

# Case Study

Biology at  
Kingsborough  
Community College



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# About the Supporting Organizations



**Every Learner Everywhere** is a network of twelve partner organizations with expertise in evaluating, implementing, scaling, and measuring the efficacy of education technologies, curriculum and course design strategies, teaching practices, and support services that personalize instruction for students in blended and online learning environments. Our mission is to help institutions use new technology to innovate teaching and learning, with the ultimate goal of improving learning outcomes for Black, Latinx, and Indigenous students, poverty-affected students, and first-generation students. Our collaborative work aims to advance equity in higher education centers on the transformation of postsecondary teaching and learning. We build capacity in colleges and universities to improve student outcomes with digital learning through direct technical assistance, timely resources and toolkits, and ongoing analysis of institution practices and market trends. For more information about Every Learner Everywhere and its collaborative approach to equitize higher education through digital learning, visit [www.everylearnereverywhere.org](http://www.everylearnereverywhere.org).



**Association of Public and Land-grant Universities (APLU)** is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the U.S., Canada, and Mexico. With a membership of 244 public research universities, land-grant institutions, state university systems, and affiliated organizations, APLU's agenda is built on the three pillars of increasing degree completion and academic success, advancing scientific research, and expanding engagement. Annually, member campuses enroll 5 million undergraduates and 1.3 million graduate students, award 1.3 million degrees, employ 1.3 million faculty and staff, and conduct \$49.2 billion in university-based research.



**Achieving the Dream (ATD)** leads a growing network of more than 277 community colleges committed to helping their students, particularly low-income students and students of color, achieve their goals for academic success, personal growth, and economic opportunity. ATD is making progress in closing equity gaps and accelerating student success through a unique change process that builds each college's institutional capacities in seven essential areas. ATD, along with nearly 75 experienced coaches and advisors, works closely with Network colleges in 44 states and the District of Columbia to reach more than 4 million community college students. Follow ATD on Twitter, Facebook, and LinkedIn.



**Intentional Futures** is a Seattle-based design and strategy studio. We work closely with clients across the public and private sectors to solve hard problems that matter and make big, ambitious ideas come to life. Our core offerings include human-centered strategy, data-driven storytelling, intentional, collective learning, and product design and prototyping. To learn more about iF or see our past work, visit [intentionalfutures.com](http://intentionalfutures.com).

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# Biology at Kingsborough Community College

Active learning and learning analytics for student success.

## Background

Kingsborough Community College (KBCC) is a public, two-year college in Brooklyn, NYC, and is part of the City University of New York system. KBCC is a Minority Serving Institution, an associate member of the Hispanic Association of Colleges, and eligible for the Asian American Native American Pacific Islander Program. The current student population of 15,000 is predominantly first-generation. Increasingly, students over the age of 24 are enrolling part-time.

## Continuous improvement: Making test bank questions relevant

Dr. Kristin Polizzotto, professor of Biological Sciences, has for years been interested in digital learning tools that might help her students engage interactively with the course content outside of class. However, she found many of them not user friendly for her students in that they operated outside of the institution's LMS and they required a strong broadband connection. When Dr. Polizzotto finally found a digital tool that suited her students, she discovered a far more important feature in it: the ability to customize test bank questions.

Comparative data over five years revealed little to no improvement for students using digital learning tools in KCC's Intro to Biology classes. When Dr. Polizzotto asked her students about their experience with the digital tools, they were generally positive about the tools, although they perceived a lack of alignment of quiz questions and course learning objectives. Curious as to why the students did not recognize the alignment that was intentional and clear to the creators of the quiz bank, Dr. Polizzotto reviewed the questions herself.

According to the textbook publisher who provided the test banks, the assessment questions measure student mastery of course learning objectives at various levels of achievement. Higher-level questions can be relatively long and complex, and students need to identify relevant information in them. Non-native English speakers, students with less test-taking experience, and students from varying cultural backgrounds have difficulty separating out the relevant information. An item analysis allowed Dr. Polizzotto to gain a deeper understanding of student performance on questions written with unnecessarily complex language. She began rewriting assessment questions to maximize language clarity, so that each question measures student mastery of the learning objective rather than measuring student reading comprehension. As of yet, no formal analysis has measured the effect of these changes, but preliminary analysis shows approximately 80% of students answered revised questions

## Project Contact

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