



# BCIT: rewriting the textbook for student success with adaptive learning

Transforming student engagement with adaptive learning

*Students at BCIT are doing more than just gaining a great education — they're taking the next step in their career. BCIT worked with D2L to build an adaptive learning platform that helps students hone in on the skills they need to work on, and earn the right qualifications to succeed in the workplace.*

## AT A GLANCE

**Student Number:** 48,000

### Interviewees:

- Bryan Fair, Supervisor of Educational Technologies, Learning and Teaching Center
- Lawrence Potyondi, Automotive Instructor, School of Transportation



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*Bryan Fair, Supervisor of Educational Technologies, Learning and Teaching Center*

## SUMMARY

When students are preparing for a final test, it’s easy for them to get overwhelmed by the sheer amount of information they need to master—yet the gaps in their knowledge are often much smaller than they think. BCIT is using the Brightspace LeaP™ adaptive learning engine to help students recognize their strengths and work on their weaknesses, directing them to the content that holds the information they need.

## QUICK FACTS

- Brightspace LeaP™ boosts engagement by helping students target the specific competencies they need to strengthen to pass their tests.
- The School of Transportation has seen a 26% increase in overall test scores, rising to 48% for students who were previously at risk of failing.
- Students can prepare for tests more independently, empowering instructors to focus on teaching new skills rather than reinforcing previous lessons.

## BUILDING A STUDENT-CENTRIC CULTURE

As western Canada’s largest polytechnic institution, BCIT takes pride in its close relationship with industry and the hands-on nature of the education it provides. In addition to providing a solid foundation in theory, its courses have a resolutely practical aim: to give students the skills and experience they will need in the workplace.

“Our philosophy is that your career starts on your first day at BCIT,” says Bryan Fair, Supervisor of Educational Technologies in the Learning and Teaching Center. “Most of our instructors come from industry, so our students are learning from people who have spent years practicing the skills they’re teaching. That’s a key reason why our students do so well.”

The results speak for themselves: the employment rate for BCIT graduates is 96%. Nevertheless, the institution and its faculty are always looking for new ways to help students succeed. Lawrence Potyondi, an Automotive Instructor in the School of Transportation, is a prime example.

“When I started out as an instructor, I had an old-school approach, very much based around lectures, handwritten assignments and textbooks,” says Potyondi. “But as I looked at my students’ results and started listening to their stories and concerns, I realized that approach didn’t work for everyone. If you want to give your students the best chance of success, you need to keep trying new things.”



### **PERSONALIZED LEARNING THROUGH TECHNOLOGY**

Truly personalized learning for every student is the ideal, but it's difficult to achieve using traditional methods. Even a large institution like BCIT doesn't have the resources for one-to-one mentoring. Instead, it groups students into small cohorts to maximize their contact with instructors and encourage peer learning.

Fair comments: "Time is the main challenge: how can faculty members focus on innovation and the strategic implementation of new ideas when everyone is constantly busy? We wanted to find a way to free up our instructors by empowering our learners to take an active role in their own learning."

BCIT realized that technology could provide the answer. In a major consolidation project, it had recently replaced 10 separate instances of learning management systems from three different vendors with a single enterprise platform: Brightspace from D2L. This platform provided the foundation for an exciting new initiative around adaptive learning.

### **SUCCESS COMES FROM PREPARATION**

When Fair and Potyondi saw a presentation about a new solution called Brightspace LeaP™, they quickly saw its potential to revolutionize a key aspect of the student experience at BCIT.

"Brightspace is now considered an enterprise system at BCIT, and it's going to be the only platform we use for teaching and learning," says Fair. "So, we're always looking for new ways to incorporate Brightspace into our methods, and we saw LeaP as a really exciting prospect to help students reinforce their knowledge and prepare for tests."

Many courses at BCIT focus on helping students gain professional certification from industry bodies, which typically involves sitting an examination that assesses the student's overall knowledge across all areas of the professional domain. Preparing for this test can often be a disheartening experience—the course textbook may be hundreds of pages long, and students can feel like they need to learn every word in order to pass.

To give their students more confidence, instructors spend a lot of time revisiting topics that they've taught already. This helps to reinforce the key topics, but it doesn't necessarily address the specific gaps in an individual student's knowledge. If they don't know what their weak points are, they can't ask for help.

## THE POWER OF ADAPTIVE LEARNING

The Brightspace LeaP™ adaptive learning system provides the answer. Throughout the course, LeaP gives students the ability to test themselves on what they've learned, and understand where their strengths and weaknesses are. Based on the results of those assessments, LeaP creates a personalized learning path (study plan) that guides the student thru the material they are struggling with. Going through this cycle of learning, testing and reinforcing their knowledge makes preparing for the final examination a much less daunting prospect.

“This is a tool that allows the learners to look at their own deficiencies, and motivates them to improve in the areas that require improvement,” says Fair. “It’s all about learner-centeredness.”

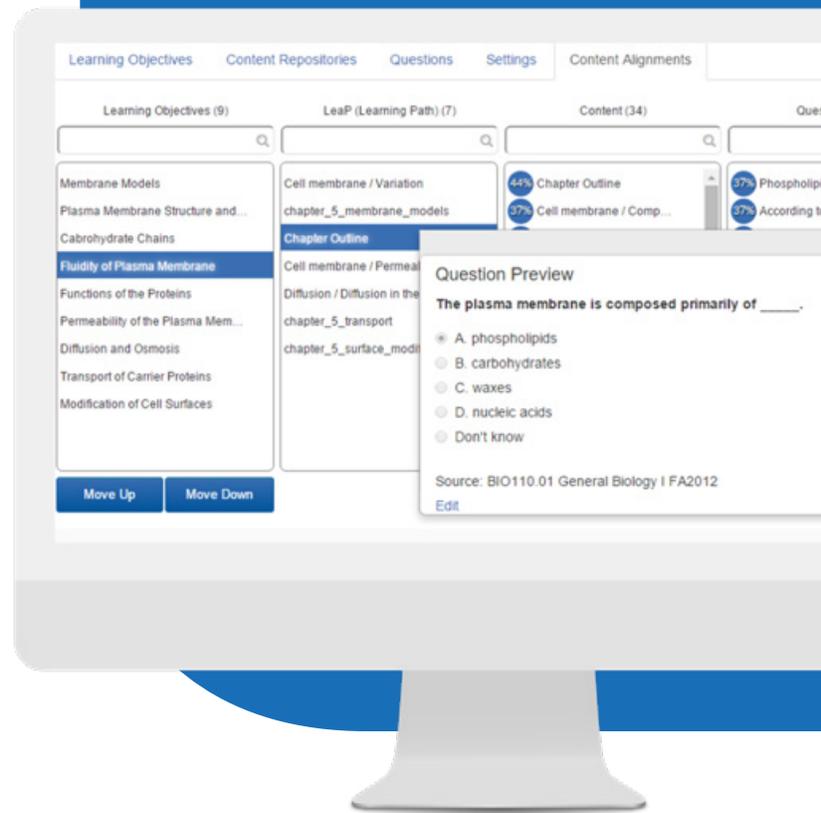
“LeaP is not a teaching tool, it’s a learning tool. It empowers students to work on their knowledge and skills independently, which in turn frees the instructors to focus on teaching new skills rather than covering old ground.”

*Bryan Fair, Supervisor of Educational Technologies,  
School of Transportation*

## ENHANCING THE EXPERIENCE

As one of the earliest adopters of LeaP, BCIT worked closely with the D2L team to build a solution that would meet its detailed requirements. In particular, Lawrence Potyondi played a leading role in developing the first set of LeaP-assisted courses for students in the School of Transportation.

“The team used to joke that Lawrence Potyondi put the ‘L’ and the ‘P’ into LeaP,” says Fair. “Over the course of the project we’ve seen significant enhancements in both BCIT’s adoption of adaptive learning and in the LeaP software itself—and that’s a testament to the countless hours that he and the D2L team invested in delivering the best solution possible.”



## ENABLING CHANGE THROUGH COLLABORATION

The project wasn’t just about building a technical solution—it involved coordination with other organizations too. In particular, Potyondi, Fair and the D2L team worked closely with educational publishers Nelson and Pearson to tag their textbooks with code that would allow LeaP to jump to relevant passages.

“Say a student gets a question wrong and LeaP tells them that the answer is in chapter 7 of their textbook,” imagines Fair. “If that chapter is 100 pages long, that doesn’t help them. We’ve worked with the publishers to get the resolution down to the level of individual paragraphs, so LeaP can tell them exactly where they need to look.”

Potyondi himself is modest about his contribution: “We’re teachers, so we show up every day and we do what we’ve got to do for our students. It’s been a lot of work. But at the same time, I’m starting to see my students go from those frowny faces to smiles.”



“D2L deserves a lot of credit for listening to our feedback and making LeaP into a really powerful solution for adaptive learning. It’s really all come together, and I’m going to enjoy the next 10, 15, or 20 years using this product. It’s embedded in the way I work with students day-to-day now, and it’s hard to imagine life without it.”

*Lawrence Potyondi, Automotive Instructor, School of Transportation*

### **DRIVING STUDENT ACHIEVEMENT**

When BCIT’s School of Transportation launched the first LeaP-assisted courses, they were an immediate hit with faculty and students alike—and after the first cohorts received their final test results, it was clear that LeaP had made a significant contribution to student success.

To measure the impact, Potyondi and Fair put students through a test before they started using LeaP, and then measured the difference in their results in the final test at the end of the course. Among the most able students, who achieved good results in the pre-test, scores improved by an average of 8.7%.

The results were even more dramatic for students who scored less than 70% in the pre-test: their scores improved by an average of 48%. Across the student cohort as a whole, the average improvement was 26.5%.

“Those are significant numbers. They could be the difference between a student quitting the program, or earning the qualification they need. This kind of achievement builds on BCIT’s reputation for student success. In fact, we’re even seeing other institutions send students who have struggled to graduate in the past to BCIT so that we can help them achieve their goals.”

*Bryan Fair, Supervisor of Educational Technologies,  
School of Transportation*



## TRANSFORMING LEARNER ENGAGEMENT

“As a teacher, it’s not the scores that matter—it’s the engagement we’re seeing from the students. They see a clear connection between using LeaP and gaining confidence in their learning, so adoption has been high.”

*Lawrence Potyondi, Automotive Instructor,  
School of Transportation*



Direct feedback from students emphasizes some of the features that BCIT and D2L worked hard to deliver—such as the ability to use LeaP seamlessly from any device, and the fact that they can use it to assess their knowledge of all the different course materials in a single place.

From the faculty perspective, LeaP is seen as an important time-saver. Once a new LeaP course has been set up, it requires only minimal input from instructors, and since students can be more independent in their preparation for tests, instructors have more time to focus on developing innovative course material and fine-tuning their teaching techniques.

Potyondi sums up: “D2L deserves a lot of credit for listening to our feedback and making LeaP into a really powerful solution for adaptive learning. It’s really all come together, and I’m going to enjoy the next 10, 15, or 20 years using this product. It’s embedded in the way I work with students day-to-day now, and it’s hard to imagine life without it.”