



# Building Nursing Pathways

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## Bellingham Technical College Nursing Program Technology Integration Report

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## Introduction

In fall of 2013, the Nursing Program at Bellingham Technical College (BTC) received a \$2.7 million Trade Adjustment Assistance Community College and Career Training grant from the U.S. Department of Labor. The goals of the grant project, called *Building Nursing Pathways* (BNP), were to enhance and expand the BTC Nursing Program to meet increasing demand in the region for Registered Nurses. The project included a substantial curriculum revision to create a streamlined Associate Degree in Nursing program, as well as an overhaul of clinical curriculum to better align with industry and educational partners. In order to fulfil these objectives, it was necessary to allocate grants funds for enhanced integration of technology into program curriculum, classrooms, and services. This integration of technology was designed to provide students with industry-standard technology proficiency and to create the foundation for life-long learning. This report provides brief overviews of the college, the program, and campus technologies, and then details the implementation of enhanced technologies for use by students, staff, and faculty in the Nursing Program.

## Bellingham Technical College

Bellingham Technical College is one of 34 colleges that are part of the Washington State Community and Technical College system. BTC is a state-funded, two-year college with educational programs in professional technical education, direct transfer with a workforce focus, basic education for adults, and continuing education. Members of the community turn to BTC seeking opportunities in many fields, from advanced manufacturing to accounting; process technology to pastry; registered nursing to radiologic technology.

## Nursing Program

The Nursing Program at Bellingham Technical College has been in operation since 1958, and has evolved since that time to meet the changing needs of industry. In recent years, the college has experienced an overwhelming increase in applicants for the Nursing program. In 2013, the college received funding for the Building Nursing Pathways project, intended to enhance and expanded Nursing Program offerings to meet demand and respond to emerging trends in nursing education and the healthcare industry.



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## Campus Technologies

An up-to-date and well-maintained inventory of campus technologies is available to students, faculty, and staff at Bellingham Technical College, and these resources provided a foundation for enhanced technology integration into the Nursing Program. In the Haskell Center (where program courses are offered), five classrooms are equipped with teaching stations with internet for use with didactic learning activities, and the building features a 30-station computer lab for student use. Additionally, students have access to computers and fully equipped study rooms in the BTC Library, and wireless Internet access (Wi-Fi) is provided across campus.

The BTC Library is open 60 hours per week, and provides 24/7 access to information services through the library website, including access to the online catalog, general electronic databases such as ProQuest and E-Library, and databases specific to the Nursing Program such as the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Science Full-Text Select. The BTC Library also has digital recorders, digital cameras, bones, radiographs, presentation clickers, a Microsoft Surface, a Kindle Fire, and a Chrome Book all available for student use.

Additionally, many technology support services are available to students, faculty, and staff at BTC, including Computer Boot Camps, Computer Support Services, and a Student Peer Technology Support Helpdesk. E-Learning support for students is available via dedicated email and phone lines, as well as through an online help ticket system. Face-to-face adjunct faculty orientations and regular faculty orientations include information and training on technology resources. The BTC website also features many how-to guides and tutorials for use of technology.

## Integration Emphases

Building upon the existing inventory of campus and program technology, the integration of new technologies into the Nursing Program through Building Nursing Pathways had three emphases:

- Integration into **curriculum** through implementation of an online learning management system, a secondary online learning platform, and electronic textbooks.
- Integration into **classrooms** through implementation of high-fidelity mannequins, an electronic medical records (EMR) system, and other specialty equipment.
- Integration into **services** through implementation of enhanced technology support for students.



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## Curriculum: Web-Enhanced Learning

The integration of enhanced technology into the Nursing Program curriculum has resulted in implementation of the online learning management system *Canvas*. Over the past two years, program faculty have worked with grant staff to migrate all Nursing Program coursework onto Canvas. As a result, all Nursing Program courses are now web-enhanced, and each course has its own Canvas site, which faculty use to post information, syllabi, homework, and discussions, send/receive mail, take assessments, and post grades. All exams are administered on Canvas to simulate a computer testing environment similar to NCLEX-RN testing. The learning management system also allows for access to external links and integration with other online learning platforms.

The integration of enhanced technology into the Nursing Program curriculum has also resulted in implementation of the online learning platform *Assessment Technologies Institute (ATI)*. The ATI platform allows for students to complete learning activities, take standardized tests, and review nursing skills videos to prepare for NCLEX-RN testing. The platform also allows for faculty to track student progress by quarter, in order to provide targeted interventions to support student success.

With the implementation of these enhanced technologies, the Nursing Program has also made all textbooks available in electronic formats. The combination of these enhancements provides students with a complete set of digital tools for a comprehensive web-enhanced learning experience.

## Classrooms: Simulation and Skills Labs

The integration of enhanced technology into the Nursing Program classrooms has resulted in the implementation of specialty equipment in the Nursing Simulation and Nursing Skills lab spaces.

The Nursing Simulation Lab was enhanced with high, medium and low fidelity human patient simulators, an A/V control room, computerized medication dispensing systems, and an electronic medical records system. These enhancements have expanded the patient care environment in the simulation lab to include birthing, pediatric, acute medical surgical, and skilled nursing areas. The sim lab provides a clean, state of the art, safe and realistic simulation environment for effective skills practice. Students now spend approximately 20% of their clinical time in the simulation lab implementing relevant scenarios. The implementation of simulation scenarios, accompanied by industry-standard equipment, encourages students to



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actively engage in problem solving, care coordination and decision-making—reflecting primary skills which employers have identified as necessary for new RNs.

The Nursing Skills Lab was enhanced with a video capture/playback system, computerized medication dispensing systems, and an electronic medical records system. The skills lab has fourteen hospital beds, a nurse station, mannequins, and other equipment to allow students to practice foundational skills. The video capture/playback allows students to record procedures to allow for repeated viewing, self-evaluation, instructor feedback, remediation planning, and increased skill competence. The computerized medication dispensing systems and electronic medical records system prepare students to use industry standard systems in healthcare.

These enhanced technologies have transformed the Nursing Simulation and Nursing Skills lab spaces into state-of-the-art facilities, which together provide an ideal environment for students to learn safe practices, gain competence with skills, and develop mastery.

## Services: Integrated Support

Another key component of the integration of enhanced technology into the Nursing Program at Bellingham Technical College has been assuring that students have the support needed to be successful in using new technologies. Building on the technology support services already offered by BTC, the Nursing Program developed its own technology training specific to the online systems and tools used in the program. This training has been integrated into the orientation required for new students entering the program.

Additionally, the Nursing Program is supported by instructional technicians who work with students in the computer, simulation, and skills lab areas. These dedicated program staff are available to assist students with troubleshooting and to provide training on advanced technology functions.

These integrated support services ensure that all Nursing Program students are equipped with the resources and skills to be successful in using new technologies integrated into the program.



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## Resources

Assessment Technologies Institute (ATI)

BTC Nursing Program

Canvas

EMR systems: <http://hiteducation.org/hew-member-college-resources/emr-simulations/>

Medication dispensers: <http://www.metro.com/automated-dispensing>

Patient simulators: <http://www.laerdal.com/us/nav/207/Patient-Simulators>