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CHALLENGES

- **Students lack the math skills needed for economics**, requiring the use of class time to answer basic questions.
- **Diverse skill levels and learning needs** often warrant individualized attention.
- **Sparking and maintaining interest** is especially problematic in economics, a discipline that learners typically find to be difficult.

SOLUTIONS

- Aplia
- Mankiw, Gregory N., *Principles of Microeconomics*
- Mankiw, Gregory N., *Principles of Macroeconomics*
- Mankiw, Gregory N., *Brief Principles of Macroeconomics*

RESULTS

- **Math and graphing tutorials help students overcome deficiencies** in these crucial areas, leaving more time for instructors to focus on core concepts.
- **Students complete exercises at their own pace**, receiving immediate feedback with detailed explanations for every answer. Randomized problems ensure that students do their own work.
- **Aplia promotes student engagement and critical thinking** with a commanding, yet appealing interface and interactive chapter assignments, news analyses, and experiments. A Do No Harm feature encourages multiple attempts at exercises, which can enhance understanding and skill development.

Aplia™ Boosts Student Engagement in Economics with an Appealing Interface and Interactive Exercises

Philipp Jonas is the lead instructor of economics at Kalamazoo Valley Community College (KVCC), where he has taught since the fall of 2006. He has used the Cengage Learning Aplia™ online homework solution since his graduate assistant days at Western Michigan University, and thinks Aplia is the best eLearning solution available for the blended and online versions of his Principles of Micro and Principles of Macro courses. He finds Aplia's interactive exercises, which actively promote students' involvement, to be excellent — and his students' reaction has been consistently positive. He has no qualms about recommending Aplia to his colleagues.

COURSES AND PARTICIPANTS

Philipp's students are full- and part-time learners who typically take micro and macro as a requirement to complete an enrichment program, an associate of applied science degree, or the school's transfer program in preparation for earning a bachelor's degree at a four-year college or university. About 10% are non-traditional learners, but the vast majority is of traditional college age. Philipp's class is small for a college that serves a population of more than 12,000 learners, in keeping with the administration's commitment to maintaining a faculty-student ratio of 1/24 for blended courses.

Philipp's teaching efforts are also supported by the school's learning management system, Moodle, which provides access to teaching slides, learning objectives, and other course resources.

THE CHALLENGES

Philipp's primary challenge is that his students lack the mathematics skills necessary to get through economics when they begin the course. "Hands down, the biggest obstacle to my students' success is the inadequate level of math preparation that they have as incoming freshmen," he says. "They're just not ready for college economics." Although only some students have trouble with the requisite basic math skills and concepts — such as working with graphs, using single variable algebra, and fractions — it's enough to slow down the rest of the class.

"In addition, economics is a difficult subject even without the mathematics," he continues, "and probably one of the tougher courses that students will take in the timeframe spent earning an associate's degree."

Working with students who have varied proficiency levels is a clarion call for a solution that allows users to study at their own pace, receive individualized feedback, and attempt problems multiple times until they "get it."

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THE RESULTS

Aplia allows Philipp to spend less class time teaching math, and more time teaching economics. One reason is that the Aplia math and graphing tutorials help ill-prepared students get up to speed with the rest of the class. When asked what he likes best about Aplia, Philipp cites the interactive problem sets, which engage students in the course material and require them to think about what they are learning.

“Aplia goes far beyond asking students to answer multiple-choice questions. For instance, its graphing problems are as challenging and as effective as having students draw their own graphs,” he says. “I also really like the ‘algo’ [algorithmic] questions. They aren’t provided as a fixed set of questions that all students see. When a student tries an exercise again, Aplia generates a new set of variables rather than drawing from a few different versions of it.” Scenarios, dates, quantities, and names in Aplia exercises are randomized, ensuring that students do their own work — and eliminating any temptation for them to share access with one another. Furthermore, while each question has different versions, learning points are the same for every variation. Aplia also incorporates articles from respected news sources, helping students connect current events with course concepts.

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Aplia’s Grade it Now feature allows students to receive immediate feedback on exercises, with detailed explanations to guide them when they answer incorrectly. “The Do No Harm feature incorporates a sensible grading mechanism that allows and even rewards students to make multiple attempts at a problem, while holding them accountable for their work,” he says. “It doesn’t simply record the highest grade among multiple attempts, so it eliminates the possibility that a student will use an initial attempt just to see the explanation.” Students can work through a problem several times if they wish, until they understand the underlying concept.

Students’ reactions to Aplia have been positive. Philipp credits the interface, which he says is the best one among available homework solutions, with being critical to student engagement. “Right from the start, my students show a respect for the platform that I don’t see with many other platforms,” says Philipp. “Somehow, the interface communicates that Aplia is a serious and authoritative college learning resource, and they approach it with a greater level of seriousness as a result. When students take their work seriously, they’re more likely to succeed, so having Aplia in the tool chest is an advantage.”

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