — and Cengage Learning’s support and willingness to respond to emerging pedagogical needs. He also likes features such as links to tutorials and interactive e-books. “Because my teaching assistants can grade assignments online, we do not have to factor paper-based grading into the budget, which saves needed funds,” he says, “I also like the fact that students can get their textbook online, so they don’t have to use a hard copy unless they want to.”

COURSES AND PARTICIPANTS

South Dakota State University offers traditional classroom and online courses. During a typical semester, Alvin teaches Introduction to Statistics and College Algebra and may also teach pre-algebra and trigonometry. Of his nearly 300 students, approximately 100 take classes online and the rest are divided between two classrooms. Most are freshly minted high school graduates from South Dakota and nearby Minnesota.

“A good number of my students take math because they are going into nursing,” Alvin says. “Some need it because they are in economics or biology classes or require it for their major. Whatever their reasons, they benefit from keeping up with homework assignments and getting extra help online with material that may be hard to grasp on initial exposure. Enhanced WebAssign is great in those areas.”

THE CHALLENGES

Introductory math classes at Alvin’s school tend to be large. Often, as many as one hundred students fill a lecture hall, a close to three-fold increase over average class size in past years. Alvin and his fellow instructors are concerned not only with imparting basic math concepts but also keeping students

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CHALLENGES

- **In large lecture sections, students may not be able to get answers to their questions**, which puts them at risk of not acquiring the foundational knowledge they may need in other classes.
- **Without the fast feedback provided by online grading**, students tend to disengage from learning, lose motivation, and even withdraw from a class.
- **Contending with a paper-based grading system** makes it more difficult for instructors to work efficiently and provide an effective learning experience.

SOLUTIONS

- Enhanced WebAssign®
- Gustafson and Hughes, *College Algebra 11/e*

RESULTS

- **Online grading gives students real insight into** their performance on assignments. As a result, they benefit more from lectures, even in large class sections.
- **EWA leverages the power of digital learning** by providing access to a variety of online resources for both students and instructors.
- **EWA has helped improve** student engagement and performance in algebra and statistics classes.

“What I like about Enhanced WebAssign is that it gives students immediate feedback. Their comprehension improves, because they know right away whether they got something right or wrong, what the answer is, and how it was arrived at.”

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continued from page 1

motivated and helping them to be successful. “Though classes can be big, we aim to create the interactive environment you’ll find in a smaller section. We want to do everything we can to keep students from getting discouraged and withdrawing,” he says.

Alvin believes that one of his students’ greatest challenges is getting their questions answered. “We provide them with remote control devices — clickers — so that they can ask about concepts and operations they don’t understand.”

EWA is also very helpful in this regard, he notes. Its Gradebook provides functionality such as ScoreView, which offers a convenient means of tracking student progress, and Class Summary, which helps identify the specific areas where students are struggling. When he checks homework online, Alvin is able to quickly pinpoint the areas students are having trouble with and address them in the very next lecture. “Enhanced WebAssign also makes it easier to see when a number of students have arrived at an answer the same way and correct poor methodology. I am not wrestling with stacks of hard copy to get at this information.”

THE RESULTS

With EWA, Alvin’s teaching assistants can quickly grade online homework assignments or lab projects. EWA retains a permanent record of these grades in a central repository, which significantly reduces paperwork. And it is also flexible. Alvin can offer partial credit for answers that are not completely correct, allow more than one approach to a solution, and regulate the number of attempts students make to solve a problem.

“What I like about Enhanced WebAssign besides its flexibility is that it gives students immediate feedback,” says Alvin. “Their comprehension improves, because they know right away whether they got something right or wrong, what the answer is, and how they can do the same type of problem.”

EWA also makes homework assignments more enjoyable. Students report that they like the online assignments.

In reflecting on the benefits that EWA offers students and instructors, Alvin says, “I give Enhanced WebAssign a high grade. It would be tough to teach and learn without it. In fact, and this is big, budget constraints might prevent us from assigning homework at all. That would lead to an inferior learning experience and poorer grades. I recommend it to all my colleagues who are not yet using it.”

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