Centre for
Learning and Teaching
focus
on university teaching and learning

Note From the Director

We are increasingly faced with new challenges in teaching and learning in higher education necessitating change in our mindsets and approaches. This edition of Focus presents examples of faculty leading change in their teaching to positively impact how students learn, practice their profession, and live their lives.

Suzanne Le-May Sheffield, Ph.D.
Director
Centre for Learning and Teaching

DALHOUSIE UNIVERSITY

Leading Change for a Sustainable Future: Dalhousie University's College of Sustainability

Susan Tirone, Ph.D., Professor and Associate Director, College of Sustainability

Social and environmental change is at the heart of the mission and goals of the College of Sustainability. Since its launch in 2009, the College of Sustainability offers a unique undergraduate double major in Environment, Sustainability & Society (ESS). Students integrate studies in degrees from all parts of the university with our educational model that prioritizes strong analytical and leadership skills. We aim to develop students who will become leaders and engaged citizens, capable of leading change initiatives that are necessary for ensuring a sustainable future.

In the 2013-2014 academic year, students from 42 different programs across the Dalhousie University campus participated in our ESS courses. Teamwork forms an important part of most ESS courses, with students working in interdisciplinary teams to create and implement new ideas to address sustainability challenges. Our courses are designed to teach and guide students through problem-based learning approaches and most courses offer applied, community-based experiential learning opportunities.

For example, the ESS curriculum includes Internships, a fourth year Capstone course, an Honours thesis option, and the RBC Sustainability Leadership Certificate program (RBC SLC). To date, approximately 120 Interns, 80 Capstone students and 60 RBC SLC participants have completed these courses. More than 600 students are enrolled in ESS courses for the 2014-2015 year.

Examples of Student Led Change Initiatives

Students in ESS and in the RBC SLC have created many exciting team and individual projects that are contributing to change at Dalhousie University, in the local Halifax community, and across the region. For example, for her Internship course Mhari Lamarque worked on a food

waste project at Capital Health. Her work led that organization to adopt vermicomposting as a way to deal with food waste, reduce costs, and benefit the Common Roots Urban Farm. ESS Internship students Jaida Regan, Colin Charlton, and Meaghan McLaughlin compiled evidence to support a local filmmaker who will use their project in the production of her documentary film on the decline of the arctic wolf population in the Canadian North.

Leadership for change is a central component of our programs in the College of Sustainability. In 2010 the College was a successful applicant in the 2010 Student Engagement Initiatives grant competition sponsored by CLT. The program, now known as the RBC Sustainability Leadership Certificate program, was meticulously designed to guide participants through an inductive process of introspection, community building, and leadership development. The intent of the RBC SLC is to prepare students to lead change in their work, at school, in their homes and in the communities where they live to contribute to a more socially and environmentally sustainable future.

The SLC program is open to all Dalhousie University students and graduates who have completed at least one of the first year courses in the ESS program or AGRI 1000, or those students who have comparable understanding of sustainability as a result of jobs or academic courses in environmental studies from another university.

The program consists of three weekend training modules held in October, January and March each year. A theme of story telling, story collecting and learning from our own stories and the stories of those around us are used as a unifying thread throughout the program. The written assignments provide the opportunity for students to reflect on how their own personal stories about sustainability transform, or remain static, as the program evolves. We ask students to write about what they are learning, their successes and mistakes, what questions remain in their minds as they move through the program, their views on the learning process, and on leadership for change.

Between the modules students are required to complete two action projects. The first project requires students to collect stories of leadership from six community leaders who are involved in environmental and social change initiatives. The second project requires students to create and lead an action toward social or

environmental change. Students may work on a personal action or one that involves other people. The student led actions are the focus of Module 3, a time when participants share the activities they created and led.

The students who completed the RBC SLC during its pilot phase developed a wide variety of action projects to address sustainability changes at the personal or community level. For example, Shauna Doll hosted a one-day event she called The Mender Blender Upcycle Café. At this event, held in a church hall, local residents were invited to participate in a variety of activities designed around sustainable consumer products. For example, the Café hosted a clothing swap, an opportunity to learn about building solar panels, a bicycle repair shop and a workshop on how to make natural body care products. RBC SLC participant Jonathan Lampier used the guidance of the program leaders to work with his colleague Stephen Cushing to develop UP-- Urban Perspectives, a landscape architecture and urban planning company specializing in urban forest planning, urban design, community engagement, and research and report writing.

Throughout the Environment Sustainability and Society program and the RBC Sustainability Leadership Certificate program, students are actively engaged in learning to lead the change required for a sustainable future. The College of Sustainability is pleased to host them in their studies.

Office of Sustainability @ Dalhousie

The Dalhousie Office of Sustainability engages and encourages students, staff, and faculty in practicing sustainable behaviour. The Office incorporates sustainability concepts and criteria into policy and planning, building and retrofit projects, and campus operations.

Central Services Building, 5th floor

1236 Henry Street

Halifax, NS B3H 3J5

rethink@dal.ca | 902-494-2015

http://www.dal.ca/dept/sustainability.html

eLearning @ Dal

The eLearning team at CLT offers eLearning advice and support to the Dalhousie community. With two experienced instructional designers, the eLearning team is available to offer guidance with both online and blended/hybrid course initiatives.

The CLT eLearning team can:

- provide general consultations about online and blended/hybrid course design and development;
- demonstrate how to integrate Dalhousie's institutional educational technology into classes;
- give advice on the effective and pedagogical use of educational technology;
- offer workshops that demonstrate and practice effective uses of eLearning in online course spaces;
- support and guide faculty and staff with the creation of online course content and interactive learning strategies; and
- work with the Instructional Technology unit to troubleshoot issues with online course spaces.

Contact the eLearning Team

Aaron Panych, M.Ed. (DE)
Online Instructional Designer
(902) 494-1224
Aaron.Panych@dal.ca

Adrienne Sehatzadeh, MA, MEd
Instructional Designer
(902) 494-3634
Adrienne.Sehatzadeh@dal.ca

Interactive Video Learning Modules: Teaching Real-time Clinical Reasoning Skills

Left: Brenda Merritt, PhD, OTReg(NS)
Associate Professor, School of Occupational Therapy
Acting Associate Dean (Academic), Faculty of Health Professions

Right: Diane MacKenzie PhD, OTReg(NS)
Assistant Professor, School of Occupational Therapy
(Cross Appointments: Medicine, Physiotherapy & Health and Human Performance)

Clinical reasoning is a challenging process to define, teach and learn. The teacher must first guide the novice clinician to develop the connection between content knowledge and observation skills in order to initiate the clinical reasoning process en route to forming a decision to select and deliver the appropriate intervention. One of the key features driving the ability to initiate clinical reasoning skills is the ability to accurately observe key points and to develop pattern recognition strategies. Findings from radiology studies (e.g., Kundel et al., 2008) indicate that experts often demonstrate observation abilities that allow them to attend to key features in static pictures more quickly, make correct decisions more expediently, and are more confident with their choices, in comparison to non-experts. These experts have had the opportunity over time to develop their knowledge and pattern recognition strategies to direct their selected attention to locations they should look at in order to assess the situation and make a decision (e.g., Gegenfurtner, Lehtinen, & Saljo, 2011).

One of the challenging features of teaching observation skills in occupational therapy is that the observation arena is not in a static state. Best practice occupational therapy requires that therapists observe individuals as they perform everyday life tasks in their natural environments. While the natural environment provides an ecologically valid assessment opportunity and can guide intervention selection, the dynamic nature of the interaction creates many distractions for the novice learner/observer. These distractions can affect the learner's ability to effectively draw their attention to the key features required for efficient development of their own observation and pattern recognition experience needed for decision-making. Competent, real-time clinical decisions require proficient observation skills coupled with the ability to quickly interpret observations, generate possible clinical choices, and then reason through the options to arrive at the most appropriate decision for safe client care.

A key aspect for developing this real-time clinical reasoning repertoire is to provide opportunities where learners can observe a clinical scenario, make a decision, and then experience the outcome of their clinical decision - without risk or harm to the client. This type of clinical reasoning is often difficult to engage in in a typical paper case study or with the static images often used within a classroom or lab setting. Virtual patient cases have been shown to be more effective than written case scenarios in developing clinical reasoning and decision making skills among health profession students (Bergin, & Fors, 2003; Cook & Triola, 2009; Ellaway, Candler, Greene, & Smothers, 2006; Kamin, O'Sullivan, Deterding, & Younger, 2003). The use of virtual patients enables the learner to make on-the-spot decisions and ultimately discover the consequences of their decisions. Allowing students to make errors and immediately observe the impact of their incorrect decisions in a safe environment has been shown to enhance the learning process (Kassirer, 2010). Additionally, video case studies have been shown to be advantageous over paper cases and computer simulations (Adams, et al, 2011; Balslev et al., 2010). While students often share engaging and reasoned discourse with their peers and instructor regarding their intervention choices - they are missing the ability to see how their decisions may directly affect client outcomes. Reflecting upon the possible positive and negative outcomes of clinical decisions can foster a deeper learning process and the development of expertise, but

this valuable learning process cannot and should not negatively impact client care.

Recognizing these challenges, Drs. Diane MacKenzie and Brenda Merritt have begun developing a series of interactive video learning modules (VLMs) aimed at helping learners safely develop their observation and clinical reasoning skills. The VLMs allow the learners to observe a video of a short clinical scenario and then select their next course of action from a menu. The selected decision triggers the next video, allowing the learner to directly observe how their clinical decision would unfold in a clinical setting. The critical piece is that the students may not fully understand the dynamic nature to the answers presented in each scenario. They may be able to reason from content knowledge, but they do not have the observation experience to understand what it would look like in practice if they selected the wrong answer. In essence, the learners get to "choose their clinical journey" through making a series of decisions and watching the respective resulting video vignettes. This experience not only allows the student critical feedback regarding their clinical reasoning and decisions, it also provides the student with a safe learning opportunity prior to interacting with clients during their fieldwork experiences. To further enhance learning, students can start the video module over to better understand the consequences of the other clinical decisions. Thus, students get to safely observe the impact of making optimal and less than optimal decisions. The VLMs have the capacity to support students across the curriculum as they learn, acquire, and advance their pattern recognition and clinical-reasoning skills, from the level of a naive novice preparing for fieldwork through to an entry-level practitioner. Furthermore, the VLM structure can be applied across practice content, user groups and communities of practice.

The video segments were developed and scripted in a similar fashion to the development of standardized simulated client interactions, where each script included a short case scenario that required reasoning to arrive at a specific intervention option. Within the scripted scenarios, best-practice, less than optimal, and ineffective and/or unsafe clinical decisions were presented as options to the students. Of note, a simulated client was used in the VLMs so that the demonstrated unsafe scenarios (e.g., client injury from a fall

or mishandling) provided the learner with observation experience without harm to a real client.

MacKenzie and Merritt piloted the use of VLMs within their respective year two and one MSc(OT) courses within the classroom setting. Students selected their choice of intervention using a classroom response system, and faculty facilitated discussion regarding the clinical reasoning. Initial evidence indicates that students have positive perceptions of the VLMs and believe that they are valuable learning tools that enhance classroom engagement, development of clinical reasoning skills, reinforcement of learning, and preparation for clinical fieldwork courses. In comparison to other teaching strategies, the students responded more favourably to the use of VLMs, when compared to paper case studies. The students found equal value to using the VLMs and group discussions which reinforces the concept that reflective practice is also required to understanding and developing clinical reasoning required for decision-making. Evidence from the pilot project supports the use of VLMs in concert with existing teaching and learning strategies (e.g., small group discussions, lab simulations).

MacKenzie and Merritt are currently collaborating with occupational therapists from the Nova Scotia Rehabilitation Center to create a series of VLMs aimed at developing clinical reasoning skills in the area of stroke rehabilitation. This area of occupational therapy practice requires the students to understand and observe how a person's ability to complete a functional activity safely is affected by a multiple system impairment (e.g., visual, cognitive, perceptual, motor, sensory, etc.). This series of VLMs will be utilized within Dalhousie MSc(OT) courses for pre-licensure clinical reasoning education, and has potential for continuing education opportunities with practicing occupational therapists.

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Luddites Can Lead Online Classes Too

Jeff Wilson,
Assistant Professor,
School for Resource and
Environmental Studies,
Adjunct Professor, Rowe
School of Business and
Department of International
Development Studies

An n of 1 is not a good sample size. Caution be noted. I suspect, however, that my reflections on launching an online class this past year may resonate with some of you. Why? For starters, I am an unlikely candidate to lead an online class. I would define myself as someone more suited to the record player and rotary phone era. I don't Facebook, blog or tweet and yes, I like to use a bank teller. A year and a half ago, I doubted the merits of online teaching. I considered online teaching to be akin to the box of audiotapes mailed out by the correspondence education departments. It was not 'real' teaching. I love the classroom. My steadfast assumption was that building relationships, engaging students in discussions, leading activities, sharing humour and communicating enthusiasm depended on face-to-face contact. It's clear now, that I was wrong.

I also assumed online courses served only a small niche market, not true. The number of students taking online programs and online courses is staggering and expected to grow. A 2012 study by Contact North, Ontario's Distance Education and Training Network, reviewed online learning at the post secondary level in Canada, and estimates there are 875,000-950,000 registered online students in Canada. Moreover, online classes can increase enrolment. They better support working professionals, students balancing job commitments, students with families, and many other students who would normally be marginalized from the traditional university experience. They can be offered without bricks and mortar. They retain students who take classes at other institutions during the summer months or while on co-op terms or abroad. But most importantly, from my perspective as a teacher, case study reports in the literature and student surveys consistently indicate learning outcomes are on par with face-to-face classes (Bowen & Lack, 2010; Carey & Tick, 2013; Figlio et al., 2010; Kaznowska et al., 2011).

I was tasked to develop and teach a new class integrating issues of economics, sustainability and distributional justice. The class, INTD 3012, entitled 'Sustainability, Development, and Economy,' offered a one-term introduction to economics from a sustainability perspective for undergraduate students who have little or no prior exposure to economics, but who have completed one or more classes in international development, ESS, environmental science, or related programs. The development of the class was funded through an academic innovation grant.

Developing an online course is much more than recording your lectures or posting your slides. The audiotape concept of distance learning is long gone. Students today would not tolerate it, nor should they. No matter how good you are, recorded lectures do not come across as Ted Talks. However, you can be incredibly creative with the online platform. I shifted to a twenty minutes, or less, lecture model and emphasized other forms of learning.

I also assumed an online course would require more preparation time than a live class and would essentially run itself once launched. Wrong again. Yes, there is more investment time up front. It does not, however, run itself. My role shifted away from being a central figure communicating information to students, towards a facilitator of individual and peer learning. The new role was not a passive one. To build a sense of community requires that you maintain an active presence on your site and find avenues to communicate and engage with your students. I had success using the discussion boards and posting a weekly check in. I also held online office hours.

Students actually did learn and engage. I found the discussion groups a very useful means to encourage peer learning and to emphasize collaboration. I was impressed with the caliber of the posts and the level of engagement from my students. I find that in the classroom a small cohort of confident individuals comfortable with speaking up become the few dominant voices. My guess is that the veil of the computer reduces participation anxiety felt by some students in a classroom setting. Typing their contributions also gives students an opportunity to edit their thoughts before committing them to the scrutiny of their peers and the professor. This results in more honest reflections

on class material and better learning opportunities for students. In a couple of instances, I had students in my online class whom I had taught previously. I was surprised by a few who I assumed to be shy or unengaged, but they thrived through participation in discussion boards. I was so impressed with the discussion format that I have now adopted an online discussion component for my face-to-face classes.

It is possible to gauge your class remotely. You lose the real time feedback of body language and class atmosphere, but you make up for it in other ways. I adjusted by monitoring the tone and excitement in discussion posts and making an extra effort to solicit feedback. I set up an anonymous discussion board for students to provide feedback. I also set up an anonymous midpoint survey seeking feedback about course format, content and direction. I conveyed the importance of feedback to me personally but also in the context of this being a new course. Beyond receiving constructive input, encouraging feedback creates a sense that you care. I modified my course after receiving the midpoint feedback to simplify the group discussion process.

My last point is a reiteration of my first point. Launching an online class is not simply uploading lectures and slides. A shift to online classes and programs requires institutional support and leadership backed by sufficient resources. Currently, there is no incentive for professors to put in the time to redesign their courses. Further, many professors need training and technical support to prepare for online course delivery. My online class offering would have been a disaster had I not received course design support from the Centre for Learning and Teaching.

Resources aside, a bigger challenge going forward will be motivating professors to change what they are familiar with and good at. My guess is that the classroom resonates for most professors. I love engaging with students in a class. I can read a room, I understand how to build energy and excitement. Online classes are a different format that requires some getting used to. You communicate differently and it is more difficult to gauge how students are doing. Unfortunately, there is less room for spontaneity and real time feedback, but for all the disadvantages, there is a window of opportunity. I experienced a steep

> *A shift to online classes and programs requires institutional support and leadership backed by sufficient resources.*

learning curve. The climb, however, offered me a chance at becoming a better teacher.

I try to instill in my two young children, the importance of trying new things. Taking calculated risks and experimenting encourages learning moments. For my children it is usually in the realm of new foods, doing a summersault or trying to swim underwater. I also try to be a dad who leads by example. Teaching an online class was something new and scary. It was also fun. The bumps and hiccups contributed to the learning experience. I tried, and Luddites, if I can do it, you can do it. If that doesn't motivate you, I will take Bob Dylan's approach (it may resonate better with Luddites) and say, "the times they are a changing".

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University-Wide Teaching Awards
Call for Nominations

Dalhousie Alumni Association Award of Excellence for Teaching

Nominees for this award will normally have ten or more years of teaching experience.
Candidates must be full-time faculty or instructors at Dalhousie University,
and demonstrate outstanding teaching and educational leadership.

Award Includes: $2000 towards professional development

Educational Leadership Award for Collaborative Teaching

Presented annually to recognize the collaborative work of a team of colleagues whose leadership has made a significant contribution to student learning at the department, faculty or institutional level (primarily at Dalhousie but also beyond the institution). The award is open to all Dalhousie University faculty members, including department chairs and deans.

Award Includes: $3000 to support the department or faculty leading the initiative

Contract and Sessional Instructor Award of Excellence for Teaching

Candidates may be either full-time contract/term or part-time members at Dalhousie University. While there is no rigid criterion for length and breadth of service at the university, a teaching record extending over several years and including the teaching of more than one course is expected. Nominees shall normally be teaching at least one course at Dalhousie in the term of nomination.

Award Includes: $500 per recipient

President's Graduate Student Teaching Award

The Dalhousie President's Graduate Student Teaching Awards are open to all qualified graduate student instructors (currently registered Master's and Ph.D. candidates), including previous nominees (but not previous recipients).

Award Includes: $500 per recipient

New Teaching Awards

Early Career Faculty Award of Excellence for Teaching

Nominees for this award will be early career faculty with a minimum of three years teaching and fewer than ten years teaching experience in their current role.

Award Includes: $1000 towards the professional development of the recipient

Award for Excellence in Graduate Supervision

Excellence in graduate supervision is recognized as the successful mentorship of graduate students through an enriching, supportive and productive learning environment. Nominees shall have at least ten years supervision experience at the graduate level.

Award Includes: $1000 towards the professional development of the recipient

Academic Innovation Award

This award is for an individual who has developed an innovation that has resulted in a sustained impact on student learning at Dalhousie. It may include innovations in course or curriculum design, development or application of tools or technologies, or the development or application of innovative methods or learning experiences to enhance student learning.

Award Includes: $2000 to the individual towards either a future innovation project related to teaching and learning or the ongoing evaluation of their current innovation

Award for Excellence in Education for Diversity

This award will be presented to a teacher who has enhanced the Dalhousie teaching and learning environment through excellence in education for diversity.

Award Includes: $1000 towards the professional development of the recipient

Award Announcements

New annual January 31 deadline to submit

New online submission process

New criteria has been developed for existing awards to better align them with regional and national teaching awards criteria

New awards have been added to support the diverse teaching excellence at Dalhousie

For additional information contact the Centre for Learning and Teaching

clt@dal.ca | 902-494-6641

www.learningandteaching.dal.ca

Use of Advanced Learning Technology to Teach a Newly Designed Wireless Sensor Networks Course for Computing and Engineering Students

Zahoor Khan, Post-Doctoral Fellow Internetworking Program, Faculty of Engineering, Dalhousie University

Currently Faculty Computer & Information Sciences Division, Higher Colleges of Technology, United Arab Emirates

In recent years, the wide variety of potential applications for using wireless sensor networks (WSNs) has resulted in researchers developing new techniques in this emerging field. WSNs were initially used in the battlefields and remote areas for military purposes. Currently, various processes are monitored and controlled by WSNs in civilian areas. A typical WSN contains multiple autonomous sensor nodes and a base station. Sensor nodes are used to gather and transfer the data wirelessly to the next receiver node or directly to the base station. Due to the multi-disciplinary nature of WSNs, it is equally important to the students of different Engineering (e.g. electrical, communication, computer and internetworking) and Computer Science areas. Over the last decade, the increasing demands of industry have required universities to train new professionals to meet the needs of today's IT world. To address these needs, I have designed a new course that enables students to explore WSNs, including providing students with necessary practical programming skills. I designed this course to fulfill the Teaching and Learning Project component of the Certificate in University Teaching and Learning. This project gave me the opportunity to investigate best practices in supporting student learning in this context.

Authors in [1] proposed the curriculum for a new RF and microwave course. This one semester course contains laboratory and theoretical components. A blended approach with the combination of face-to-face learning and e-learning was adopted to overcome the main problems: Laboratory hands-on experience issues, the need for implementation of new technological tools, and the need for new instructional approaches. The paper [2] presented the design and development of a web based learning mechanism by using MS FrontPage. The study [3] suggested teaching writing in a laboratory-based engineering course by using the How People Learn (HPL) [4] framework. The HPL framework motivates student learning by contents. HPL is used for teaching written communication, including higher-level writing skills such as argumentation and coherence, to improve science and engineering instruction. The paper [5] described the designing of a network and systems computing curriculum with the consideration of the declining behaviour of student enrolment in the areas of Information Technology and Computer Science. The curriculum was in accordance with Victoria University's new policy in which existing undergraduate computing programs should be replaced by a single, new, three-year offering in network and systems computing. The study in [6] presented a new method of developing a course, Course Development lifecycle (CDL). CDL is based on Software Development Lifecycle (SDL), a commonly accepted method of addressing the need for structured teamwork and how it supports the development process through computerisation with Computer Aided Software Engineering (CASE) tools. CDL works in four phases: develop learning outcomes, match outcomes with resources, assemble resources, and evaluate the course. Authors in [7] described the use of PARTOV (Portable And Reliable Tool for Virtualization) simulation engine as a teaching tool for a computer networks course.

The teaching and learning approaches I selected were chosen to motivate and inspire students to achieve the goals of this course that included teaching students the required programming skills needed in this field. The proposed course contains both laboratory and theoretical components as used in other similar courses [1]; however, I chose to take a different approach to practice and assessment due to the specific requirements of the wireless sensor network field. WSNs differ from other wireless networks in seven main areas. The seven areas described in Akyildiz et al. [8] are network size, node density, node proneness to

failure, changes in topology, communication modes, resource limitations, and node identification. The focus of this course is to provide students with a solid understanding of programming, wireless networks and sensors, and then to use these concepts to work in a WSN environment. To accomplish these goals requires intensive hands-on experiences including: exercises, projects and exams. It would be difficult to work on later parts of the course if a student missed an initial part. As a result of these needs, students are required to learn a programming tool that simulates a wireless network and ideally, students would have access to a specialized computer lab style classroom so the instructor can be on hand to assist students as needed. Each student in the class should be able to access a computer during class time in order to complete practice examples or other programming-related tasks as outlined by the instructor. To fulfill the special needs of this course, the assessment part was carefully designed to include class exercises, assignments, projects, and exams (computer and written). The use of improved methods of e-assessment and feedback assists students in meeting the learning requirements.

Some of the challenges faced in computer programming courses are: 1) motivating students to do practice exercises, 2) tracking student progress, 3) using a mechanism to prevent plagiarism or students copying results from class mates, 4) explaining concepts in different ways, 5) providing students with instant feedback, 6) allowing students to correct errors and resubmit, and 7) providing the same environment for the exam. To overcome these challenges, a special online learning tool, MyProgrammingLab, will be used for course exercises, projects, and computer exams for the programming part of the course. (Students will be required to take a few steps to register to use the tool.) The online tool "MyProgammingLab" is used for student exercises and projects. MyProgrammingLab [9] provides a facility to practice programming of WSNs through an interactive online programming environment as shown in Figure 1. The icons like PREV and NEXT allow users to jump from the current problem to a previous or future one. This feature provides users with the flexibility to modify previously entered solutions and make the appropriate changes according to the hints provided by MyProgrammingLab.

Students then write the code in the space "Type your solution here…" and click on submit. A simple example is given in Figure 2, in which the user is asked to write a program as per the given statement. The user writes the code in the area below "submit". For understanding, we wrote an incorrect code "while (". After clicking on submit, a new screen "Results" is opened as shown in Figure 3.

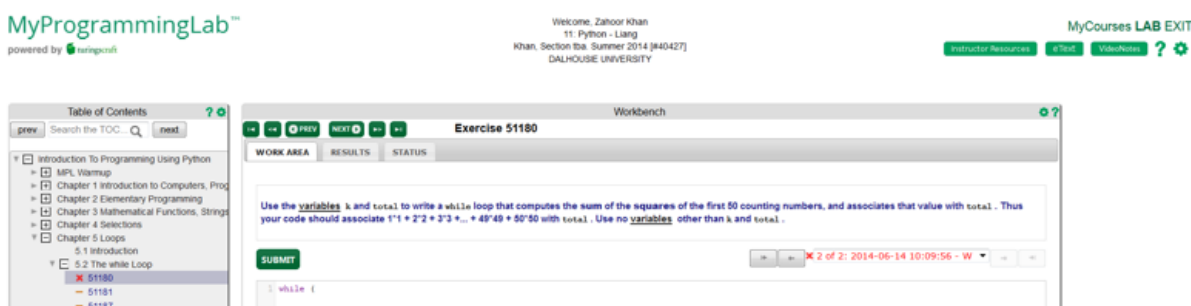Figure 1: Interactive programming environment

Figure 2: Work Area screen

The "Results" screen shows the codelab analysis, your submission and compiler error messages. The codelab analysis provides the suggestions in the form of remarks and hints for correcting the code, and asks the user if more help is needed. Figure 4 shows the "More Hints" page, where detailed suggestions are given to the user. Figure 5 shows the status screen which displays the results of the question.
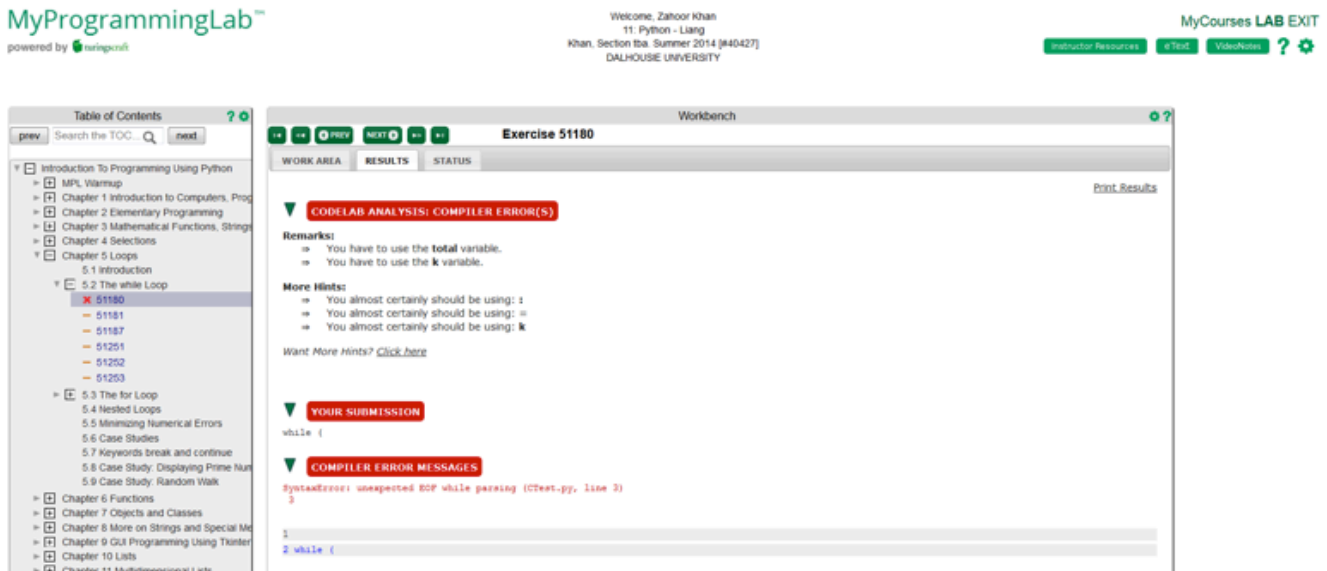
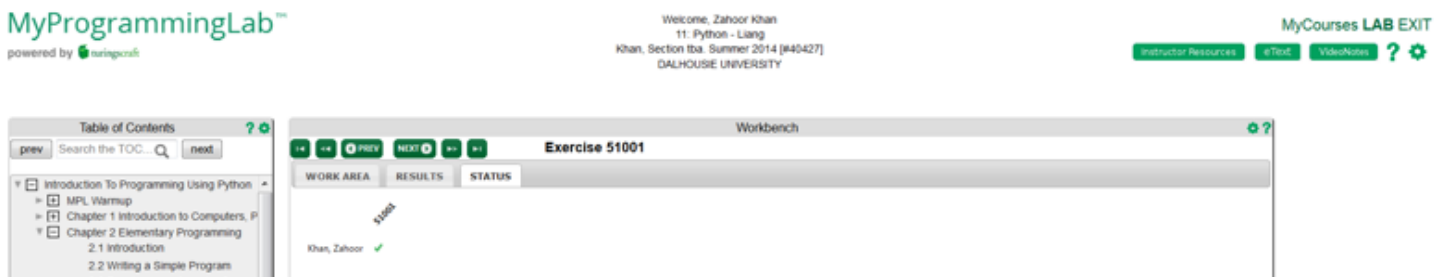

Figure 3: "Results" screen example

Figure 4: "More Hints" screen

Figure 5: "Status" screen

During students' programming practice opportunities, MyProgrammingLab provides quick personalized feedback support. A utility to explain the difficult concepts in step-by-step video tutorials offers extra help. The dynamic grading and assessment feature allows students immediate learning opportunities. A powerful homework and test manager helps instructors to create, import, and manage online exercises, assignments, quizzes and tests. The robust gradebook tracking offers the automatic

tracking of students' results on practice exercises, assignments, and tests. Class exercises support and guide students' learning. The feedback provided by MyProgrammingLab and by the instructor enables the students to improve their performance. Computer and written exams are used to evaluate learning. The e-assessment and feedback approach gives the students the opportunity to improve their skills.

In summary, the use of "MyProgrammingLab" encourages students to learn by offering a safe and well-supported environment. The auto record keeping of students' performance helps the instructor and the students to track their activities. MyProgrammingLab is used not only to provide a platform for writing and submission of students' reports, but also provides students with practice opportunities and immediate feedback on their learning progress.

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Congratulations to the 2013 - 2014
Dalhousie University-Wide Teaching Award Recipients

Left to right: Brad Wuetherick, Dr. Anne Marie Ryan, Dr. Roberta Barker, Josh Goreham, Dr. Jin Yue, Grace Murphy, Jennifer Frail-Gauthier, and Dr. Lloyd Fraser.

Missing: Alana Westwood.

Dalhousie Alumni Association Award of Excellence for Teaching
Dr. Roberta Barker, Department of Theatre

Sessional and Part-time Instructor Awards of Excellence for Teaching
Jennifer Frail-Gauthier, Department of Biology
Dr. Jin Yue, Department of Engineering, Faculty of Agriculture

Dalhousie University Educational Leadership Award
Dr. Anne Marie Ryan, Department of Earth Sciences

Dalhousie University Educational Leadership Award
Joshua Goreham, Department of Kinesiology
Grace Murphy, Department of Biology
Alana Westwood, Department of Biology

Video Production Services

Findlay Muir, Manager, Classroom Planning and Technology / Video Production

Video production service is not new to Dalhousie University. In fact, the production unit that is now a part of CLT, has been in existence since the early 1970's. Much has changed since those early days of massive tube cameras and a control room full of equipment. It now seems that anyone can shoot their own video. Even smartphones are capable of producing high quality, high definition video nowadays. So why hire a production professional?

Just ask anyone that has had an idea for a quality video and has tried to do it on their own. Likely they have learned the hard way, or at least quickly, that it's not as simple as it looks. The quality of the work largely depends on how solid your idea is and the level of talent you have at your disposal. Operating the camera, the lighting, microphones, an editing system and the skill of the videographers to translate your idea into an effective teaching and learning tool, takes time and practice.

The goal of the video production service at CLT is to produce quality videos at a price point attractive to faculties or units who find they want to go beyond the basics to the next level of production. The value of having skilled operators and the creative talent to bring all of the elements together results in a polished production that clearly illustrates the vision of the producer, whether you are creating an online video for a blended class or online course, creating an educational video based on research findings, or streaming a live presentation.

Video in e-learning is a critical tool that generates significant impact, moreso than text alone or even accompanied by a still image or animation. Videos provide a level of engagement in the asynchronous e-learning environment and can be effective in multiple ways. For example, showing a demonstration of a science experiment, such as a chemical reaction in a test tube in a live classroom of 500 of more, would simply be lost without the visual experience. Or, in a music class, where the instructor is illustrating fingers on a fret board, an online student needs the visual and the auditory experience. For the student having the ability of viewing a video, multiple times if they wish, helps reinforce ideas and learning outcomes.

Faculty have long realized the power of video and the CLT team has shot everything from lectures to research related material for scientific video journals, news stories that have been broadcast locally and around the world, and promo and informational pieces. The production unit at CLT also assists students who have an idea for a video but little prior experience. We have enjoyed working with the student producers, as we experience shooting and editing their ideas that has often been challenging and enjoyable for the whole production team. Now, more and more students are using video as a medium to present their ideas in class or on-line, with some shooting their own material and coming to CLT with the raw video to take advantage of editing facilities and expertise with complex editing software. If you would like to know more about producing a video, please visit the CLT website/video production and take the time to read our article entitled "So you want to make a video".

We often hear that playback of a video in class has failed. Playing a video from your computer requires a fast drive that is not always part of the computer hardware. So any playback has to be formatted properly, another key services offered by the CLT production team. Also, videos depending on the end use, may have to be delivered in multiple formats requiring reformatting or DVD duplication, another service that CLT video production offers.

Recently we have seen an increase in the demand for streaming video live. This is not as difficult as it sounds and it doesn't require much in the way of expensive tools or software to accomplish. For the last six months we have been testing a box that simply sits on top of the camera, takes the output of

the camera into the box which is also connected via a LAN connection, then streamed to a site dedicated to playing back the video. Yes we had to create an account, username and password and yes, guests have to do the same to sign in, but the results are nothing short of amazing, no stuttering or dropped frames, just smooth video all the way through a lecture or

event being streamed. Of course having professional cameras and operators contributes to the overall success of these events.

Whatever your interests or requirements in video please call us and we will happily consult with you about your project. In the coming weeks watch for some clips of our work on the CLT website.

Contact the Video Production Services Team

www.dal.ca/vps

Findlay Muir
Manager
902-494-8450
Findlay.Muir@dal.ca

Roger Brush
Video Producer
902-494-6822
Roger.Brush@dal.ca

Spencer Cantley
Videographer
902-494-6822
SCantley@dal.ca

Change One Thing Challenge

Attention Faculty, Instructors, and Teaching Assistants

The Centre for Learning and Teaching challenges you to share your student engagement activities

Two Conference Travel Grants up to $1000 each will be awarded!

The *Change One Thing Challenge* is an open invitation to the university teaching community to submit a description of a student engagement activity that has been developed within the last 24 months and is part of their current teaching practice, and had a positive impact on student learning.

Benefits for the Winners

- Winners will receive a Change One Thing Challenge Grant for up to **$1000** to support travel to a teaching and learning conference.

- All applicants will be invited to present at the Dalhousie Conference on Teaching and Learning to be held in **April 2015** at Dalhousie University.

For more information and to submit an application visit learningandteaching.dal.ca

Deadline for proposals: Monday, February 23, 2015

CLT

Centre for Learning and Teaching
Dalhousie University
Halifax, N.S. B3H 4R2