

IMPLEMENTATION SUCCESS IN CANADA

MIRAMICHI VALLEY HIGH SCHOOL
AND SARDIS SECONDARY SCHOOL

CISCO NETWORKING ACADEMY PROGRAM

SUCCESS STORY

New Brunswick, Canada and
British Columbia, Canada
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Two Canadian secondary schools located thousands of miles apart differ in student population size, demographics, and region, yet both have successfully implemented and sustained Cisco Networking Academy® Programs that have garnered the support of their guidance counselors, principals, and superintendents.

Through a challenging, multimedia-based IT curriculum and hands-on lab exercises, students gain practical IT experience while also improving their reading, writing, mathematics, and problem-solving skills. The Networking Academy increases their opportunities to obtain IT-related jobs or enter the colleges or universities of their choice—even for the students who might not have considered post-secondary education before entering the Academy.

Miramichi Valley High School

Miramichi Valley High School, a secondary school with 925 students in the province of New Brunswick in Eastern Canada, began exploring the Cisco Networking Academy Program in April 2001 when a parent expressed his son's interest in the program to the school's guidance department.

Cisco Systems® Canada Co. met with representatives from the school and the district office to describe the details of the program. Confident in the value of a Cisco® career certification, the technology-savvy superintendent, in conjunction with New Brunswick's Department of Education, funded the CCNA1 through CCNA4 courses for two teachers and one district technical support person.

A local business provided additional seed money, and by January 2002, the school launched its local Academy. Today, Miramichi Valley offers CCNA1 through CCNA4, a minimum 280-hour curriculum that covers the basic foundation of networking.



Dale MacRae
Cisco Networking Academy
teacher



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Challenge

Recruiting Committed Students

To stimulate interest in the Academy, the school first exposes potential students to the program in eighth grade when they visit Miramichi Valley and tour the Cisco lab used for the Academy program. Then teacher Dale MacRae notifies all the ninth-grade students in March about the registration deadline for the CCNA1 module to begin the following fall semester.

Although CCNA1 through CCNA4 are classified as Grade 11 and 12 classes, the students at Miramichi Valley typically start in tenth grade to allow six semesters to do four semesters of work before graduation in case there is a scheduling conflict. The students who express an interest in ninth grade attend a formal presentation where MacRae does “a lot of selling and bearing of the facts before they actually sign the dotted line.”

This whittles down the number of interested students significantly, and MacRae includes these remaining students in a more in-depth meeting that delivers a frank explanation of the commitment and work the Cisco Networking Academy will require. Parents are encouraged to visit the Cisco lab and to meet with MacRae to ask questions about the program. The school takes all remaining interested students and gives them just one week as they begin tenth grade to decide if they want to stay in the course.

“Cisco gives a lot, but expects a lot. If you meet the challenge, you feel good about it.” says MacRae.

Solution

Cisco Networking Academy Program at Miramichi Valley

Miramichi Valley High School offers CCNA1 and CCNA3 every first semester and CCNA2 and CCNA4 every second semester, capping the number of new students starting in the program each fall to 16. For those who decide to meet the challenge, it is a “win-win-win,” says MacRae. Students may earn three different types of credits at the same time by successfully completing the CCNA[®] curriculum: a technology credit to meet the school's technology requirement, a Grade 11/12 credit applicable for graduation, and a Cisco credit if they score proficient on the final exam.

Honing Their Skills

To apply what they learn, students work in an onsite Cisco lab with two racks each holding one Cisco switch—a Cisco 1900 or Cisco 2950—and three routers—one Cisco 2514 and two Cisco 2501 routers. The lab also includes a Linksys[®] 802b Wireless Router and a few spare Cisco 2501 routers can be preprogrammed with exam configurations.

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—Dale MacRae, Cisco Networking Academy teacher

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Students have plenty of access to Cisco equipment. Doors to the lab open at 7:30 every morning and stay open during lunch, and they can make appointments for after-school lab time. Some students opt to do lab work remotely via NetLab, a physical lab located two hours away from the school. They can log into the lab from their homes—24 hours a day, 12 months a year—and see on their computer screen exactly what they would see with the real equipment in the lab. MacRae can also review every keystroke to ensure his students derive answers in the best possible ways.

When mixed classes are in operation, the students in CCNA3 mentor students in CCNA1 during first semester and those in CCNA4 mentor students in CCNA2 in the second semester.

Flexibility, Team Approach Tackles Challenges

MacRae notes that getting students through the CCNA1 course is the biggest challenge. For the young students, it is often their first introduction to vast amounts of technical terminology. If they can build a foundation with CCNA1, he says the students find the CCNA2 course more interesting because it includes more hands-on lab work.

Knowing there will be an attrition rate and that not all students will continue through the full CCNA program, MacRae also opens his lab to online distance learning courses ranging from Spanish to Biology. Anyone peeking into the classroom sees that it is full, so the students dedicated to the Cisco Networking Academy are accommodated each semester.

MacRae says implementing the Cisco Networking Academy Program required a team approach from the principal, guidance, the district superintendent, and the IS manager. The support he's gotten from everyone involved has been fantastic. "If I were the only one in the building who wanted to make this program work, it would not happen," says MacRae.

The enthusiasm and knowledge of Miramichi Valley's Cisco Academy students has earned the respect of all involved. The district asked some of the networking students to make a presentation about the value of their CCNA courses. The district was so impressed and appreciative, that the superintendent and the IS manager donated a Cisco 2950 Switch to the high school's Cisco lab.

Support extends beyond the school. If students pose a technical question he can't answer, MacRae knows that his instructors in the regional Cisco Networking Academy at New Brunswick Community College can. "There's nothing I can stump them on," says MacRae, noting that the Cisco Technical Assistance Center is also very helpful.

"The whole process focuses on teamwork, critical thinking, problem solving—all of the skills you need in almost every aspect of your life."

—Dale MacRae, Cisco Networking Academy teacher

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Results

Value of the Academy

Classified as a Gold Technology School for its use of technology in general, Miramichi Valley solidifies the persona of being a technology institution by offering the Networking Academy's courses each semester. Based on the success of Miramichi Valley's Networking Academy program, the district also offered every other high school in the district the opportunity for CCNA training, and two of the four took advantage of it.

The school recognizes the value of the Networking Academy, even if the students do not become certified. "The whole process focuses on teamwork, critical thinking, problem solving—all of the skills you need in almost every aspect of your life," says MacRae, noting that the program trains students to meet a good challenge.

Most of the students who enter the program are college-bound, and some have leveraged their Cisco training to enter engineering programs of their choice. Others have used the training as a differentiator in applying for IT-related jobs. In either case, MacRae emphasizes that his students learn so much more than how a network operates. The final case study, for example, requires diagramming a network, pricing materials, choosing suppliers, and much more.

"Had we known then all the things we would accomplish with the Networking Academy, we'd have said the task is too big, but we work for what we get, and we don't mind working," says MacRae. "We all kept saying we'll do just this one thing, and one more thing, and now it's three years later, and I can't believe what we've accomplished, one step at a time."

Visit the Miramichi Valley High School's Website at: <http://mvhs.nbed.nb.ca/>.

Sardis Secondary School

Sardis Secondary School, located in the province of British Columbia in Western Canada, was one of the first schools in Canada to sign on to the Cisco Networking Academy Program seven years ago. With about 1,400 students attending the school, Academy participation ranges from 100 to 200 students annually.

The school is a local Academy for CCNA1 through CCNA4 courses. Because of the program's proven success, Sardis Secondary now serves as a regional Academy for IT Essentials I: PC Hardware and Software, IT Essentials II: Network Operating Systems, also offering the Fundamentals of Java Programming and the Fundamentals of Unix. Secondary schools typically do not serve as regional Academies for Cisco; Sardis is an exception.



John Murtha
Cisco Networking Academy
teacher

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Challenge

Setting up the Academy Program

As a joint effort between Sardis Secondary and the district, the Academy began without a hitch at a time when technology funding was plentiful and hunger for high-caliber technology courses grew the program quickly. The only initial challenge was finding the personnel who would make the commitment to get certified and run the program, and teacher John Murtha agreed to take the challenge. He completed a week of training for each course, and Cisco set up the lab, providing all the support needed for a successful launch. He soon went from teaching physics and computer courses to teaching computer and IT courses full-time the second year, to adding another computer instructor in the third year.

A shifting economy in recent years resulted in funding cuts that closed schools in the district and temporarily affected Sardis Secondary's Academy program. Yet Murtha continually revises short- and long-term strategies to evolve the program and bring Academy enrollment back up to the peak numbers from previous years. To keep the program moving forward, Murtha offers students who want extra work an opportunity to test pilot a class before offering it to all students.

District and administrative support has always backed the Academy, even during tough times. "That's always been key—to get those people to believe in the program and in the instructor," says Murtha.

Solution

Why Cisco Networking Academy Rose to the Top at Sardis Secondary

Sardis Secondary started out by offering just CCNA courses, which were the only Cisco Networking Academy courses available at the high-school level at the time. As a new member of the department housing the Academy, Murtha continued to evaluate other systems to ensure Sardis was offering students the best available IT training solution.

"What I liked about the program, first of all, was that the curriculum was all online, and students could gain access 24 hours a day, year round," says Murtha. "Cisco updated the curriculum for me—that was the biggest part. I used to develop my own courses and keep them updated. I used to live here. Cisco was my saving grace."

Murtha added that the Networking Academy's management system is another huge benefit. Students take exams online, and the assessment-based report system automatically marks them, keeps a database of results, offers a help section for students and for instructors, as well as a repository of resources. "It's the whole package deal. Nobody else has that. It's just fabulous, and it's the same model others should follow," says Murtha, who teaches some Microsoft certification classes that he would prefer to see offered online.

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Turnaround on Cisco equipment is a third important benefit, particularly since he still uses some older Cisco equipment alongside the new equipment in his onsite Cisco lab. If something fails, a replacement arrives within a day or two. The Cisco lab includes two Cisco 1900 and three Cisco 2950 switches as well as many routers: five Cisco 1600, five Cisco 1700, and one Cisco 2600. He also uses the NetLab setup in his server and software that allows students to access equipment 24 hours.

Like in many Academies, Murtha promotes the program in middle schools before the students do their high-school course selection. The Networking Academy will also be included in a video that Sardis Secondary is developing about its school. Many of his students begin Networking Academy courses in tenth grade, and a few students start in ninth grade. Yet as networking technology has become increasingly more difficult, so has the curriculum that supports it. That's why Murtha requires the IT Essential courses as prerequisites to the CCNA courses.

"IT Essentials 1 is a very fun and exciting course for kids in Grade 9 and 10," explains Murtha. "They get to rip computers apart and do hands-on work with stuff that they know about. For those who love it, the course motivates them to move into the more complex world of technology. It's also a great introductory course to teach students how to learn online, which is totally different than sitting in a class."

Results

Value of the Academy Program

In addition to applying their new skills through hands-on lab time, students in Grade 12 and 13 are also mentors for students in Grade 10 or 11. As the older students have learned to become more self-sufficient, they work with the younger students, labs, concepts, and assignments very much like an instructor would. "By mentoring younger students, they're strengthening what they've learned in the past while they're developing new skills," says Murtha.

Sardis Secondary offers 15 technology courses each semester, but since many high school students can't finish that many courses by Grade 12, Murtha added a Grade 13 for students who haven't aged out of the system yet. Articulation agreements with the nearby University College of the Fraser Valley enable most students who have stayed on an extra year at Sardis Secondary to begin at UCFV as a second-year student.

There's also a work component of this Academy program where students offer the skills they've learned to local businesses and organizations on a volunteer basis. Many students have obtained jobs that way or were inspired to start their own businesses to serve the community.

To help defray the costs of his many technology classes, Murtha and his students created a Website and began offering the classes remotely to students and adults throughout British Columbia for a fee.

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—John Murtha, Cisco Networking Academy teacher

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Turning Around the Life of Child

"I'm very passionate about this, I love it a lot," says Murtha, who wants to reach out to as many students as possible, given the shortage of technology teachers. "There are a lot of students out there who are geniuses in computer technology, but may be failing in other subject areas. If they took these courses, they would start to feel confident and feel like they fit in."

Murtha speaks from experience. He has taught students who have been kicked out of school and allowed to return to take his courses as a positive influence in their lives. He has convinced students who are struggling in other courses and doing well in his to pursue college—a route they would not have taken prior to their Academy training.

Sardis Secondary's Academy program has even produced multiple Provincial Skills Canada winners for British Columbia in a competition geared to a variety of skill trades from cooking to computer networking. Murtha prepares students for the competitions, and his students often come in first place locally and proceed to the National Skills Canada competition.

"I attribute a lot of that success to Cisco's curriculum," concludes Murtha. "I couldn't develop or keep that many courses up to date and also teach. Cisco takes care of all that for me and does a very good job at it."

In the future, Murtha hopes to offer Network Security, Wireless Networking, and Web Design in his Academy, and he will illustrate all his successes to justify those additional courses. He will tell his administration, "Look what we've done for our students and community. Let's keep the momentum going."

Visit the Sardis Secondary School's Website at: <http://www.sardissecondary.ca>.