



Questionmark Case Study

Placement Tests Help Biology Students Succeed

Background

Kirkwood Community College is the fourth largest community college in Iowa, serving about 16,000 students annually. Its main campus is in Cedar Rapids, Iowa, with 12 satellite learning centers in seven counties.

Most academic departments at Kirkwood use Questionmark Perception™, which the college has been using since 1998. The Learning Services Department helps faculty to design tests, quizzes, exams, tutorials, and effective questions. Approximately 10,000 secure Perception tests are administered annually via Questionmark Secure at the main campus and the 12 learning centers.

The college uses a standardized placement test to assess new students' reading, writing, and mathematics skills, but this testing does not address placement in discipline-specific courses where prerequisite knowledge is key to success.

Which Biology Course?

It used to be that students often registered for the wrong biology class when they came to the college. They took the advanced College Biology class and failed it, or took the Basic Biology course and found it too easy.

In 2006, the Learning Services department helped Biology faculty create a placement test using Perception. Prerequisite knowledge in various topics, such as cell division, was organized in a topic structure in Perception. The team contributed questions to the online shared repository using the Word Authoring Template, browser-based authoring, or working directly in the shared repository. Existing questions in Word files were formatted for direct import into Perception.

Field Testing

"We field tested the first version of the test with Biology students, eliminated nonperforming items, and then field tested again," says Rich Edwards, professor of Learning Services and Perception Assessment Manager. "We used the Item and Question Statistics reports to identify

questions that did not meet difficulty, correlation, and discrimination criteria." The team created two forms of the test, A and B, each with 40 questions. Students who did not obtain the cut score on Form A could attempt Form B. The two forms had to be equally difficult so that students would be placed properly regardless of which test they took. On a scale of 0 (the hardest questions) to 10 (the easiest), the questions on Form A had to be within 0.1 point on the difficulty scale compared with the questions on Form B.

Improved Success Rates

Beginning in fall 2007, students were required to take the test before they could register for a Biology course. Scores were uploaded into the student information system, and students who did not obtain the required score were blocked from registering for the advanced course. Student success rates improved dramatically in fall 2007 and spring 2008.

Language Course Placements

Learning Services is working with the Spanish department to create a similar assessment to determine the proper placement in four levels of Spanish. The department considered purchasing a placement test, but discovered there wasn't one that aligned with the curriculum.

Edwards says that these kinds of placement tests probably couldn't be created without Perception. "It would be really difficult, because Perception has so many features and tools to facilitate the whole process of developing an assessment," he says. "This is a great tool to create a placement test for any discipline."

More information

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