

The Future of Teaching & Learning

THOUGHT PAPER FROM A DALHOUSIE UNIVERSITY SELF-STUDY



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FUTURE OF TEACHING & LEARNING SELF-STUDY TEAM CO-LEADS

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1. Executive Summary

Dalhousie University was founded on the idea of being open to all, regardless of status or beliefs. While we now know, based on the *Report on Lord Dalhousie's History on Slavery and Race* (Cooper, et al., 2019), that being open to all carried a narrow definition in 1818, the concept is a goal to strive for, with the university pushing towards becoming a truly inclusive institution. With this as a guiding principle, we can explore what the future of teaching and learning will look like for Dalhousie.

As we look to position ourselves on the leading edge of teaching and learning, we should capitalize on our existing strengths. As a small institution with a big reputation, Dal has the advantage of being approachable while still offering the benefits of a research-intensive, “big school.” Its broad range of programs and research areas, along with a diverse student body and variety of international connections, makes Dalhousie an attractive choice for scholars seeking a rich academic experience. The institution has a long history to draw from while still having room to grow in new areas. It can use the expertise it has developed over the past 200 years to move into new territory, such as an online campus and expanding the use of its rural campus. As the recent response to COVID-19 has highlighted, Dal is capable of acting quickly and efficiently to be adaptable in the face of change. These events have emphasized the need for being ready for the future, and it is clear that we are ready for the challenge.

The future of teaching and learning is being shaped by many factors. Key among these are changing student expectations as they adapt to life in the Fourth Industrial Revolution (4IR). Today's world is constantly changing and evolving, with new technologies and industries being created all the time. Today's students need the skills to be able to continue to adapt to change over the course of their lives and careers and are looking to higher education to help them acquire these skills, as well as for upskilling and mid-life career changes. Additionally, factors around climate change and the desire for open education must be considered. The university must look at how it exemplifies best practices in both of these areas as it moves into the future. Finally, within Dalhousie, there is a strong desire for a unified, “One Dal” approach, where students, faculty and staff alike feel that they are part of one community regardless of location. There is also a strong desire for teaching and learning to be equitable and inclusive for all learners.

As the university first seeks to meet the changing needs of its learners, it is recommended that online, multi-access, and blended learning opportunities be explored. This would serve to both increase access to education, while making it more inclusive, as students can learn in an environment tailored to their needs. Additionally, meaningful experiential learning opportunities should be explored to give students a “real world” connection to the impact that their chosen discipline can have. Finally, being purposeful in ensuring diversity, both within the student body and within the faculty, along with ensuring that students leave the university with a holistic package of durable life skills, will ensure that Dalhousie's graduates are able to interact globally and meet the fast-changing pace of our world.

To meet changing student expectations, the curriculum must also be adapted. Here, there are opportunities to capitalize on the expertise of Dalhousie's highly qualified and pedagogically-focused instructor ranks to establish best practices in curriculum. There are many examples of innovative teaching across the university. These should be shared and applied broadly. There are also opportunities to make better use of resources on campus to more purposefully adapt and modernize curriculum. The university should focus its efforts on competency-based models of education and developing degree outcomes that encompass both technical and soft skills, such as critical thinking and communication. To

ensure access to education, the university should adopt universal design for learning (UDL) in its curriculum and make use of diverse methods of content delivery, along with fully customizable and interdisciplinary degree options.

As curriculum changes, instruction must also change. Here, the university has several key opportunities. Instructors must embrace the use of technology. This is particularly poignant given our current experience moving classes online in response to COVID-19. The university should look to develop a consistent and uniform online learning environment, with base templates, in order to ensure a similar experience as students move from one class to the next. Dalhousie has an opportunity to become a leader in the field of online/multi-access course delivery. To grow in these areas, and to excel in the field of teaching in general, there will need to be more supports available to faculty and a robust knowledge repository to share best practices in teaching and pedagogical innovation should be created.

Finally, to support all of these changes, the institution itself must also adapt for the future. Here, a cohesive and unified approach must be taken to ensure that innovation is taking place at the institutional level, rather than in silos. The university should focus on creating a consistent, frictionless virtual presence to ensure that all members of the university community feel like they are part of “one Dal.” That “One Dal” must extend its reach through Open Education options alongside our traditional teaching. The university should also focus on increasing flexibility for interdisciplinary programming, offering a broader range of credentials, embracing its status as a research-intensive institution by embedding research experiences in all programs, and considering a framework for open education. Learning must be viewed as an ongoing process. Here, the university should consider separating learning from assessment. This would serve to both increase accessibility and inclusion, as well as support learners at various stages of their lives and careers.

In summary, Dalhousie is well poised to meet the future of teaching and learning. The following four key recommendations will take us there:

- Become *One Dal*, working together as one university across disciplines, borders, and Faculties
- Develop our online presence, incorporating open courses alongside online, multi-access and blended learning options
- Embrace new models for education, adopting competency-based models for education, micro-credentialing, and separation of instruction from assessment
- Embrace lifelong learning for all through access to education

Dalhousie is capable of transformational change. This has never been more evident than in the wake of its response to COVID-19. We must not retreat from the gains made through this crisis. Rather, we must learn from the experience to ensure we continue to be adaptable and agile for whatever the future brings.

2. Overview

2.1. Introduction

The answer to what lies in our future can often be found in the past. To that end, we look back to the founding ideas of Dalhousie University, modeled on Edinburgh University as a college open to all, regardless of class or creed.

“Such classes were open to all sects of religion, to strangers spending a few weeks in town, to the military, the navy, to anyone in fact who wanted to spend a useful hour or two during the forenoon.”

“Such an institution in Halifax open to all occupations and to all sects of Religion restricted to such branches only as are applicable to our present state and having power to expand with the growth and improvement of our society would I am confident be found of important Service to the Province.”

- Lives of Dalhousie University: Volume One, 1818-1925: Lord Dalhousie's College (Waite, 1994)

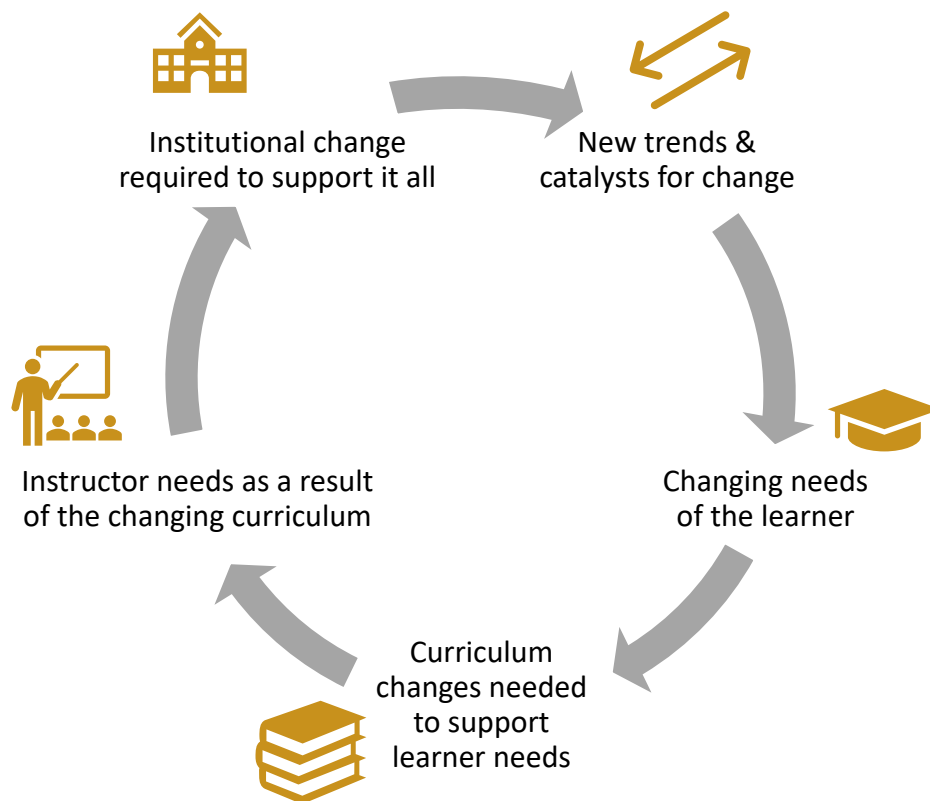
These founding ideas speak to values that we hold today and those that we strive to reach tomorrow. However, the idea of an institution open to all carried a narrow definition in 1818 as we've uncovered in our Report on Lord Dalhousie's History on Slavery and Race (Cooper, et al., 2019). Our efforts on diversity and inclusion in recent years have taught us that we have a long road ahead in creating a truly inclusive institution. But our goal should be to fulfill that founding idea and push to have an institution that is truly open to all.

2.2. Background

The Future of Teaching and Learning Self-Study team has been focused on exploring new and bold opportunities in the teaching and learning space. As a large team, with representation from across Dalhousie, we decided to divide our team into representative subgroups in order to explore the needs within the following four subcategories:

- a) Learners of the future
- b) Curriculum and practice of the future
- c) Instructors/instruction of the future
- d) Institution of the future

In each of these areas, we explored the current state, trends and catalysts for change in that area and opportunities in that space. We see the connectivity of our subgroups as diagrammed below:



While change within teaching and learning is continual, we chose to place the students first and focus on the changing needs of the learner as the driving force within this process. This is represented by an overall sentiment within our group that we must put students first. A summary of findings within our self-study team, regarding these needs, can be found in the Needs Map (APPENDIX C) attached with this documentation.

2.3. Importance and relevance of the self-study theme for Dalhousie

The Future of Teaching & Learning Self-Study Team has been responsible for exploring how we can position ourselves at the forefront of pedagogical, curricular, and ideological changes in teaching and learning. Dalhousie plays a vital role in educating the next generation of students and producing graduates capable of engaging productively in the 21st century.

We must value the role that learners play in their education and allow them to engage with the learning process. As faculty members and as an institution, we must help foster a sense of belonging and inclusion for all of our students. Not only will this help contribute to overall wellness, but it will also help to better enable learning.

The spring of 2020, as we worked together to respond to the COVID-19 pandemic, has demonstrated how important it is for our university to be agile and better prepared to meet the needs of our students where they are at – either in their learning or in the world.

3. Today: Existing Dalhousie Advantages

3.1. Small Institution with a Big Reputation

Dalhousie is in the unique position of being the smallest school in the U15. We are starting from a relatively strong position: a research-intensive university at an approachable scale and situated in an oceanside and welcoming city. Dalhousie is the largest institution in the region.



3.2. Diversity of Programs & Research Areas

Dalhousie has a distributed, Faculty-based system. While this can provide some challenges, it also allows us to be nimble and innovative when needed. We draw strength from the diversity of programs, offered across 13 Faculties. Our faculty and research strengths cover a myriad of areas, including relevant 21st century topics such as big data, community development, food security, innovation and entrepreneurship and topics across the ocean sciences, among many (200+!) others. This has enabled us to offer many incredible programs, across several campuses, including a strong Agricultural Campus in Bible Hill/Truro.

3.3. Diverse Student Body & Global Reach

Dalhousie has been able to increasingly attract international students. We have students from all over the world and engage with student exchange programs from many institutions. We also have faculty from all over the world. This ought to allow us to offer a global perspective for all learners owing to the cultural exposure from diverse student and faculty populations. With a high level of internationalization, Dalhousie is well situated to draw on its global connections to innovate its education and research alike.

3.4. Student Supports

Dalhousie offers multitude of services to students. These supports include those for academic success (writing support, accommodations), career support (career counselling, career fairs), health and wellness (Dalplex, Dal Health, counselling services, wellness initiatives), residence support, and overall community support (Black student advising, Indigenous student advising, LGBTQ2SIA+ support, spiritual connections). These services work to support the Dalhousie student population in a comprehensive and holistic way.

3.5. 200 Years Young & Still Growing

While missing pieces to a puzzle may not seem like an advantage, it means that the picture still has boundless potential for what it can become. While we have a rich 200-year history to draw on, we still have unexplored territory to grow into. Our self-study team found this to be an advantage. We have the possibility of shaping what we want to become and choosing to make bold steps towards that vision. As we continue to evolve the physical spaces across campus, we have seen moves towards creating those that are conducive to the changing learning and teaching needs within the classroom.

While physical space in our Halifax campuses are limited, we have not yet tapped into the potential of an online campus nor fully taken advantage of our Agricultural campus in Bible Hill. There is new territory, both physical and virtual, for more online/blended learning flexibility allowing for greater accessibility (for both student and instructor).

3.6. Community Connections

Not only do we have excellent students, we have a great community from which to draw. Dalhousie has several initiatives that are interwoven throughout the community, including examples like NS Math Circles, SuperNOVA, Imhotep's Legacy and several others. The Dalhousie community values those connections and can be leveraged to help support Dalhousie initiatives moving forward.

3.7. Agility & Adaptability in the Face of Change

Not all communities are capable of identifying a world-changing event and being able to respond within a week. Throughout the recent events related to COVID-19, Dalhousie faculty, staff and administration have demonstrated that they are able to adapt to change quickly and efficiently. Systems that might have been discussed as being rigid, bended to this new reality and were able to embrace a paradigm shift at rapid pace. This adaptative response is a testament to what Dalhousie can do when a need presents itself.

4. Tomorrow: Drivers of Change

In order to focus our work, we first looked to the more global trends and the catalysts for change that will impact both the needs and expectations of future learners. While the world is ever-evolving, the following captures the key stimuli that we see shaping the future of and teaching and learning. These drivers of change are what helped frame our discussions moving forward.



4.1. Fourth Industrial Revolution (4IR)

The greatest driver of change that our team focused on was that of the Fourth Industrial Revolution (4IR). The concept of the 4IR was introduced at the World Economic Forum in 2016, by its founder Klaus Schwab (Schwab, *The Fourth Industrial Revolution*, 2016; World Economic Forum, January 2016). As we stand at the leading edge of this technological revolution, building upon the many advances with AI, machine learning, robotics, biotechnology and other physical systems, we can see that it is driving societal transformation and drastically influencing the future of jobs. It is worth noting that “the emergence of economies based on knowledge have put higher education at the centre of policy development in many parts of the world”, giving universities a voice in this rapidly changing world (Sursock, 2015).

These changes are not only creating new categories of jobs, but also replacing and reshaping existing one. Literature suggests that between 9% (Arntz, Gregory, & Zierahn, 2016) and 47% (Frey & Osborne,

2013) of [US] jobs are at risk of being automated as result of 4IR. It is suggested that half of Canadian jobs “will go through a significant overhaul of the skills required” (RBC, 2018). It is predicted that upon graduation, two-thirds of today’s schoolchildren will step into jobs that do not yet exist (D2L Corporation, 2018). This is transforming both the skill sets and adaptability needs of future learners. Additionally, it is shaping the needs of existing employees as they are asked to either upskill or reskill within existing jobs.

4.2. Changing Student Expectations

Not only are students aware of these changes, but they are also used to a world in which they can choose how they wish to interact with learning. In light of the Fourth Industrial Revolution, the jobs that students will graduate into may be quite different from those that exist when they enter Dalhousie. Learners will expect us to account for that and to be futureproofed, equipped with a durable and adaptive set of skills.

As midcareer employees face these changes, they will be pushed to adjust and grow. Learners will no longer be defined by age or only be direct from high school. This changing demographic of student means that we must meet them where they are – be that their location, time, interest domain and/or ability.

4.3. Equity, Diversity & Inclusion

The impacts of 4IR will be many, driving change in how we as individuals, companies and communities interact with the world, challenging long-held economic, social and cultural norms. Throughout this technological revolution, the decision-makers within the workforce will be shaping the world into which we will live. As such, the importance of a diverse perspective in the designing of this world will shape how inclusive we might expect it to be. Schwab predicted that the greatest societal concern associated with 4IR will be inequality, noting that “there has never been a time of greater promise, or one of greater potential peril” (Schwab, *The Fourth Industrial Revolution: What It Means and How to Respond*, 2015).

The benefits to society if we can increase access to education, thereby increasing access to higher quality jobs and preparing students to step into a world where they can be inclusive innovators. Not only do we have an important role to play in that pipeline, but we also have an important role to play in modeling that inclusion and sense of belonging within our walls.

4.4. Climate Change

Climate change is near the forefront of thought for so many. Ramifications from climate change intersect with many fields and have an impact on all of us. As an archetype of what society should become, we must model best practices when considering what we ask of students that can contribute to their overall carbon footprint. We must be aware of how we help develop knowledge and values towards a more sustainable world.

4.5. Open Education

The emergence and staying power of sites like edX (2012), and Khan Academy (2008) have demonstrated very different models of Open Education. What they have also demonstrated is the interest in learning from a broad cross-section of the world's population. These sites, and others like them prove that access to education is a significant barrier.

4.6. One Dalhousie

In discussions with people from all corners of Dalhousie, it is clear that the Dalhousie experience varies significantly where you're located. Each campus brings its own flavour based on fields of study, available services and ease of movement to other parts of Dalhousie. We need to determine the key components of the Dalhousie experience and ensure that they're not only available but woven through our offerings no matter where a student may be physically or virtually.

In the physical world, we use signage, architecture and community to create the sense of being at Dalhousie. We must replicate that in our virtual spaces. We also have to ensure that all student services are available no matter where they are. If we make this a focus, we can ensure that all students feel like they are part of One Dal.

4.7. COVID-19

When this team first began meeting, COVID-19 had not been named. In the time since it was first transmitted to a human, it has become a global pandemic, resulting in Dalhousie moving to online-only teaching options, and, much else has changed.

In light of all this, we first stepped back from our thought paper and planned to regroup and rethink where we had come. However, what we realized was that much of what we had included was only strengthened by this new reality. We feel that COVID-19 has not changed where we are going, but rather has dramatically altered our starting point.

5. Learners of the future

The subgroup focusing on the learners of the future explored the changing needs of the learner. In understanding the needs required of the university and the future of teaching and learning at Dalhousie, it was felt that changing learner needs should be an important catalyst for future transformation.



In light of all the drivers of change (4), we know that the needs of the learner are changing. As students reskill in the wake of job changes driven by 4IR, we have the opportunity to embrace a radically different student body. As a university that generally draws students direct from high school, we have the chance to reimagine ourselves as a university that also caters to midcareer professionals and lifelong learners.

5.1. Dalhousie Advantages for Learners

Dalhousie offers several advantages, as described in Section 3. Key factors that we see as benefiting the learners of the future are the fact that we have a very diverse student body (3.3) and offer a variety of programs and research foci across many disciplines (3.2). Additionally, Dalhousie provides a number of student supports (3.4)

5.2. Key Opportunities

While we feel that students at Dalhousie have many advantages, the following are key areas of opportunity that our team has identified in which we could better support our learners.

5.2.1. Multi-Disciplinary Exposure

Given the worldwide changes expected as a result of the 4IR, we know that students will require a comprehensive set of skills to prepare them for their future life. They will need to be able to cross disciplinary boundaries and be able to apply their knowledge in new and different ways. Opportunities for multi-disciplinary exposure should be more readily available, and encouraged, for all Dal students.

5.2.2. Experiential Learning Opportunities

While some programs and instructors at Dalhousie have focused on active learning in the classroom, there are available opportunities to support learning through experience. Several existing programs have embedded experiential learning opportunities within their curriculum. Engineering, science and computer science programs offer real-world co-op opportunities. Health-related programs across the Faculties of Health, Dentistry and Medicine all have mandatory experiential components.

Greater exposure to real-world problems and practices, such as the those gained within these types of programs, or through exposure to case studies or forms of problem-based learning, would benefit most Dal students. There exist opportunities across the curriculum to better incorporate experiential learning. We have an opportunity to incorporate more real-world problems and case studies into the classroom. Not only would this benefit students in the short term, there would also bolster the potential for co-op options and future work for students.

5.2.3. Online Access to Learning & Supports

In the speedy response to COVID-19, there has been the rapid adoption/creation of online support and learning services for students. The Spring and Summer 2020 terms will further this move. There is a huge opportunity to learn from and leverage all of the work that has taken place to meet our students in the online space. For many institutions, online learning is a critical part of their long-term strategy (Allen & Seaman, 2011)

5.2.4. Reaching into the Community

The traditional Dalhousie student has entered straight from high school for full-time enrolment. While domestic student numbers are decreasing, there remain untapped populations in Nova Scotia and Canada from which we can draw and to which we can contribute. These include part-time students from more rural regions around Nova Scotia, early/mid-career professionals that are reskilling or upskilling in the wake of 4IR, and lifelong learners in the community that wish to expand their knowledge.

5.2.5. Campus Inter-Connectivity

While students at our Agricultural Campus in Bible Hill are only 104km away from our Halifax campuses, not nearly as far away our summer students might find themselves, that distance can be disconnecting. Additionally, our College of Continuing Education students are sometimes engaging with our campus in different ways. Our face-to-face services, while they have been identified as a strength (3.4), have limited reach. We also face regular challenges in working through connectivity issues with the hospital networks. There is an opportunity to better support all of our students by embracing the concept of a virtual campus, one unifying online space where systems and supports can exist for all students. We must help all students feel included and that they belong within One Dalhousie.

5.2.6. Open Education

Open education presents a significant opportunity for Dalhousie to expand its reach beyond our traditional student population. By offering learning at no cost, using open resources, we will dramatically lower the barriers to experiencing a university education (Johnson, 2019).

Learning is open to all, and choosing to be assessed is an optional second step, leading to credential. By separating learning from assessment, we can sustain existing revenue models while making the Dalhousie experience as broadly available as possible. We can reach and engage under-represented groups in a meaningful way that will allow them to explore what we have to offer with much less risk than there is today. Some students will elect to move from open learning to earning credentials through assessment, once they gain confidence in their academic skills. Others will become members of the Dalhousie community as life-long learners with no need for credentials.

5.3. Visions for the Future of Learning

Vision 5.1.

Improve access and inclusion by leveraging use of online/blended learning opportunities.

Students of all backgrounds will have access to specific programs and social opportunities and will also be integrated into the larger student body.

Many services and classes have had to move online in response to the necessary measures put in place in response to COVID-19. We have a huge opportunity to leverage the hard work that is going into our teaching and student supports as a result these changes. While we would hope to move back to on-campus offerings in part, we should take what we've learned and use it to our advantage. Within a face-to-face course, this might mean pushing some material online in order to free up in-class time for active learning, examples and/or discussions. If class time is reduced, it also frees up classroom space, which we know to be at a premium in several buildings.

More online/multi-access courses would allow us to pursue the population that is not "direct from high school" by offering more options in the evenings and weekends. While appropriate supports would have to be in place, more opportunities for online instruction offers the potential for enrolment growth from these alternate markets and, therefore, increased revenue.

While we do not suggest that Dalhousie move away from its face-to-face offerings completely, we think it is an important step to have more of an online presence. As student demographics shift in response to 4IR and in wake of COVID-19, as some find themselves between jobs or needing to reskill for other jobs, this is more important.

Vision 5.2.

Prepare students so that they leave Dalhousie with a holistic package of skills (durable life skills, discipline-specific, social skills, oral/written communication, etc.)

|| We will provide students with a comprehensive set of skills that will prepare them for their future life. We will help our students become lifelong learners, ever-moving towards becoming a “complete person”. ||

The student would then be better prepared for a successful life. They will be prepared for life, rather than simply being prepared for just a “job”. Knowledge is readily available on the internet. We must contribute to the more holistic person in order to be of use. In light of the 4IR-related changes in the job market, students will want to gain durable skills to be prepared no matter what the future holds. What we teach our students today is less important than helping to facilitate their “ability to learn what [they] need for tomorrow” (Siemens, 2005)

Vision 5.3.

Meet students where they are – be that their location, time zone, interest domain and/or ability.

|| Students will learn in an environment tailored to their specific needs, based on the way they learn, their particular discipline, their educational background, their previous work experiences and/or their future goals. ||

Student is not pre-defined (by anything... you can be a student at any point, from any path, from any background). As a part of this inclusion, we must make sure to cultivate a sense of belonging and connection. This is especially true as we begin to make greater use of online teaching platforms. Faculty connections to students are paramount under all circumstances but must be more carefully fostered under distance learning frameworks.

Vision 5.4.

Provide students with meaningful, experiential learning opportunities suited to their discipline as well as their learning preference, including examples and issues from the private sector.

Students will have opportunities for experiential learning, research experiences, employment, community projects, exchanges, volunteer opportunities, certificate programs, etc.

Students will be made ready for the real world with private sector problems in the classroom.

Vision 5.5.

Dalhousie will embrace true diversity, not just by celebrating diversity, but ensuring it.

We will prioritize diversity within our student population by ensuring that programs consider (or reconsider) how students are treated equitably throughout their Dalhousie journey, from admissions through to graduation.

In order to achieve this, students will have to be recruited in unconventional ways. They must also be supported in more and unconventional ways once they get here.

6. Curriculum & Practice of the future



As student needs change and evolve, so too must the curriculum and practice in order to meet those needs. The following captures the curricular changes needed to support the changing needs of the learner.

6.1. Dalhousie Advantages for Curriculum & Practice

Dalhousie offers several advantages in this space.

6.1.1. Central Support for Pedagogical & Technological Innovation

Dalhousie has a team of educational developers within the Centre for Teaching and Learning (CLT) available to support all Faculties. Academic Technology Services are available to support the changing needs with respect to adoption of new technology platforms. Together, they are prepared to support pedagogical and technological innovation.

6.1.2. Highly Educated & Pedagogically-Focused Instructor Ranks

Dalhousie is fortunate to have some research faculty that are pedagogically focused. Dalhousie also benefits from its members of the faculty that are in the Instructor ranks (instructors, senior instructors & university teaching fellows). These members are typically highly-educated (with PhDs in their field), capable of research and have specifically identified as being interested in teaching. This combination of

factors means that they often have an interest in the scholarship of teaching and learning (SoTL), making them well-suited to enact and guide pedagogical change.

6.1.3. Innovative Ideas & Practice

Across campuses, you will find many new and innovative approaches. While these are sometimes discipline-specific in nature, the core of the approaches can often be applied across Faculties and curricula. In total, there are many, though dispersed and often-isolated, examples of great practice across Dalhousie.

Skilled Graduate Students

Dalhousie has a large group of enthusiastic and skilled graduate students that can be utilized in delivering certain parts of changing/new curriculum while under the supervision and guidance of a course instructor or coordinator. This can be useful to implement curriculum that may be delivered more effectively in small groups. Accommodation of learner needs and testing can sometimes be more easily accomplished with a smaller instructor-to-student ratio.

6.2. Key Opportunities

6.2.1. Connectivity

While the examples of pedagogical research and innovation within the Dalhousie are numerous, the research is insular and not often shared beyond the boundaries of the Faculty, sometimes not even beyond the course team. These advances would benefit the greater Dalhousie community from being shared. At the moment, there is no central repository where one might exchange information. Aside from individual sources of knowledge within CLT, this information remains only at the spokes and is not shared through a central knowledge hub. Dalhousie could create such a hub using existing platforms with which faculty are already familiar.

6.3. Visions for the Future of Curriculum & Practice

Vision 6.1.

Embrace competency-based models for education.

University degree now described by skills, not years invested/courses completed. This would require curriculum mapping from course-program-degree at all levels to ensure alignment of outcomes and core competencies.

As students move towards becoming lifelong learners, they will expect their degree options to honour that transition. European higher education models have shifted in response to current educational demands in order to have a greater emphasis on competency-based learning (Velasco-Martínez & Tójar-Hurtado, 2018). Not only would we wish to encourage this form of learning, but also validate this learning through proper crediting.

Benefits of adopting this model for education include the fact that it:

- Allows for prior experience or other forms of learning to be acknowledged;
- Allows students to apply for credit instead of requiring them to take a course on material they already know;
- Optimizes the time investment for learners;
- Addresses the different backgrounds of learners and the fact that students learn at different speeds (inclusive); and
- Allows for better understanding of learning outcomes, and therefore optimized delivery of course material.

Vision 6.2.

Degree outcomes consciously designed to encompass discipline-specific skills as well as the durable and professional skills required by all.

Not only will students gain a knowledge base related to their discipline, but they will also acquire the necessary interpersonal and professional skills of critical thinking, oral/written communication, teamwork and leadership.

The degree goes beyond certifying a professional's knowledge. Education is where society starts, and Dalhousie University has an important part in it. In order to prepare students for the world of the future, we must offer unique student opportunities that equip them with courage, resilience and empathy (Ramsden, 2008). Durable life skills are timeless which means there is always a central value to the courses. If the institution builds well-rounded individuals, it's perceived value may change from an obligated rite of passage to get a better job to a growth and self-development experience.

Vision 6.3.

Assessment inclusive for all learners that allows for acknowledgement of alternate or prior forms of learning.

Learners can demonstrate knowledge/skills in a way that is most fitting to their personal learning experience.

Students will join Dalhousie from many different paths. In order to be inclusive and acknowledge prior learning, we must allow for multiple methods of and opportunities for assessment.

Employers can exploit this to hire effectively allowing the learner would have higher likelihood of finding a job that suits them best.

Vision 6.4.

Customizable degrees to suit ever-changing societal needs, and individual learner's skills and interests. This would require interdisciplinary collaboration.

Students, especially those that are upskilling or reskilling mid-career, know what they want from their education.

New degrees are already starting to realize the importance of meeting students individual expectations. An example of such is the newly approved Masters of Digital Innovation, which allows for choice of electives and relevant certificate from several topic areas, spanning health informatics to ocean data science, to suit their individual needs.

Vision 6.5.

Adopt universal design for learning and accessible/open educational practices in order to expand the reach of our instruction.

This will require consideration of students' backgrounds, utilization of technology like captioning/lecture recording, use of contextualized examples, and incorporation of a broader community context.

A key to this success is that we ensure that all Canadians, regardless of family background, benefit from an equal opportunity to partake in higher education (Berger, 2009). Open educational practices will help us all succeed.

Vision 6.6.

Diverse methods of content delivery and course delivery designed to acknowledge modern resources.

Keep delivery unique and worthwhile ("experiential"), as opposed to just repeating information that is readily available on the internet. Students will be engaged and motivated to come to class if what they can get there is engaging, personalized and interactive.

This would be enhanced through understanding of interdisciplinary and broader community connections. The use of Open Educational Resources, Open Educational Practices, student-driven collaborative resources as well as the separation of instruction from assessment present options and a different toolset than what we've traditionally used. Using and contributing to these tools effectively will benefit all modes of course delivery, from online to blended, multi-access or face to face.

7. The Future of Teaching and Instructors

Higher education instructional delivery is evolving quickly, driven by emerging and improving technologies, changing learner needs, preferences and expectations, and an evolving world of work. Higher education is a fluid and dynamic ecosystem.



7.1. Existing Dalhousie Advantage for Instruction

Dalhousie University has pockets of highly engaged and highly skilled faculty and instructors, educational developers, instructional designers, and academic leaders who are attuned to the evolving higher education instructional delivery ecosystem and who are passionate about cutting edge, high quality, higher educational delivery.

7.2. Key Opportunities

There is extensive low hanging fruit that when addressed will have significant impact on the teachers and instructors at Dalhousie University and the quality of their teaching delivery and outcomes.

7.2.1. Embracing Technology

There is a wealth of information available and/or can be made available through the use of technology (electronic notes, short videos, vignettes, etc.) and moved out of the classroom. This may help instructors make better use of the relatively short in-person time.

7.2.2. Dalhousie-Consistent Online Learning Environment

A uniform online environment within Brightspace might require a bit of up-front work but can help the instructor and learner in the long-term. If every online class environment “looks and feels” the same, you already have some bearing on either side of the process.

7.3. Visions for the Future of Teaching at Dalhousie

Vision 7.1.

For Dalhousie to be a leader in the successful delivery of online, multi-access, or blended learning courses at both undergraduate and graduate levels.

|| To have educators who are skilled appropriately in the use of educational technology and who are able to deliver educational experiences appropriately for our time. ||

The benefits of embracing technology within teaching are many. It would increase accessibility and geographical reach; solve the issue of physical space at the university through a move towards

online/blended learning; increase student engagement, thereby increasing student retention; attract qualified faculty and students; and offer financial savings on operations.

In order to achieve this, we must engage in discussions with faculty colleagues regarding the workload impact of online courses. Matters that may arise include the concept of intellectual property ownership rights and how we approach this (financial compensation, continuity of courses, professional recognition of course creation, etc.) if we hope to reuse material for subsequent offerings. Concerns have already surfaced around the class size expectations for online courses, with a concern that space limitations were the only previous constraint mechanism.

If we are to maintain program integrity and rigour, online, multi-access and blended offerings must be of the same calibre as their traditional face-to-face counterpart. To support this, we should invest in training for online pedagogy and educational technology for faculty who will teach online courses. The focus would be on pedagogical skill, versus technical skill, as this has been deemed more important as a predictor of effectiveness in online teaching (Kim & Bonk, 2006). As a side benefit, this training has the potential to also raise the calibre of our face-to-face offerings as many concepts are shared across domains. According to a study of 2500 US universities, the most common training approaches for online faculty are internally run training courses as well as informal mentoring (Allen & Seaman, 2011).

Vision 7.2.

Support student learning through creation of a uniform online learning experience.

There is a huge variety of online learning experiences at the moment, even within programs. In order to alleviate the burden of students having to learn a new organizational content structure for each course, we suggest a base template for Brightspace course spaces.

Ideally, every course that is run at Dalhousie has a Brightspace course. We envision both the face-to-face and online/multi-access/blended versions of the class making use of the same resources. This could be leveraged into allowing courses to run within a multi-access framework, embracing a combination of delivery methods and allowing students to choose the blend (Irvine, Code, & Richards, 2013). The face-to-face class can leverage this opportunity to run a flipped class and to make space within lecture time slots to incorporate more active learning techniques.

To support students in these spaces and to foster the sense of One Dalhousie, seamlessly regardless of campus or offering format, it would be useful to have a standard Dalhousie template for Brightspace. Students should know where to find information and have a similar experience from Faculty to Faculty, course to course. The new Accessibility Act presents a unique opportunity to unify our online presence, for all course formats, through templating.

Vision 7.3.

Create a thriving community of practice and knowledge repository of pedagogical innovation.

The trends in teaching and learning within each discipline are continually evolving. For Dalhousie to lead in this space, or even keep pace, we must devote resources to connecting institutional innovators and exploring new trends.

We must create a knowledge hub for sharing teaching and learning practices and knowledge between Faculties and even between instructors within those Faculties. If teaching is to be one of Dalhousie's strengths, we must innovate. In order to innovate, we must share ideas and generate new ones together. The ideas captured through this series of weekly team meetings for our self-study have been informative and inspiring. It has motivated the work that team members are doing and the result of this knowledge sharing has benefitted us all.

A shared repository of knowledge could help improve the onboarding process for new and sessional instructors. It could help to identify mentorships/partnerships for and between instructors and help promote and connect existing communities of practice that are currently working as isolated subgroups.

We should leverage tools already in use in order to connect us all (e.g. Uniweb or Teams). It would allow us to better identify the ever-changing inventory of services and strengths what we currently have to better support faculty (training, instructional designers, educational developers, technology services, etc.) and to help identify gaps. There are many points of knowledge around the university in this space. This would seek to harness the knowledge already available at Dal.

8. The Future of Dalhousie as an Institution



Last, but not least, we consider the institutional change required to support all of these visions.

8.1. Institutional Advantage

We already have faculty teaching in many different ways. Within Dalhousie, there is existing expertise in many areas. However, in many cases, innovation takes place individually and not institutionally. Similarly, there are support teams available with a great deal of depth, though limited by capacity. With resources, this could be scaled up relatively quickly, as we saw in response to COVID-19.

8.2. Key Opportunities

8.2.1. Make (Better) Use of Existing Resources

Before looking outward, it is important that we first make ample use of the many resources, be they equipment, software or staff, that Dalhousie already possesses.

8.2.1.1. Digital Tools

We have the opportunity to make efficient use of the tools that we already have. While many of our digital tools are up to the task of supporting Dalhousie needs, we have had very mixed implementations over time. Dalhousie invested significant time and money into the Brightspace implementation and that has gone well with broad adoption and regular training and support available to faculty. Other implementations have been more limited and have not been as successful. Other platforms may not be used to their fullest extent. An example of this is the concept of leveraging tools like Uniweb and Teams to connect Communities of Practice within teaching and learning.

8.2.1.2. Knowledge Sets

A challenge of such a large university is the reality of institutional memory loss. Great ideas that are not shared do not benefit the future of the university.

In order to create and/or sustain a competitive advantage as a university of the future, we must recognize that knowledge is one of our most valuable assets. While this is clear to us from a student-facing perspective, we must learn to value and exchange knowledge within the institution as well. An intangible asset, knowledge is our most valuable commodity. It is also that which will help us move forward and keep pace with other institutions. As such, we must focus on knowledge sharing and the creation of knowledge hubs dedicated to capturing, sharing and exchanging information.

8.2.2. Develop a Robust Online Presence

Online learning continues to steadily increase across Canada and beyond, with the vast majority of Canadian universities offering online courses for credit (Johnson, 2019). We have a major opportunity to leverage the necessary work of the Spring/Summer 2020 terms and move strategically into online teaching spaces. We have an opportunity to look at our tools differently and embrace a new mindset regarding the potential of a university-wide online presence. Moving our entire campus online over this timeframe will push us to ensure that all of our services are accessible by everyone. The goal is that our online presence creates a meaningful experience. It needs to be much more than a directory of courses and services.

We believe that creating a presence based around our existing online offerings and extending into Open Learning, either through those courses or with new offerings, is the best approach. We can then ensure that our central supports (e.g. Libraries, CLT, Student Affairs and others) are in place for both faculty and students in this new space, thereby helping to ensure that we are able to extend the Dalhousie experience into this new online campus.

The Open Education offerings will go a long way to reaching out to the increasing number of life-long learners that are being challenged by the 4th Industrial Revolution. While it is speculative, we believe that successful institutions of the future will at least be partially Open.

8.2.3. Consistent Dalhousie Experience

As we move towards more online/blended teaching frameworks, we should strive to have a familiar Dalhousie experience for each course. This experience using a shared nomenclature for shared components of classes (e.g. Assignments, Lectures, Syllabus) and adopting common placement within our digital course Brightspace pages. While this experience would need to be articulated, it would bring a consistency to the learning experience for students – across courses, Faculties and campuses.

8.2.4. Pedagogically & Technologically Flexible Teaching

In order to meet the needs of students, universities will have to become more flexible in the format and structure of their offerings. We must consider the ability to teach in non-traditional learning blocks (i.e. a 4-day or 4-week class). Moving out of the rigidity of a fixed, 12-week-only structure is not only innovative, it is inclusive. Not all students are capable of, or interested in, investing in full-time, full-semester studies. Capturing the larger idea of lifelong learning, our instruction blocks must be flexible in order to capture the components of learning from which students are interested in benefiting.

This flexibility opens doors to students who wish to study while working full time, parenting full time or that are otherwise unavailable.

8.2.5. Carbon-Neutral, Healthy Spaces

Students, faculty and staff want to feel a part of a greater vision. As climate change is brought to the forefront, we have an opportunity to lead in that change and work within our spaces to move towards developing carbon-neutral campuses as we update. There are several benefits to leading in the creation of sustainable infrastructure, including: reduced environmental and economic costs; both internal and external stakeholder respect; improved learning for students and community; approval of students and faculty; and the self-actualization of moral and social responsibility (Cortese, 2003).

As spaces are revisited in order to meet new accessibility legislation, the opportunity is now. At the same time, we should be mindful of creating adequate, appropriate classroom and study spaces that promote healthy study habits that capture the need for group networking and independent work.

We are seeing right now that restricted commuting due to COVID-19 is having a positive impact on climate change. We must recognize this progress and not lose it moving forward. Just as students will wish to manage the time, space and place of their learning, the same is true for instructors. We must be strategic in terms of when we require face-to-face gatherings (be it meetings, group work or classes). In order to allow for more flexibility and avoid unnecessary commuting, we should leverage what we've learned in our response to COVID-19 and make use of virtual offerings where appropriate.

8.2.6. Flexible and Technology-Rich Spaces

Dalhousie has constraints on its classroom space already. Up until the COVID-19 crisis, there was increasing investment in the physical spaces and we were just beginning to see investment into the technology in those spaces. However, seat count and budget remained an overriding factor in the decision-making process when renewing spaces. Dalhousie must find a way to create accessible, technology-rich spaces build to support active learning as its primary function.

Leveraging technology and supporting technology-enabled learning can “enhance access to learning and improve assessment, while offering educator and learner analytics, personalization at scale, improved success rates, and greater cost effectiveness” (D2L Corporation, 2020)

8.2.7. Enduring Skills in all Dalhousie Graduates

We must work to enhance and support transferable, enduring skills of all Dalhousie students to include oral/written communication and interpersonal skills.

8.3. Visions for the Future of the Institution

Vision 8.1.

One Dalhousie.

Dalhousie will feel like one University: One Dal. Our students will be “Dalhousie students”, should they be in Bible Hill, St. John or Halifax, Engineering or Psychology.

Dalhousie is a multi-site, multi-campus, and multi-Faculty institution. It has evolved over multiple centuries to become one whole made up of many parts. There are many opportunities to leverage the diverse set of abilities across these locations and help faculty, staff and students feel that they belong to One Dal.

Dalhousie, as a whole, provides many opportunities and choices, but this experience can vary dramatically for students based on their program or campus. Embracing our online presence and creating virtual services will ensure uniform access to services and help everyone feel more connected and equal members of the whole. Online teaching would open up opportunities for faculty at the smaller campuses to contribute on a broader scale and for shared access to courses on all campuses.

Vision 8.2.

Develop a virtual campus.

Develop an online virtual campus built around our existing online offerings, new open education offerings and, critically, services for students.

This will provide more opportunities to engage with a more diverse population of students and lower barriers of entry for all, including those who have recently become life-long learners.

Additionally, this will support the feeling of One Dalhousie. Students from all locations, even remote, will have access to a shared, frictionless experience.

Vision 8.3.

Support a frictionless experience for students and faculty.

Moving into online spaces and maintaining a common Dalhousie experience will require central supports to help create a frictionless experience for all.

Open Education demands low to no friction for students. It must be simple and straightforward for them to sign up, then equally simple to transition from the Open System into our normal credit systems.

Vision 8.4.

Flexibility for interdisciplinary programming.

Allow for greater flexibility for interdisciplinary programs. Tackle ERBA. Remove any vestiges of resistance that are blocking Faculties from embracing interdisciplinarity in their program offerings and research.

Students will (and do) expect interprofessional and interconnected programming that requires coordination, cooperation and mobility between Faculties. The use of the word “silos” in reference to Faculty structures demonstrates the fact that rigid boundaries exist which limit access. In order to truly become One Dalhousie, we must first feel that we are in the same silo.

Vision 8.5.

Embrace our status as a research institute.

Dalhousie students will know that they are studying at a research institution.

Dalhousie is a research institute, a small but mighty member of the U15. This fact sets it apart from other regional institutions and is a contributing factor in why many students choose Dalhousie. Dalhousie must embrace its status as a research institute.

Research experiences and experiential learning can be embedded throughout and across curriculum in such a way as to leverage this fact. Even simple additions of research-oriented activities, such as reading a research paper or case study and writing a summary in a first-year course, help students feel a part of the greater research of the university.

Vision 8.6.

Offer a spectrum of credentials through multiple modes of delivery.

Dalhousie would offer a spectrum of innovative credentials, spanning from digital badges and micro-credentials, through our university standards, to PhDs. We would offer variable-length courses via a combination of online, blended and face-to face delivery modes.

The world is shifting towards skill- and competency-based hiring. In a LinkedIn survey of 2017, over 60% of those surveyed claimed to be moving towards skills-based hiring, that they would “choosing candidates based on what they can do, rather than degree or pedigree” (Golding, 2017).

The costs of traditional credentials in higher education have been continually increasing. The combination of this combined with the 4IR skills gap forcing professionals to constantly upgrade their skill-sets in order to remain relevant in their field. These conditions combine to make alternative credentials attractive.

Vision 8.7.

Support a competency-based model for education.

Allow for students to show evidence of skills and knowledge acquired through a much wider range activities, both in and outside of the classroom. Allow for assessing skill acquisition at a more granular level. Acknowledge the prior learning and continual learning of students, even outside the classroom.

Existing university structures and policy must be considered in light of a new approach. Much can be learned from the Faculty of Health which uses this educational model. (This is supported by Vision 5.3 and Vision 6.1)

Vision 8.8.

Allow greater access to higher education through open education frameworks.

Even in our relatively prosperous and affluent country, there are inequities in access to education. A mode of openness helps mitigate these inequalities.

We believe that successful institutions of the future will at least be partially open. In Europe, open educational resources and open licensing have become the rule under certain funding obligations (Sursock, 2015).

Vision 8.9.

View learning as an ongoing process: separate instruction from assessment.

Embrace lifelong learning and lifelong learners. For those that wish to obtain a degree, the goal is the credential at the end of course and program completion. For a lifelong learner, the learning itself is the goal. Learning is extremely individualized. Assessment should be also.

The primary roles of higher education are to certify academic achievement and provide instruction and supports for learning in order to reach those achievements. If assessments are structured properly, they will reflect what a student has learned, and provide evidence of that learning (Schejbal, 2014). These serve as form of quality assurance that students are meeting learning outcomes associated with the program goals. By separating instruction from assessment, we can move towards competency-based models for education while at the same time allowing for greater accessibility and lifelong learning.

Embracing lifelong learning requires a transformation in the way we think about assessment. Assessment is often thought of as inseparable from teaching. However, learning can take place through many forms and by many means, with or without the presence of a teacher. Assessment is typically used to determine which knowledge “is stable and replicable” (Hager, 2003). However, both lifelong learning and 4IR value the ability of learners to be flexible and respond dynamically to information. Assessment is understood to be a part of the (ongoing) learning process instead of an evaluation of the learning product.

Students learn at various rates and from various sources. Students sometimes approach an exam fully self-aware that they are not yet properly prepared for it. Allowing the assessment to be separated from instruction would allow students to assess when ready. This further has the benefit of assessing in a more generalized context. Learning often happens within a specific context. Ultimately, we expect that students to be able to generalize beyond that specific context (Hoffman, 2014). However, we expect that students will be able to generalize that learning and apply it to other domains.

9. Summary & Considerations



9.1. Summary

Summary

9.1.1. Key visions

9.1.1.1. VISION 1: One Dalhousie

As One Dalhousie, we will work together as one university – be we in Halifax, Bible Hill, St. John or remote. We will work across disciplines, across borders and across Faculties.

(Supported by visions 5.1, 5.4, 6.4, 7.1, 7.2, 8.1, 8.2, 8.3, 8.4, 8.5)

9.1.1.2. VISION 2: Online Presence

Further supporting our One Dalhousie presence, we would take our some of our teaching and most student services online. While our response to COVID-19 has certainly not been easy, it has catalyzed action in this area. In order to truly embrace this silver lining, we must leverage the hard work that has been done in this area. While we recognize that not all courses could ever be all online, there will be opportunities for some courses which require hands-on components to harness the power of blended learning options in order to free up in-class time for further experiential learning opportunities in class.

(Supported by visions 5.1, 5.3, 5.5, 6.5-6, 7.1-2, 8.1-3, 8.6, 8.8)

9.1.1.3. VISION 3: Embrace new models for education

Embrace teaching in such a way the degree becomes a demonstration of knowledge, skills and soft skills acquired rather than years spent in a classroom. This includes the adoption of competency-based models for education, micro-credentialing and separation of instruction from assessment.

(Supported by visions 5.2-5, 6.1-6, 7.1, 7.3, 8.3-4, 8.6-9)

9.1.1.4. VISION 4: Embracing lifelong learning for all through access to learning

The institution is building the future members of and, therefore, shaping society. Allowing for access to learning and upskilling helps develop the future of our community. We must strategically consider where we should be helping to shape that future through access to learning.

(Supported by visions 5.1-5, 6.2-6, 7.1, 8.2-4, 8.6, 8.8-9)

9.2. How would we measure success?

We will measure success in many different ways, but some critical ones will be:

1. Our institution will be more diverse and inclusive than it has ever been before. We will continue to work to fulfill the founding idea that Dalhousie is open to all.
2. We will not retreat from the online gains made through the COVID-19 crisis. While we acknowledge that some courses should and will return to their traditional face-to-face delivery, many more should either continue to have online delivery or move to a hybrid approach such as flipped classrooms.
3. We will have engaged a large number of life-long learners and support them through their career, life and educational transitions.
4. Instruction will be separated from assessment such that learning is open to all and assessment, leading to credential, takes place once students are ready.
5. Our students will have a frictionless experience with Dalhousie's administration and systems which feels similar no matter the space or place from which they access these.
6. That experience will be supported by faculty who will also be supported by technology and teams that will help to ensure they can focus on teaching and subject matter expertise.
7. Most importantly, our graduates will succeed in the face of the 4th Industrial Revolution. That will mean different things in different programs, but it should come with a shared understanding and embrace of the technology that will drive our future lives.

9.3. Conclusion

Transformational change can happen. We have seen this in the wake of the COVID-19 response. Overnight, we saw a university-wide response that changed the way we teach, interact with and support

students along with a complete rearrangement of how and where we work together. When Dalhousie chooses to prioritize something, we have the skill and the will to embrace positive change.

Bibliography



- Allen, I. E., & Seaman, J. (2011). *Going the Distance Online Education in the United States, 2011*. Babson Survey Research Group and Quahog Research Group, LLC.
- Arntz, M., Gregory, T., & Zierahn, U. (2016). *The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis*. Retrieved from <https://dx.doi.org/10.1787/5jlz9h56dvq7-en>
- Berger, J. (2009). Participation in Post-Secondary Education: Recent Trends. In J. Berger, A. Motte, & A. Parkin, *The Price of Knowledge: Access and Student Finance in Canada* (Vol. 4th Edition). Montreal, QC: Canada Millennium Scholarship Foundation.
- Cooper, A., Baylis, F., Cameron, C., Francis, A., Lovejoy, P., States, D., . . . Saney, I. (2019, September). *Report on Lord Dalhousie's History on Slavery and Race*. Retrieved from https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/ldp/Lord%20Dal%20Panel%20Final%20Report_web.pdf
- Cortese, A. D. (2003, March-May). The Critical Role of Higher Education in Creating a Sustainable Future. *Planning for Higher Education, 31*(3), 15-22.
- Creative Commons. (2019). *The Rise of Online Learning in Canadian Universities and Colleges*. Canadian Digital Learning Research Association.
- D2L Corporation. (2018). *The future of Work and Learning in the Age of the Fourth Industrial Revolution: Canadian Edition*. Kitchener, ON.
- D2L Corporation. (2020). *The Future of Lifelong Learning Designing for a Learning-Integrated Life*. Kitchener, ON.
- Frey, C. B., & Osborne, M. A. (2013). *The Future of Employment: How Susceptible are Jobs to Computerization?* University of Oxford.
- Golding, M. (2017, January 19). *What's Next in L&D: Experts Reveal Predictions for 2017*. Retrieved from Linked In: https://learning.linkedin.com/blog/learning-thought-leadership/what_s-next-in-l-d--experts-reveal-predictions-for-2017
- Hager, P. (2003). Changing Pedagogy: Productive Learning. *OVAL Research Working Paper 03-16*. Sydney, NSW, Australia: University of Technology.
- Hoffman, M. (2014, September). *Three Misconceptions about the Separation of Instruction and Assessment*. Retrieved from The EvoLLLution: Teaching and Learning: <https://evollution.com/opinions/misconceptions-separation-instruction-assessment/>
- Irvine, V., Code, J., & Richards, L. (2013, June). Realigning Higher Education for the 21st-Century Learner through Multi-Access Learning. *MERLOT Journal of Online Learning and Teaching, 9*(2), 172-185.
- Johnson, N. (2019). *Tracking Online Education in Canadian Universities and Colleges: National Survey of Online and Digital Learning 2019 National Report*. Canadian Digital Learning Research Association.
- Kim, K.-J., & Bonk, C. J. (2006). The Future of Online Teaching and Learning in Higher Education. *EduCause Quarterly, 4*, 22-30.
- Ramsden, P. (2008). *The Future of Higher Education Teaching and the Student Experience*.

- RBC. (2018). *Humans Wanted: How Canadian youth can thrive in the age of disruption*.
- Schejbal, D. (2014, August). *Teaching, Assessment and Quality Assurance in Higher Education*. Retrieved from The EvoLLLution: <https://evollution.com/opinions/teaching-assessment-quality-assurance-higher-education/>
- Schwab, K. (2015, December 12). *The Fourth Industrial Revolution: What It Means and How to Respond*. Retrieved from Foreign Affairs: <https://www.foreignaffairs.com/articles/2015-12-12/fourth-industrial-revolution>
- Schwab, K. (2016). *The Fourth Industrial Revolution*. New York: World Economic Forum, Crown Publishing.
- Scotia, H. M. (2018). *Accessibility Act: Chapter 2 of the Acts of 2017*. Authority of the Speaker of the House of Assembly Halifax.
- Siemens, G. (2005). Connectivism: A Learning Theory for the Digital Age. 2 (1), 3-10. Retrieved from http://www.itdl.org/Journal/Jan_05/article01.htm
- Sursock, A. (2015). *Trends 2015: Learning and Teaching in European Universities*. Brussels, Belgium: European University Association.
- Velasco-Martínez, L.-C., & Tójar-Hurtado, J.-C. (2018). Competency-Based Evaluation in Higher Education. *International Education Studies*, 11(2).
- Waite, P. (1994). *The Lives of Dalhousie University: Volume One, 1818-1925: Lord Dalhousie's College. The Governors of Dalhousie College and University*. Retrieved from https://dalhousie-libraries-ebooks.gitbooks.io/the-lives-of-dalhousie-university-volume-one-1818/content/chapter1.html#fn_31
- World Economic Forum. (January 2016). *The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*.

APPENDIX A. Description of internal and external scans

A.1. Self-Study Team Members

Our self-study team has had participation from across Faculties and Campuses and is comprised of faculty, staff and students (both undergraduate and graduate). On our core team, we have representation from 9 separate Faculties, the Registrar's Office, CLT and the College of Continuing Education. We were very fortunate to have had such an amazing team with which to undertake this self-study. It was truly a pleasure (for a complete list, see The Future of Teaching & Learning Self Study Team, page i).

A.2. Project Support

We are also grateful for the initial guidance and direction from our Executive Sponsor, Provost Teri Balser. As a part of overall Strategic Renewal project, we were thankful to work with Amarea Greenlaw as our project manager. Additionally, we worked with three key resource people (listed on page i), those identified as having expertise of the topic within the Dalhousie community.

RESOURCE TEAM	
RESOURCE	FACULTY/DEPARTMENT
Teri Balser	Provost & Executive Sponsor
Amarea Greenlaw	Project Manager, Strategic Renewal
Suzanne Le-May Sheffield*	Director, Centre for Learning & Teaching
Anne-Marie Ryan*	UTF, Faculty of Science (Earth & Environmental Sciences)
Brad Wuetherick*	Executive Director, Centre for Learning & Teaching

Our resource team(*) was made use of at the start of the self-study as a jumping off point. They were invited to share with the team those topics that were seen to be of greatest import in this space and to guide us toward distinctive university initiatives. Finally, they have also been involved near the end of the project to provide feedback on the team's overall vision. Finally, we wish to thank Donna Bourne-Tyson (Dean of Libraries) for her excellent feedback and editing support on our final draft.

A.3. Internal Scans

The work of this self-study team builds upon the initial work of the "Future of Teaching & Learning" Learning Circle that met over the summer of 2019. Internally, we have invited past Learning Circle

members, that self-identified as interested in this topic, as well as others within the university community to engage with us on multiple levels.

A.3.1. Learning Circle

The original Learning Circle group was comprised of those faculty and staff that expressed an interest in the topic and provided an opportunity for involvement and greater awareness about the knowledge hubs across campus.

The Learning Circle participants engaged at various levels. The group met in person throughout the summer, though some contributed primarily via online discussions in an open-format discussion on Brightspace.

LEARNING CIRCLE CO-LEADS	
CO-LEADS	FACULTY/DEPARTMENT
Margie Clow Bohan	Manager, Dalhousie University Writing Centre
Martine Durier-Copp	CEGE Director, School of Information Management
Angela Siegel	Program Director BACS, Faculty of Computer Science

LEARNING CIRCLE PARTICIPANTS		
Tareq Abdullah	Liesl Gambold	Robin Oakley
Nayha Acharya	Gillian Gass	Patrick Oster
Gregory Adolphe-Nazaire	Lisa Goldberg	Sundari Pashupathinathan
Peggy Alexiadis Brown	Debra Grantham	Leslie Phillmore
Iris Black	Amarea Greenlaw	Tasha Richard
James Blustein	Carla Heggie	Anne-Marie Ryan
Donna Bourne-Tyson	Shauna Houk	Laurel Schut
Kaitlin Burek	George Jarjoura	Catherine Sheffer
Beth Cann	Julie Jordan	Paulette Skerrett
Erin Careless	Betsy Keating	Leanne Stevens
Alison Crepinsek	Georgia Klein	Julie Tarry
Teresa Cyrus	Kelly Lackie	Laura Tatar
Magali Dam-Mazzi	Catherine Lyle	Derek Tay
Sarah Davis	Jennifer Macdonald	Sandra Toze

Linda Denny	Deepika Mathur	Julie Webb
Tereigh Ewert-Bauer	Nicole McKeever	Marc Whalen
Donna Forbes	Jill McSweeney	Kathleen Wooden
Karen Gallant	Ayesha Mushtaq	Sue Zinck

A.3.2. University Senate

Our team also engaged with the University Senate, through a Think Tank that took place on February 24th, 2020. Details of the topic questions and from the Think Tank discussion can be found within APPENDIX B.

A.3.3. Other Engagement

A cross-topic discussion took place with members of the Black Faculty and Staff Caucus. This meeting was attended by team leads from across several self-study areas. However, as there is considerable overlap between our topics, it was a valuable discussion.

A.3.4. DFA and DSU

Attempts were made to engage with both the Dalhousie Faculty Association (DFA) and the Dalhousie Student Union (DSU). Neither expressed an interest in sending representation to engage with the self-study team.

The DFA expressed an interest in reviewing any documents, after the fact, for consistency with the Collective Agreement. Their primary interest is to be able to address any suggestions that might have intersections with the Collective Agreement. These intersections would be in areas that might impact, among other things, workload, intellectual property or academic freedom.

While DSU did not explicitly engage with our team, we were thankful to have both an undergraduate and graduate student member of our self-study team, both of whom were dedicated members of the team throughout this process. Additionally, we valued the contributions of DSU representation on Senate that contributed to the Think Tank session (Section A.3.2).

A.4. External Scans

In addition to wide internal engagement, each of our four subgroups engaged in an external scan of what other universities are doing in this space. Details of such is incorporated into the thought paper presented.

APPENDIX B. Summary of Senate Think Tank

B.1. Questions for Senate Think Tank Discussion Groups

For each of the following topics, groups tackled the following:

- Explore the existing Dalhousie advantage (spaces where Dal currently shines);
- Identify the key opportunities (spaces where Dal can/should shine) in general, as well as those that might have a greater EDI impact; and
- Identify the key visions (longer term big/bold ideas) for Dalhousie’s future.

As the mission was to help identify horizon goal, we attempted to leave barriers out of our group discussions and focused on long-term opportunities. However, as we recognize that barriers and next steps are part of our day-to-day realities, we collected ideas for “what can be done in the short term / immediate steps for short term success” via provided post-it notes.

Descriptions of the discussion topics follow:

B.1.1. DISCUSSION 1: Changing Needs of the Learner

What would an enhanced user experience for student learning look like?

- Through the lens of a competency-based model for learning?
- In light of an ever-changing landscape of needs (4th industrial revolution)?
- Considering the need for more durable skills (soft skills) in our graduates?
- How would this impact EDI?

B.1.2. DISCUSSION 2: Curriculum changes needed to support learner needs

What would an enhanced user experience for instructor teaching look like?

- Through the lens of a competency-based model for learning?
- In light of an ever-changing landscape of needs (4th industrial revolution)?
- Considering the need for more durable skills (soft skills) in our graduates?
- How would this impact EDI?

B.1.3. DISCUSSION 3: Instructor needs as a result of changing needs of learner

What does the instructor development landscape look like in the future?

- Through the lens of a competency-based model for learning?
- In light of an ever-changing landscape of needs (4th industrial revolution)?
- Considering the need for more durable skills (soft skills) in our graduates?
- How would this impact EDI?

B.1.4. DISCUSSION 4: Institutional opportunities in teaching and learning

What does the learning experience look like if we stepped out of the 12-week model?

- What are our opportunities in adopting competency-based models for learning?
- In light of an ever-changing landscape of needs (4th industrial revolution)?
- Considering the need for more durable skills (soft skills) in our graduates?
- How would this impact EDI?

B.1.5. DISCUSSION 5: Competency-based models for education & curriculum/learning

What are the roles of formative/summative assessment in the institution of the future?

- Can they be separated?
- Can they be leveraged to incorporate prior learning assessment?
- What does this look like/ what are our opportunities in the competency-based learning landscape?
- In light of an ever-changing landscape of needs (4th industrial revolution)?
- Considering the need for more durable skills (soft skills) in our graduates?
- How would these changes impact EDI?

B.1.6. DISCUSSION 6: Institutional support for interdisciplinary learning

What does true interdisciplinarity look like?

- What structures/processes/support are required to achieve this?
- Through the lens of a competency-based model for learning?
- In light of an ever-changing landscape of needs (4th industrial revolution)?
- Considering the need for more durable skills (soft skills) in our graduates?
- How would this impact EDI?

B.1.7. DISCUSSION 7: Institutional connectivity/interaction – One Dal [Off-site/ local]

How do we better facilitate cross-institution/Faculty/campus collaborations and build a sense of ONE Dalhousie community?

- In light of an ever-changing landscape of needs (4th industrial revolution)?
- How would this impact EDI?

APPENDIX C. Needs Map

Catalysts for change	Changing needs of the learner	Curriculum changes needed to support learner needs	Instructor needs as a result of changing needs of learner	Institutional change required to support these
4th Industrial Revolution	Student is NOT defined (by anything... you can be a student at any point, from any path, from any background)	Competency-based model	Make better use of our instructor track (non-“research” PhDs): - Scholarship of teaching and learning as a research option	Support competency-based model for education
4th Industrial Revolution	Student is NOT defined (by anything... you can be a student at any point, from any path, from any background)	Competency-based model	Required Instructor training in pedagogy, educational technology, UDL	Shift focus to be more inclusive of lifelong (mature) learners
4th Industrial Revolution	Students are learning in different ways (expect prior experience or other forms of learning to be acknowledged)	Competency-based model	Universal Design for Learning (UDL)	Support competency-based model for education
4th Industrial Revolution	Students could share/have access to office space leased by companies - Rentable start-up incubator space which students could interface with	Focus on “durable life skills”	Contextual community/industry connections	Space planning
4th Industrial Revolution	Students will be engaged by community and prepared for life	Curriculum mapping to understand interdisciplinary connections	Innovative classes	Support competency-based model for education
4th Industrial Revolution	Students will be engaged by community and prepared for life	Focus on “durable life skills”	Contextual (examples/exemplars) community/industry connections	Shift focus to be more inclusive of lifelong (mature) learners
4th Industrial Revolution	Students will be engaged by community and prepared for life	Focus on “durable life skills”	Critical/contextual thinking in instruction	Support competency-based model for education
4th Industrial Revolution	Students will be made ready for the real world with private sector problems in the classroom	Curriculum mapping to understand interdisciplinary connections	Team teaching/co-teaching	Cohesive spectrum of offerings from in-person, to blended, to online
4th Industrial Revolution	Students will be made ready for the real world with private sector problems in the classroom	Focus on “durable life skills”	Critical/contextual thinking in instruction	Facilitate cross-institution/cross-Faculty, cross-campus collaborations
4th Industrial Revolution	Students will be made ready for the real world with private sector problems in the classroom	Unique assessments	Student-driven research projects	Facilitate cross-institution/cross-Faculty, cross-campus collaborations
4th Industrial Revolution	Students will expect combined degrees	Curriculum mapping to understand interdisciplinary connections	Team teaching/co-teaching	Facilitate cross-institution/cross-Faculty, cross-campus collaborations
4th Industrial Revolution	Students will expect combined degrees	Understanding of interdisciplinary connections	Instructor exposure to related disciplines and Faculties outside of their own.	Facilitate cross-institution/cross-Faculty, cross-campus collaborations
4th Industrial Revolution	Students will expect an “innovation hub”	Degree outcomes	Contextual community/industry connections	Reshaping institutional processes for frictionless student experience
4th Industrial Revolution	Students will expect an interdisciplinary/innovative approach	Curriculum mapping to understand interdisciplinary connections	Innovative classes	Facilitate cross-institution/cross-Faculty, cross-campus collaborations
4th Industrial Revolution	Students will expect an interdisciplinary/innovative approach	Curriculum mapping to understand interdisciplinary connections: - Course to Program to Degree - Program mapping facilitates interdisciplinary links between areas - Allows for better understanding of learning outcomes	Instructor exposure to related disciplines and Faculties outside of their own.	Facilitate cross-institution/cross-Faculty, cross-campus collaborations
4th Industrial Revolution	Students will expect to be met where they are (location and/or ability)	Competency-based model: - Students learn at different speeds - Inclusive - Allows for prior experience or other forms of learning to be acknowledged - Separates learning from assessment	Instructor training in pedagogy, educational technology, UDL	Support competency-based model for education

Catalysts for change	Changing needs of the learner	Curriculum changes needed to support learner needs	Instructor needs as a result of changing needs of learner	Institutional change required to support these
4th Industrial Revolution	Students will expect to be met where they are (location, interest domain and/or ability)	Degree outcomes: - Could allow for prior experience/other forms of learning - Graduate attributes	Required Instructor training in pedagogy, educational technology, UDL	Shift focus to be more inclusive of lifelong (mature) learners
4th Industrial Revolution	Students will want to gain durable skills (All contribute to a holistic person)	Focus on "durable life skills"	Critical/contextual thinking in instruction	Shift focus to be more inclusive of lifelong (mature) learners
4th Industrial Revolution	Students will want to gain durable skills (All contribute to a holistic person)	Focus on "durable life skills": - Critical thinking - Soft skills - Oral/written communication - Teamwork - Leadership	Contextual (examples/exemplars) community/industry connections	Shift focus to be more inclusive of lifelong (mature) learners
4th Industrial Revolution		Curriculum mapping to understand interdisciplinary connections	Contextual community/industry connections: - Instructor/sessional changes	Facilitate cross-institution/cross-Faculty, cross-campus collaborations
Change learner expectations	Student is NOT defined (by anything... you can be a student at any point, from any path, from any background)	Diverse methods of content delivery	Required Instructor training in pedagogy, educational technology, UDL	Reshaping institutional processes for frictionless student experience
Change learner expectations	Students will expect different opportunities to demonstrate knowledge	Unique assessments: - peer assessment	Innovative classes	Support competency-based model for education
Change learner expectations	Students will expect to be met where they are (location, interest domain and/or ability)	Degree outcomes: - Could allow for prior experience/other forms of learning - Graduate attributes	Required Instructor training in pedagogy, educational technology, UDL	Shift focus to be more inclusive of lifelong (mature) learners
Change learner expectations	Students will want to gain durable skills (All contribute to a holistic person)	Focus on "durable life skills": - Critical thinking - Soft skills - Oral/written communication - Teamwork - Leadership	Required Instructor training in pedagogy, educational technology, UDL	Make better use of our instructor track (non-"research" PhDs)
Climate change	Students will be engaged by community and prepared for life	What's the carbon footprint of a class and curriculum?	Critical/contextual thinking in instruction	Carbon-neutral or carbon-negative campuses
EDI	Need for accessible/inclusive classrooms	Competency-based model: - Students learn at different speeds - Inclusive - Allows for prior experience or other forms of learning to be acknowledged - Separates learning from assessment	Universal Design for Learning (UDL)	Support competency-based model for education
EDI	Need for accessible/inclusive classrooms	Diverse methods of content delivery	Universal Design for Learning (UDL)	Cohesive spectrum of offerings from in-person, to blended, to online
EDI	Need for accessible/inclusive classrooms	UDL/Accessible materials	Active learning in the classroom	Cohesive spectrum of offerings from in-person, to blended, to online
EDI	Need for accessible/inclusive classrooms	UDL/Accessible materials/Open Educational Practices	Active learning in the classroom	Space planning
EDI	Need for accessible/inclusive classrooms	UDL/Accessible materials/Open Educational Practices	Universal Design for Learning (UDL)	Accessible campus

Catalysts for change	Changing needs of the learner	Curriculum changes needed to support learner needs	Instructor needs as a result of changing needs of learner	Institutional change required to support these
EDI	Need for accessible/inclusive classrooms and online learning spaces	UDL/Accessible materials/Open Educational Practices	Required Instructor training in pedagogy, educational technology, UDL	<ul style="list-style-type: none"> Cohesive spectrum of offerings from in-person, to blended, to online: <ul style="list-style-type: none"> - Taking a Dal course “feels” like a Dal course regardless of mode of delivery <ul style="list-style-type: none"> - Shared experience - Allows all campuses (Halifax, Truro, online, etc.) to feel more conjoined and share students more readily - Virtual campus - Frictionless instructor experience - Quality supports for the technology that enables this
EDI	Student is not defined by age	Diverse methods of content delivery	Universal Design for Learning (UDL)/Culturally Responsive Pedagogy (CRP)	Support competency-based model for education
EDI	Student is NOT defined (by anything... you can be a student at any point, from any path, from any background)	Competency-based model	Required Instructor training in pedagogy, educational technology, UDL	<ul style="list-style-type: none"> Support competency-based model for education: <ul style="list-style-type: none"> - Must register, but the learning component would be less cost-prohibitive <ul style="list-style-type: none"> - Would draw more mature learners - Separates learning from assessment <ul style="list-style-type: none"> - Would reduce the administrative struggles of add/drop - Allows students to assess when ready (UDL)
EDI	Student is not defined by previous educational experience	Competency-based model	Universal Design for Learning (UDL)/Culturally Responsive Pedagogy (CRP)	Support competency-based model for education
EDI	<ul style="list-style-type: none"> Students are recruited in unconventional ways <ul style="list-style-type: none"> - Outside of classical streams - Med students from music school - From outreach programs (e.g. Math Circles, etc.) 	Competency-based model	Universal Design for Learning (UDL)/Culturally Responsive Pedagogy (CRP)	Support competency-based model for education
EDI	Students learn at different speeds	Competency-based model	Universal Design for Learning (UDL)	Support competency-based model for education
EDI	Students will expect to be met where they are (location and/or ability)	Curriculum mapping to understand interdisciplinary connections	Instructor training in pedagogy, educational technology, UDL	Facilitate cross-institution/cross-Faculty, cross-campus collaborations
EDI	Students will not be prohibited from being able to demonstrate their learning (in their own time/way)	<ul style="list-style-type: none"> UDL/Accessible materials: <ul style="list-style-type: none"> - Inclusive of all students (international, indigenous, disabled, etc.) - Captioning (e.g. Screenflow) - Contextualized examples - Broader community context 	Universal Design for Learning (UDL)/Culturally Responsive Pedagogy (CRP)	Support competency-based model for education
EDI	The campuses themselves need to be more accessible to students who do not live directly in the city. I.e. parking.	Diverse methods of content delivery	Universal Design for Learning (UDL)	Cohesive spectrum of offerings from in-person, to blended, to online
Open education	Need for accessible/inclusive classrooms	UDL/Accessible materials	Open Educational Resources (OER)	Become an “open” institution
Open education	Need for accessible/inclusive classrooms	UDL/Accessible materials	Smaller class sizes	Accessible campus
Societal changes looking at value of government dollars. E.g. Paying for research twice.	Need for accessible/inclusive classrooms and online learning spaces	UDL/Accessible materials/Open Educational Practices	Open Educational Resources (OER)	<ul style="list-style-type: none"> Become an “open” institution: <ul style="list-style-type: none"> - Facilitates cross-institution collaborations

Catalysts for change	Changing needs of the learner	Curriculum changes needed to support learner needs	Instructor needs as a result of changing needs of learner	Institutional change required to support these
	Students are learning in different ways (expect prior experience or other forms of learning to be acknowledged)	Diverse methods of content delivery	Universal Design for Learning (UDL)	Cohesive spectrum of offerings from in-person, to blended, to online
	Students will expect student-driven research experiences	Unique assessments	Student-driven research projects	Space planning
	Students will have access to joint calendar of all events happening at the university: - Everyone populates (e.g. Penny Drops @ International Centre) - Allows for better/less/more effective communication			Reshaping institutional processes for frictionless student experience

APPENDIX D. Vision Summaries

D.1. Visions for the Future of Learning

- 5.1. Improve access and inclusion by leveraging use of online/blended learning opportunities.
- 5.2. Prepare students so that they leave Dalhousie with a holistic package of skills (durable life skills, discipline-specific, social skills, oral/written communication, etc.
- 5.3. Meet students where they are – be that their location, time zone, interest domain and/or ability.
- 5.4. Provide students with meaningful, experiential learning opportunities suited to their discipline as well as their learning preference, including examples and issues from the private sector.
- 5.5. Dalhousie will embrace true diversity, not just by celebrating diversity, but ensuring it.

D.2. Visions for the Future of Curriculum & Practice

- 6.1. Embrace competency-based models for education.
- 6.2. Degree outcomes consciously designed to encompass discipline-specific skills as well as the durable and professional skills required by all.
- 6.3. Assessment inclusive for all learners that allows for acknowledgement of alternate or prior forms of learning.
- 6.4. Customizable degrees to suit ever-changing societal needs, and individual learner's skills and interests. This would require interdisciplinary collaboration.
- 6.5. Adopt universal design for learning and accessible/open educational practices in order to expand the reach of our instruction.
- 6.6. Diverse methods of content delivery and course delivery designed to acknowledge modern resources.

D.3. Visions for the Future of Teaching at Dalhousie

- 7.1. For Dalhousie to be a leader in the successful delivery of online/blended courses at both undergraduate and graduate levels.
- 7.2. Support student learning through creation of a uniform online learning experience.
- 7.3. Create a thriving community of practice and knowledge repository of pedagogical innovation.

D.4. Visions for the Future of the Institution

- 8.1. One Dalhousie
- 8.2. Develop a virtual campus.
- 8.3. Support a frictionless experience for students and faculty.
- 8.4. Flexibility for interdisciplinary programming.
- 8.5. Embrace our status as a research institute.
- 8.6. Offer a spectrum of credentials through multiple modes of delivery.
- 8.7. Support a competency-based model for education.
- 8.8. Allow greater access to higher education through open education frameworks.
- 8.9. View learning as an ongoing process: separate instruction from assessment.