



Case Study November 2009

Injecting Quality Into Production Excellence at Abbott Point of Care

NAME OF THE PROGRAM

Microelectronics Apprenticeship Training Program

DATE ESTABLISHED

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SKILLS DEVELOPED

Transferable and job skills
Critical thinking and problem solving
Health and workplace safety skills

CONTACT

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OVERVIEW

Abbott is a global, broad-based health-care company devoted to discovering new medicines, new technologies, and new ways to manage health. Its products span the continuum of care—from nutritional products and laboratory diagnostics to medical devices and pharmaceutical therapies. Throughout its 120-year history, the company and its employees have been driven by the desire to advance medical science. The goal—to help people live healthier lives—is part of the company’s heritage and continues to give direction to its work. Today, more than 72,000 employees around the world share a passion for “turning science into caring.”

Located in Ottawa (Ontario), Abbott Point of Care (APOC) is a division of Abbott Laboratories. APOC develops, manufactures, and markets critical medical

diagnostic and data management products for rapid blood analysis. In particular, Abbott Point of Care's two Ottawa-based facilities manufacture cartridges for the "i-STAT"—a revolutionary, hand-held analyzer that provides a comprehensive range of reliable blood tests. The device reports results in just minutes, using as little as two drops of blood and a test cartridge. The cartridge production process includes wafer processing, assembly, and administration support. Cartridge research and development are also supported at these 24-hour production facilities.

APOC's training program emphasizes that the health and safety of employees—and of the public—is paramount.

Due to the medical nature of APOC's products, health and safety are high priorities in all aspects of the company's day-to-day activities. Employees are constantly reminded of the importance of health and safety. A digital monitor located in the main lobby counts the number of accident-free days, and the importance of the meticulous production tracking process (handling, dating, and labelling of products) is stressed. All activities are geared toward production excellence through established standards, while keeping the health and safety of workers and of the public in mind.

To develop a workforce that is adaptable, qualified, and proficient in this specialized industry, APOC requires 400 of its Ottawa-based employees to participate in a mandatory, on-the-job, advanced-manufacturing microelectronics apprenticeship training program. Support is provided for those employees who first need to upgrade their education in order to complete this mandatory industry training. The training program emphasizes that the health and safety of employees at work—and of the public, as end users of the company's products—is paramount.

OBJECTIVES

Abbott Point of Care takes enormous pride in investing in its people. Its unique training programs work to ensure that APOC's workforce can adapt to the rapid changes that occur within the advanced manufacturing industry sector. A key objective of APOC's training is to develop

safety skills and to improve overall transferable skills (such as critical thinking and problem solving) as well as the education levels of its employees.

The overarching objectives of APOC's training programs are shown below.

- ◆ Increase literacy and numeracy skills to directly and positively influence quality and safety.
- ◆ Offer high-school programming for employees who have yet to complete this education level, which is a prerequisite to apprenticeship certification.
- ◆ Increase employees' understanding of their individual and collective roles within the organization so as to enhance engagement and pride in their work.
- ◆ Engage and train employees to be better prepared for Food and Drug Administration (FDA), ISO, Abbott, and other regulations.
- ◆ Advance transferable skills of employees to support current and future roles within the organization.
- ◆ Increase production efficiencies through essential skills development.

TARGET GROUPS

Participation in the apprenticeship program is mandatory for identified jobs, with a targeted focus on operators. This strategic long-term investment crosses all areas of the company—from the Wafer Lab to Facilities—and participants range in age from 20 to 60. These individuals are from multicultural and diverse educational backgrounds. All participants in the apprenticeship program are eligible for (and encouraged to consider) supplementary literacy and numeracy training to boost their skills in these fundamental areas.

ACTIVITIES

All apprenticeship training is completed on-shift, with appropriate coverage for production provided through effective planning and additional resources. Classroom training takes place in four-hour time blocks approximately once every two weeks for a three-year period. The training is delivered on-site at APOC, and there are approximately 40 apprentices per class. Due to the scope of the program, each module is taught 10 times over a

two-week period across five shifts, with 10 classes totalling 20 hours of classroom teaching time per week. The course modules are designed in collaboration with industry experts and APOC employees. One of the keys to the program's success is that trained teachers act as program designers as well as course instructors.

Abbott Point of Care has high expectations for its participants, and the company is focused on ensuring that the needs of its adult learners are met. In support of its apprenticeship training program, APOC also offers:

- ◆ literacy and numeracy skills upgrading;
- ◆ language support and tutoring;
- ◆ accommodation for special needs;
- ◆ make-up assignments when required;
- ◆ best available teachers/content; and
- ◆ high-school programming.

A key to the program's success is that trained teachers act as program designers as well as course instructors.

APOC is committed to its employees' learning experience and is conscious of the diversity of its workforce (in terms of culture, education, position, etc.). Therefore, all training classes are predominantly a combination of lecture, group work and simulation, in-class activities, and projects. There are no tests or exams and grades are a "pass" or "fail." The structure of the curriculum has purposely eliminated e-learning, homework, and essay writing. Instead, the focus is on hands-on activities, simulations, workbooks, and collaboration—all with highly relevant content connected to daily operations and real life.

RESOURCES

While all its literacy and numeracy upgrading initiatives are taught by in-house trainers, APOC relies on the following mix of trainers for its apprenticeship program:

- ◆ in-house trainers (5 per cent);
- ◆ contracted college professors (55 per cent); and
- ◆ industry specialists and independent trainers (40 per cent).

Abbott Point of Care absorbs training costs and works in partnership with the Government of Ontario (specifically the Ministry of Training, Colleges and Universities) and Algonquin College (a local technology college) to design and deliver its training programs.

Training schedules are carefully designed around production demands in order to minimize disruption—such as shutdowns and start-ups—particularly during hectic times. Employees take part in training during working hours, usually at the beginning or end of their shifts.

A key objective of APOC's training programs is to better equip our current workforce with the skills to do their job safely—understanding quality processes, while fostering innovation and a culture of learning. Investing in people builds a future workforce that is qualified, committed, and adaptable in an ever-evolving sector.

—Cathy Lewis, Manager of Apprenticeship Programming, Abbott Point of Care

INNOVATIONS

Upon completion of the in-class and on-the-job activities, apprentices receive a Microelectronics Certificate of Apprenticeship from the Government of Ontario's Ministry of Training, Colleges and Universities.

To ensure the company's mandatory training is well received by its employees, it was important for APOC to incorporate innovative learning approaches. The first key task was to ensure that all training was employee-centred. Curriculum, classroom work, and teaching staff

need to be engaging, interactive, flexible, entertaining, and respectful of the adult learner. Furthermore, all training curriculum is designed to be highly relevant to today's workforce and jobs at APOC.

APOC realized that it was essential to quickly establish a solid relationship between the teachers and the students.

In addition, an advisory committee (consisting of a cross-section of employees, learners, and partners) was formed to review the training programs at APOC and to ensure they continue to be relevant and valuable to the learner. This committee also serves as a “safety net” so that all involved are able to make suggestions for improvement.

Finally, since the company wanted to ensure that the adult learners were graded on their knowledge rather than on exam material, a pass/fail grading system was established. A high rate of participation and 100 per cent course completion is required to earn a credit. Detailed anecdotal records regarding student performance and participation are kept for all training received.

CHALLENGES

When Abbott Point of Care decided to mandate participation in its Apprenticeship Program in Microelectronics, there were some immediate challenges. First and foremost, the program that had been initially developed and recognized by the Ministry of Training, Colleges and Universities in 1998 was now extremely outdated—it did not meet the current and future needs of the company's business strategies.

Another critical challenge focused on the design of mandatory training for APOC's adult learners who come from diverse cultures and educational backgrounds. Before they can hope to succeed in the apprenticeship program, some employees need help with improving their literacy and basic skills. Others need language training in order to fully meet the requirements of the apprenticeship program. The stigma attached to “literacy”

and high school level training results in some reluctance on the part of employees to take advantage of these offerings.

In addition, production scheduling is impacted by these training initiatives, since employees take part while on-shift. As at any manufacturing plant or organization where shift work occurs, it is a delicate balance to ensure that production, business, and training demands are balanced.

SOLUTIONS

To tackle the outdated framework, Abbott Point of Care re-defined the apprenticeship program's learning objectives, rewrote the course outlines, and developed all teaching content. APOC worked closely with the Ministry and Algonquin College to ensure academic integrity and alignment with provincial standards. APOC and its training development team also worked closely with the in-house experts, company executives, and plant managers, as well as with other experts within the community.

The company came to the realization that for apprenticeship training to be successful, it was essential to quickly establish a solid relationship between the teachers and the students. Recognizing that they had savvy and knowledgeable employee-learners, the company sought quality teachers capable of developing and nurturing a strong mutual respect.

Because of shift work, it is a delicate balance to ensure that production demands are balanced.

To sustain its success, it is critical that the company establishes sustainable buy-in from all program participants—but especially from those who need assistance to improve their basic skills. Simply offering language, literacy, and numeracy training to individuals who need to upgrade their skills is not sufficient to garner participation. Individuals are encouraged to explore these available supplementary training options in a

non-threatening way. Positive messages about the training—passed word-of-mouth from employees who had already participated—also helped to bring individuals forward to ask for help.

OUTCOMES

In addition to a Microelectronic Apprenticeship Certificate from Algonquin College, students who complete the mandatory training program also earn 19 college credits.

Knowing that the company has invested in them, many program participants now feel a greater sense of loyalty to their employer. As well, those who are given the opportunity to earn their high school diploma develop a deeper sense of respect for their employer. As of July 2009, there were 16 employees working toward their high school certification, while 14 others had recently graduated.

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As a result of the training, employees feel a higher level of pride in their place of work. An enhanced understanding of their role within the organization provides insights on products, functions, the internal supply chain, and the need to reinforce quality, health, and safety requirements.

IMPACTS AND BENEFITS

As a manufacturer of medical diagnostic products, production quality and safety—of the employees and of the public—are always the top priorities. It is critical that employees understand the role they play within the organization and how they can contribute to its success.

Training is an important way for a company to successfully build confidence in its people. APOC strongly believes in capacity building at an organizational level, which requires not only investing in the building and the equipment, but also investing in its people.

APOC's training commitments have resulted in the following benefits:

- ◆ government-recognized Microelectronics Apprenticeship Certification Program;
- ◆ improved employee morale and a heightened sense of inclusiveness;
- ◆ better-qualified and more-adaptable employees;
- ◆ thorough understanding of the product process and the need for meticulous quality and safety standards, procedures, and processes;
- ◆ increased efficiencies in workplace operations (through a better understanding of the content and meaning of health and safety practices); and
- ◆ enhanced communication skills (written and spoken), numeracy, teamwork, critical thinking, and problem solving.

APOC prides itself on being a company that values a learning culture. Their training program fosters this belief.

USE AS A MODEL

In the manufacturing industry—where time and training are critical to consistent production outputs, quality, and workplace health and safety—taking the time to train employees is critical to overall corporate success. APOC prides itself on being a company that values a learning culture. The scope and scale of the training offered by Abbott Point of Care fosters and endorses this belief.

APOC's commitment to its employees—especially in redesigning the Microelectronics Apprenticeship Training Program to make it relevant to current industry needs—demonstrates an enviable collaboration with, and commitment from, not only its external partners, but also all levels within the organization. By ensuring that all employees receive training opportunities, APOC's efforts result in a skilled workforce. In addition, an engaged and trained workforce translates into improved efficiencies and a better understanding of production quality and safety.

About the Organizational Effectiveness and Learning Case Studies

The Organizational Effectiveness and Learning case studies examine outstanding education and lifelong learning programs and initiatives. This case study addresses the impact of workplace literacy and essential skills on employee safety and health.

Injecting Quality Into Production: Excellence at Abbott Point of Care

by *Linda Scott*

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