CASE STUDY
BUNKER HILL COMMUNITY COLLEGE

Digital Course Solution Improves Student Success and Increases Student Retention

Professor Hoover wanted to standardize course content across multiple sections being taught by various instructors to deliver effective content regardless of learning styles. He looked for a solution in digital media and eventually selected *Connect*® *Anatomy & Physiology.* This solution ultimately allowed him to synchronize assignments and assessments, minimize start-up time for new instructors, and offer engaging student materials which yielded dramatic 10-15% increases in student performance.

Institution Profile

Bunker Hill Community College (BHCC) is a public, two-year institution that enrolls over 11,000 students on multiple campuses across the Boston metropolitan area. It serves a diverse student population from more than 103 countries. The majority of students hold jobs outside of school, so to better serve this population, BHCC has implemented a wide range of instructional programs including weekend, evening, web-based and distance learning.

Implementation

Course Description:

The Anatomy & Physiology course is a two-semester sequence course, offered in both traditional face-to-face (3 hours lecture + 3 hours lab) and hybrid formats (lecture online + on-site lab) by 15 adjunct instructors.

Course Grade:

- 55% of the final grade based on exams
- 25% of the final grade based on lab assignments
- 10% of the final grade based on quizzes
- 5% of the final grade based on interactive homework
- 5% of the final grade based on McGraw-Hill *LearnSmart™, Connect's* adaptive assessment tool

Digital Product in Use:
Connect Anatomy & Physiology

Course Names:
Anatomy & Physiology I
Anatomy & Physiology II

Course Type:
Traditional
(3 hours lecture + 3 hours lab/week)
Hybrid
(online lecture and lab on campus)

Credit Hours:
Three

Textbook in Use:
Anatomy & Physiology: The Unity of Form and Function
by Saladin

Instructor Name:
William L. Hoover II, M.D.

Enrollment:
1,250/year

Case Study Term:
Fall 2009 and Spring 2010

"Approximately a third of my students will now purchase Connect Plus *instead of the hard copy because of the 'My Notebook' feature. They rave about how it helps them organize their notes/highlights in preparation for exams."*

- Professor William Hoover

Implementation of McGraw-Hill *Connect*

When BHCC started using *Connect Anatomy & Physiology* in September 2009, the primary objectives for the technology were to:

1. Standardize course content across all sections to facilitate and coordinate instruction for 15 adjunct instructors
2. Use engaging digital media to effectively deliver material to all students, regardless of learning style
3. Effectively assess student performance
4. Minimize instructors' administrative/grading time

To address these objectives, they used the course sharing tools in *Connect Anatomy & Physiology* to create a master course with all of the assignments included. Each adjunct instructor was then able to deliver the same course materials, including the eBook, assignments and assessments. Students were required to complete and submit all assignments online, which were then graded automatically for instant feedback. In addition, students were required to complete the *LearnSmart* modules before lecture, and were encouraged to view recorded lectures through *Tegrity,* an automated lecture capture service in *Connect Anatomy & Physiology*.

Results Achieved

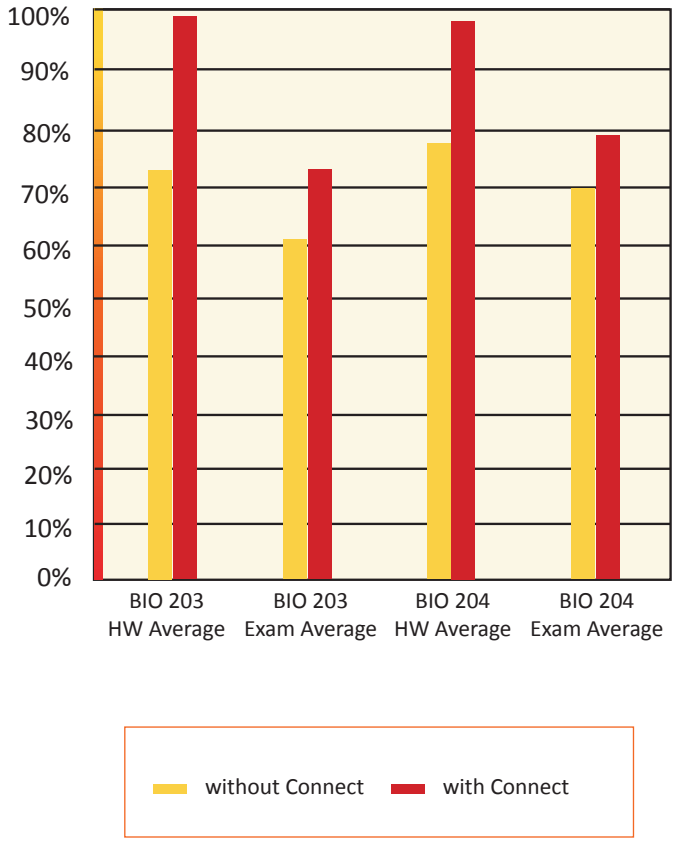
Connect Anatomy & Physiology has had a significant, measurable and positive impact for BHCC. "I had students who were consistently scoring in the low 60's on each of the weekly quizzes," Professor Hoover says. "Once I started assigning homework through *Connect Anatomy & Physiology,* those same students started earning scores in the high 70's! On average, my students' performance has risen by 10-15%" (see Figure 1). He attributes this rise in student learning outcomes to two key features of *Connect Anatomy & Physiology:*

1) Synchronized Assignments and Assessments which increased student understanding

2) Powerful Reporting which made meetings during office hours much more effective

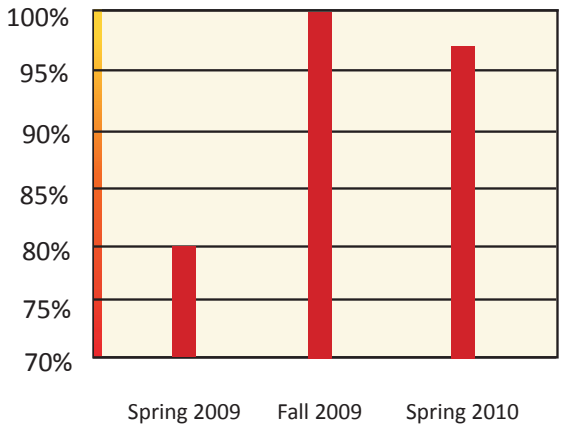
In addition, *Connect Anatomy & Physiology* has proven to increase student retention rates. For the past five years, 17-20% of all students enrolled in BIO 203 and BIO 204 dropped the class, for a retention rate of nearly 80%. In the fall of 2009, not one student dropped out of a section using *Connect Anatomy & Physiology,* for a retention rate of 100%. In the spring of 2010, only 3% of students dropped the class, for a retention rate of 97% (see Figure 2).

Figure 1 - Fall 2009 Homework and Exam Averages for BIO 203 and BIO 204



Connect Anatomy & Physiology also allows for higher order questions to be administered and auto-graded, reducing grading time for Professor Hoover and other instructors by 90%. Professor Hoover used this recovered time on instruction, working with students, and other academic activities.

Figure 2 - BIO 203 and BIO 204 Retention Rates



Connect Anatomy & Physiology has helped BHCC, with its diverse student population and high number of adjunct instructors, provide a "standard" for delivering course materials. With *Connect Anatomy & Physiology,* they know that all students are exposed to the same material and all performance can be tracked. The adjuncts, many of them first time instructors, can now 'hit the ground running' because they have a course template created by the department to use.

Professor Hoover's students love *LearnSmart,* which assesses their knowledge and provides a personalized learning experience around their strengths and weaknesses while connecting them directly to the eBook for instant review when needed. They claim it makes it easy to come to class prepared, and coming prepared allows for more discussion and participation during class. "We all get so much more out of it."

"I believe *Connect* is changing the way educational materials are being delivered," Professor Hoover says. *"Connect* is providing a platform for instructors to administer powerful assessments requiring higher ordered thinking with the luxury of having them autograde. That luxury allows more time for developing meaningful lessons. In addition, the Reports feature provides instructors with a staggering amount of information to assist them in helping their students, in modifying their lectures and exams and in preparing for reaccreditation."

> *"I have never been a good passive learner. As a student, I need to interact with course material in order to retain it, and* Connect *offers a perfect platform for this kind of learning. Rather than just reading through textbooks,* Connect *has given me the tools to feel engaged in the learning process. I find myself understanding complex material on a whole new level. The labeling exercises and diagrams, the* LearnSmart *interactive study questions and personalized assessments – they have allowed me to play an active role in my own education, and as a student, that is a very empowering feeling."*
>
> *- Jennah Epstein Kraus,*
> *Student at Bunker Hill Community College*

Conclusion

Given the measurable, positive impact that *Connect Anatomy & Physiology* has had on the Anatomy & Physiology courses, BHCC plans to expand its use of the product as quickly as the number of computer classrooms on campus allows. Professor Hoover also recommends *Connect Anatomy & Physiology* to other faculty.