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— Jefferson Community and Technical College

Students Use Aplia™ to Visualize and Interact with Concepts in Biology

It's not a stretch to say that Kathryn Lowrey is a woman of science. In her 14 years at Jefferson Community and Technical College (JCTC) in Kentucky, she has taught astrobiology, biology, botany, horticulture, principles of ecology, and zoology. She's currently head of the biology department, and uses the Aplia™ online homework tool to complement her online introductory biology course. Biology students sometimes need to stretch their brains to grasp complex topics, and Kathryn says that Aplia encourages them to interact on a deeper level with concepts in a way that goes beyond other online learning resources. She and her students also appreciate its friendly, easy-to-use interface.

COURSES AND PARTICIPANTS

Most of Kathryn's students take biology to meet a general science requirement for an associate's degree. About two-thirds of them are traditional learners, while the others are older and returning to school after a long absence; for instance, to regroup after losing a job.

Kathryn uses Aplia as a way to encourage practice and concept reinforcement, and to fill in gaps on topics that are not covered by assignments that she creates herself. Some Aplia assignments are required, and students can reinforce what they read about in their textbook by working through as many of the other exercises as they wish to.

THE CHALLENGES

Many of Kathryn's students are humanities or English majors who have neither an interest nor a background in science. "Getting students to do the work is an ongoing challenge, in part because they have a lot on their plates," she says. "Our students typically have challenges beyond school concerning child care, health, and finances. Understandably, it's hard to get them to prioritize and spend a lot of time on school work. That means that any learning resource has to be convenient and easy to use, because if they run into a technical barrier, they just won't bother."

Even students who are interested in biology have trouble grasping some course concepts. Kathryn's students struggle in particular with DNA replication and with chemistry-related content such as the chemical reactions that occur in cells. "When I'm not available to interact with the students and answer their questions, they need as much help as they can get," she says.

Finally, as in many disciplines, biology students must do more than read about a topic once and hope to pass the tests — they need to spend time reviewing material, and they often need to interact with concepts to really understand them.

CHALLENGES

- **Instructors have trouble motivating** some students (who take biology as a requirement or who have priorities other than school) to do their homework.
- **Biology's challenging concepts** make it important for students to have extra help and practice in order to learn and retain the material.
- **Some of the more complicated biological processes are difficult to grasp** through reading alone.

SOLUTIONS

- Aplia
- Starr, Cecie, Christine Evers, & Lisa Starr, *Biology Today and Tomorrow without Physiology*

RESULTS

- **Aplia engages students** with an intuitive interface and active learning opportunities. **Auto-graded assignments hold students accountable for their work**, increasing their effort and helping to assure that they are prepared for the introduction of new topics.
- **Aplia's varied, interactive exercises promote practice, critical thinking, and comprehension.** Immediate feedback for every answer offer guidance for incorrect responses and encourage further study. Exercises mirror the content, style, vocabulary, structure, and level of the textbook in use, reinforcing what students read.
- **Animations help students visualize and understand**, complex processes, systems, and concepts.

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THE RESULTS

Kathryn was first attracted to Aplia for its intuitive, student-friendly interface. It’s also easy to use with the college’s Blackboard® learning management system. “I can put a direct link to an Aplia assignment on Blackboard and all students have to do is click to get to it. It’s easy for me to post an assignment that way, and convenient for them,” she says.

Aplia for Biology helps students learn and understand key concepts via focused assignments, active learning opportunities, and detailed explanations. Questions are randomized and graded automatically. Diverse types of questions — all written by a biology instructor specifically for the text — engage students and help them go beyond rote memorization and gain an understanding of concepts. “Many online support packages include just a list of multiple-choice or fill-in-the-blank questions, and that can get boring. Aplia questions are more interactive. Aplia actually responds to students’ answers and gives them an option to go back and try a question again,” says Kathryn.

She continues, “Aplia draws students into interacting with the material on a deeper level, and requires them to think about concepts on multiple levels,” says Kathryn. “I like the variety of questions. For instance, in one unit, students had to read about the water cycle and review a diagram. They had to understand the cycle and be able to interpret the illustration in order to answer the questions. Other questions have students interpret graphs and charts or fill in labels on diagrams.”

Kathryn also likes providing her students with resources that go beyond the textbook. “Aplia gives me another tool that I can use to keep things interesting for the students. I can post required assignments as well as offer Aplia as an extra study and practice tool that can help them when I’m not available,” she says. “The additional interaction is beneficial. For students who are struggling to understand difficult topics, Aplia has some excellent animations that help them to visualize biological processes.”

“The graded assignments also provide an effective way to get students to prepare for the presentation of a new topic in the course,” says Kathryn. “Aplia does get them to interact with the material in a good way, much more so than just reading the chapter. It’s a helpful resource for students.”

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