

UBC's Pivot to Emergency Remote Teaching and Learning: Perspectives on the Transition at the Vancouver Campus¹

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When normal ended, what happened? In mid-March, 2020, we collectively pitched over a COVID cliff — into physical distancing, hand hygiene, contact tracing, bubbles, and eventually face coverings. Simultaneously the world of teaching and learning changed, abruptly. But how exactly? Herein we report on educational changes at UBC-Vancouver, when the Sars-CoV-2 virus demanded action. Our intent is to highlight the experiences of faculty, staff, and students, with attention to how things changed and what this might mean for the future of teaching and learning in higher education.

Historical context provides perspective. In 1918 the H1N1 influenza virus killed upwards of seventy-five million people worldwide.² Vancouver's first case was recorded on October 5, 1918, with the first death occurring on October 10. UBC suspended all classes from October 20 to November 26. December exams were postponed until the first week of February, 1919, and the second term was extended by two weeks. Three UBC students died (Wodarczak, 2020).

COVID-19 appeared in BC in late January of 2020, with the first confirmed case involving community transmission recorded on March 5. The first death in BC, and in Canada, came on March 9. Exactly one week later, after protracted discussions with public health officials, UBC pivoted from face to face teaching to emergency remote instruction in almost all classes. The official announcement on Friday, March 13, spoke of a “shift in delivery” as the university “transition[ed] to online classes effective Monday March 16, 2020.”

No single perspective can tell us what subsequently happened to teaching and learning across the university, especially in this time of massive, sudden change. In light of the differing views that people will necessarily have about what transpired, we use evidence from multiple sources, including personal interviews with faculty (N=57), senior administrators (N=12), and learning support professionals (N=8), questionnaires completed by students (N=1,207) from over fifty randomly sampled courses, and administrative data collected from IT units, learning analytics, and the Registrar's Office. Even with this wide cross-section of views, and some of the best evidence available, our account remains as a partial reckoning of the transition. More details explaining our methodology, and the testing of its accuracy, appear in an appendix.

¹ We are grateful to those we interviewed for their observations. Co-operation during a busy time was exceptional. The insights captured herein stem from that co-operation. Dr. Lisa Chang managed the research project with Daphne Chalmers and Hannah Exley serving as top-notch interviewers. Hailey Craig, Jennifer Vincent, Ricardo Serrano, and Sahir Moosvi provided excellent support. Jeff Miller, Adriana Briseno-Garzon, and Craig Thompson helped especially with issues of research design, and Craig with data analytics as well. We gratefully acknowledge the financial support provided by UBC-V via the Teaching and Learning Enhancement Fund (TLEF).

² The 1918 influenza pandemic led to establishing the UBC baccalaureate Nursing program, a first for the British Empire (and 2020 was coincidentally WHO's International Year of the Nurse and Midwife). Often called the Spanish Flu, this misleading label occurred because Spain first reported cases, not because it was the pandemic's origin.

Background

Naming frames understanding. While the pivot to remote teaching and learning can be described as a transition ‘to online classes,’ as did UBC on March 13, a more appropriate phrasing for the mid-March shift might be ‘emergency remote teaching’ or even ‘improvised instruction.’³ The latter two phrases more carefully capture what faculty reported doing, what students say they experienced, and what instructional design professionals and administrators faced. Furthermore, the idea of ‘remote instruction’ separates what UBC did in a large majority of courses in Term 2 from those courses that were already using robust, fully online delivery from the Term’s outset. The differences between these two forms of instruction are substantial.

Context matters. The events described herein unfolded in the face of a rapidly accelerating global health emergency. With 20-20 hindsight it is easy to question or critique how UBC-V responded but it is crucial to remember that the timing, force, and effect of COVID-19 was impossible to anticipate (at least for most mortals) and equally challenging to navigate. Prior to the pandemic, academic continuity had been grappled with at many universities, including UBC, although more often as a planning exercise than as an actual response to a crisis (e.g.: Katrina and the University of New Orleans or the University of Hong Kong and H1N1 2009).⁴ In the heat of our COVID-19 crisis this required making consequential decisions in a sea of uncertainty with no experience to rely on. Further, the way forward was often contingent on external advice, and especially official guidance from public health officials and various levels of government.

Summarizing homogenizes. Trying to summarize responses, experiences, and perspectives risks obscuring heterogeneity, especially in times of rapid change. Some readers will be frustrated that our aggregated descriptions are too coarse, missing nuance and granularity. Others will be impatient with sketches of differences and specificities, wanting instead to know the big picture and any key lessons. This paragraph foreshadows both — there are some big picture lessons but they can be painted too broadly to miss the scattered, disparate nature of much that transpired in March and April, 2020.

³ Dating too is important, in addition to naming. UBC was caught in a timing dilemma. Some members of the university community strongly advocated for an earlier shift to online instruction but other provincial post-secondary institutions and at least two provincial Ministries were reluctant to act earlier. Laurentian University in Ontario shifted classes online as of March 12, reported in *University Affairs* as the first Canadian university to “have announced the cancellation of in-person classes.” We use March 13 as the focal point for UBC’s COVID pivot, but for the record we note the following: As of January 28, 2020, a committee to monitor the yet-to-be-named pandemic had been formed in the Provost’s office and Safety and Risk Services (the latter responsible for pandemic risk management). Some of UBC-V’s earliest pivot-related actions occurred in the student exchange portfolio where ‘study abroad’ is organized. As of January 20, 2020, the Student Safety Abroad Team was actively reviewing how to proceed given Sars-CoV-2. By January 30 the exchange office had pivoted so that non-Chinese nationals in China were supported to return home and Chinese nationals were being advised to follow local guidelines (or to return to Canada if they desired). By March 2 students in South Korea and Italy had been encouraged to return home. As an aside, UBC-V financially supported 293 students to return from exchange at a cost of about \$468,000.

⁴ Even this continuity planning was almost exclusively focused on disruptive events that were immediate emergencies with relatively predictable post-event outcomes and issues (e.g., earthquake scenarios). Both the duration and uncertainty of the COVID-19 crisis has required a very different approach. Put a little too cutely, it was a shift from ‘best practices’ to ‘stressed practices.’

Supply Side versus User Side: Perhaps of necessity, a clear priority was given immediately to supply side issues. The university quickly ensured that the KeepTeaching website, <https://keep-teaching.ubc.ca/>, was available soon after the decision to stop face-to-face instruction (a key marker of staff preparedness was that the site was in preparation well before March 13). Keep Learning (<https://keep-learning.ubc.ca/>) came soon thereafter but the stress on the former website was noticeable.⁵ In part this was because faculty responsible for delivering content were desperate for know-how, tools, and directions. In part, though, it may have also been due to an assumption that students were more capable of mastering a digitally-enhanced world of virtual learning than were faculty of building and delivering it.

The Big Picture

Several major themes dominated what we heard from our interviews with faculty instructors, learning support professionals, and administrators, as well as from the self-administered questionnaires that were completed by students and teaching faculty.

Rapid Change, by People, is Possible

In reflecting on what they had heard from the multiple people with whom they spoke, our interviewers captured two powerful, overarching themes in their post-interview summary notes: “The pride instructors, administrators, and instructional support personnel had in their performance ...” and their appreciation that “an institution the size of UBC-V could pivot so swiftly into a new mode of instruction.” Universities, especially large, established ones like UBC-V, are often caricatured as ponderous, slow bureaucratic dinosaurs. Moving thousands of courses online within a few days shows a nimbleness, and a preparedness, few would have anticipated. People felt proud when individual efforts fused collaboratively to create major social change.

Unanticipated ‘Red Tape’ Consequences

This rapid transition to remote instruction, however, threw up ‘red tape consequences’ that had to be creatively managed. The pandemic made old rules precarious – on academic progression, course withdrawals, and grade allocations – and we were nearing the end of a term. In the face of widespread uncertainty about their educational careers, students were presented with a series of newly crafted options that allowed them to make reasonable choices about how to continue their learning, or not. It might be hard to overemphasize how important this was to students’ immediate well-being, but also to their ability to plan for the future, short and long term (and is probably reflected in strong summer and fall enrolments). It was UBC-V personnel in a diverse array of positions who constructed and sustained both remote instruction and its academic rules (see “Academic Concessions” below). Recognizing inequalities that meant different students would be impacted differently, depending upon their personal resources and support networks, discretion was optimized in adjudicating policy responses. Much credit deservedly goes to

⁵ Both websites had different labels initially — KeepOnTeaching and KeepOnLearning, respectively.

faculty members for transitioning their courses, but this credit can have the deleterious effect of making less visible the substantial role staff also played.

Deeds Match Words' on Hardship

In what we heard from students, many, although certainly not all, complimented UBC-V for responding proactively. They were especially appreciative of course instructors, but some were also alert enough to acknowledge that others in staff or leadership positions provided invisible assistance by the creative reworking of rules. Meeting student emergency bursary criteria was made more flexible, the weighting of final exam grades was eased for many students, moving home was made easier, and concessions on some costs (e.g., meal plans, exercise memberships) were made more flexible. Students, of course, had things to complain about, but they were balanced in their assessment (good critical thinkers!). In interviews, issues of student hardship clearly jumped out as a focal issue for faculty, administrators, and learning support specialists. Almost everyone pointed to actions they had taken to help stressed-out students, although everyone also wished to have done even more. Both in words and deeds, issues of inequality among students were recognized. We not only heard a lot about this in our interviews, and in student feedback, but as we show below, good action followed the talk. Hollow rhetoric, or PR spin, was decidedly lacking, unnecessary in the face of concrete, rapid action.

Remote Working Works, but Unevenly

Many people reported, often with surprise, that they were impressed with how productive they were able to be when working from home. In part, this was crisis-inspired since we all had to band together in making the best of a bad situation – plus, our expectations set a low bar. But remote effectiveness was not uniformly the case, and clearly this links to the inequalities we noted above. Working from home brought challenges to some — being a lone parent and/or caring for an elderly parent or disabled child without the usual help from others illustrates the case. Suddenly ‘home’ became a place where multiple identities coalesced — simultaneously being a student/faculty member, being a parent/caregiver, sometimes homeschooling, and being a research scholar. No doubt this was also a gendered experience. For many staff, students, and faculty this all created tension, tension that over the longer run will be unsustainable without reforms and supports.⁶ The idea that “remote working works” can also exaggerate since two forms of work – teaching and learning – were reported almost universally as being challenging. Many reported that teaching and learning used to be fun, not work, but under the pandemic they both became work. In short, people reported an up-beat message, but there were challenges, and those challenges were unevenly distributed.

⁶ Our subheading, ‘remote working works,’ obscures many challenges and complexities that students, staff, and faculty all initially faced, and some continue to face. We address issues that students faced around remote learning environments below. To assist in the strong efforts of individuals to make remote working work, UBC-V also supported, for example, equipment loans and purchases, and set up special fire-walls for students in certain countries (where course topics were sometimes under legal restrictions).

Delegation has Advantages

Who runs the university? When it comes to teaching and learning this question has no clear answer, at least in the views of those we heard from. Many of the operational decisions most clearly affecting faculty and students were made within the Faculties, and especially at the Table of Associate Deans, Students/Academic. Even the shift to remote instruction was often seen, at least by some faculty members and several Faculty leaders, as a pivot that was made in the Faculties before it was announced as a university decision.⁷ Although this caused some frustration — “we were ready, why were people in the Centre procrastinating?” — it was also understood that decisions had to work across Faculties in a consistent manner so as to be fair to all, and especially to students taking courses in multiple Faculties. This delegation of authority, especially when it incorporated consistency for all, was a clear strength in making the transition work as effectively as it did. Our section below on academic concessions sketches some of this delegation.

Professional Staff and Their Largely Invisible, But Critical, Work

The organizational know-how and situated knowledges of staff were critical to any successes of the teaching and learning transition. Faculty members played a front-line role in the pivot from face to face (F2F) to remote instruction, and their efforts deserve all the accolades possible. Students too were effective in helping to smooth the transition by being determined, resilient, and compassionate. But beyond this, and often hidden by the focus on the online shift in courses, was also a remarkable transition in supporting students. This was accomplished by the largely invisible cadre of professionals who run the back end of any major organization – in this case in student services, in the Registrar’s office, the Library, technology support services, in Faculty administrative units and Departments/Divisions, and in teaching and learning units, to name but a few. Here were staff members who had the institutional knowledge so critical to allowing fairness, equity, and flexibility to reign. We heard too little about this, it rarely made headlines, but it was a constant background hum in commentary from faculty, students, and administrators.

The largely invisible role of instructional design professionals underscores this point. Here an interesting twist comes from contrasting what we heard in interviews with faculty members versus what they reported on fixed choice questions in our survey. We asked faculty “how much of the transition did you do on your own, without assistance?” – ‘all of it,’ ‘half of it,’ or ‘fully supported.’ The first category, ‘all of it,’ was chosen overwhelmingly. But when asked in an open-ended question about how they managed the transition of their course, faculty quickly, and again almost overwhelmingly, pointed to learning technology support people as instrumental (although often indirectly – KeepOnTeaching.ubc.ca was a life saver!). And, of course, behind all of this was the software / hardware infrastructure supported by both local and central IT units.

⁷ Recall timing details noted in footnote three, however.

The Academic Concession Story

One of the major concerns expressed by a majority of the administrators, faculty, and professional staff that we interviewed centred on the ability of students to cope with the sudden, COVID-induced change in their lives. As one colleague expressed it, “academic anxiety and student wellbeing was already high, and then the COVID bomb exploded.” There was a discernable shift from “helping students thrive” to “helping students cope.”

The UBC-V Academic Calendar defines academic concession as a means to support students when they “experience unanticipated events or circumstances that interfere with their ability to accomplish academic work.” COVID-19 qualified! Beyond moving classes to emergency remote instruction, academic concession procedures constituted one of the other major pivots that required critical action, especially given the heightened levels of student anxiety and depression occurring even prior to the COVID crisis.

Calls for new policy were numerous. Students and their representatives as well as some members of faculty suggested new policy. However, adjusting existing policy was the expedient approach taken. The Associate Deans (Students/Academic) took a leadership role. They were supported by academic advising staff in the Faculties, the Provost's office, and the Senate Secretariat, but it was at the Associate Deans' table that key approaches were formulated. A number of guiding principles appear to have been instrumental to their work (our summary).⁸ These included:

1. Give students every opportunity to succeed in their courses and degree programs,
2. Keep the academic term whole so that students could advance, equipped with the necessary course credits and prerequisite knowledge,
3. Strive for consistency in academic practices between courses, Departments, and Faculties.
4. Be as flexible and accommodating as possible, and
5. Provide students with options, optimizing for them both choice and information in making their own, informed academic decisions.

Given a focus on finishing the term, options such as truncating the semester or taking a hiatus to restart classes at a later point were never seen as reasonable (unlike in 1918 with the influenza pandemic). Likewise, the postponing of exams or giving any student who asked a deferred standing, was impractical, given the pandemic-induced uncertainty and the fact that many instructors and students had other summer commitments (the vast majority of which were eventually cancelled, of course, due to ongoing COVID-19 concerns). Another option that was considered but quickly rejected was to use a Pass/Fail grading system. Given the timing — three-quarters of a term's worth of work complete, but often with less than half of the course grade assigned — this too seemed inappropriate. While easy to apply, at least in theory, and certainly appropriate for many students who wanted to return to their home countries as borders closed, it was seen as unfair to students who were doing well and wanted graded course work to pursue graduate or professional programs and scholarships. There also was no existing pan-university academic policy allowing easy implementation of a P/F option.

⁸ Some of these were later embodied in the Guiding Principles document that was developed early in the summer. <https://ctlt-act-2020.sites.olt.ubc.ca/files/2020/06/Developing-guiding-principles-for-fall-instruction-6.pdf>

What actually happened was that academic concession options were expanded. No new concession policies were devised but existing ones were significantly adapted to permit greater discretion in their application. This effectively meant offering options to the entire student body that would ordinarily only have been available to students facing extraordinary personal circumstances. Academic practices changed, academic policies did not. This would seem an essentially important lesson since we know that in other jurisdictions, policy changes in the midst of crisis have caused major concerns about academic integrity and academic freedom (see Katrina-related academic changes in Louisiana).

Retroactively the UBC Senates (both Vancouver and Okanagan) approved a notation that would appear on official transcripts of students registered in the 2019 Winter session. The wording reads: “As of 16 March 2020, the COVID-19 pandemic disrupted regular academic activities. Modes of instruction and assessment were shifted to on-line activities mid-term, including changes to exam practices and weighting in some cases. Deadlines to withdraw or change to Credit/D/Fail or Pass/Fail grading were extended by some programs.”

Four specific changes were made:

Credit/D/Fail Practices

The Credit/D/Fail option was easy to implement via the Student Service Centre for most undergraduate courses. In Term 2 of 2020 this option was made available to a student throughout the term — instead of only being a registration option available before the add/drop deadline for courses, as was customary. This option exemplified principle 5 above. After the March 13 pivot, all students could choose whether they would keep their percentage grade, or, take either credit, a “D” or an “F” for each of their courses. It was also decided that students should be provided with the most information possible prior to making this decision and so students were able to choose this option even after the release of final grades. A key complication here was ensuring students were clear about the consequences of these decisions for progression to upper years / graduation, scholarship eligibility, housing, student loans, and so forth (i.e., the consequences of this decision are more complicated than most imagine!).

Course Withdrawals

With the onset of COVID-19 the options for course withdrawals were altered. Previously, withdrawals without a W were granted up until a specific add/drop date. If students wanted to withdraw past that date, and their request was approved, a W appeared on their transcript. This was, however, only available in exceptional personal circumstances. As a consequence of the pandemic, all students were allowed to make late course withdrawals, even after final grades were released, although a W would appear on the transcript. Again, there were complicated issues for progression and admission to upper level programs (e.g., entry to Engineering streams and to selective majors such as Economics).

Deferred Standing

Academic policy allows that deferred standing (SD) may be granted “when a student has a valid reason for not completing course requirements as scheduled.” More SD’s might have been offered to students because of the variable circumstances they faced although this was not a preferred option — delaying course completion to a later date was seen as fraught with too much uncertainty to be a viable solution so the prior two options were preferred.

Final Exam Practices

Faculties adopted different approaches to final examinations.⁹ As a large and diverse faculty, Arts left exam decisions up to individual Departments and instructors. Some instructors cancelled exams, or changed their format (see below). Applied Science encouraged instructors to offer students at least two weighting options when it came to final exams, but emphasized that exams were critical for many courses (often for accreditation reasons). Facing significant concerns about academic misconduct, the Faculty of Science strongly recommended a 5-30 rule for all courses, meaning all final exams would be worth either 5% or 30%, depending on which option resulted in a higher grade for each student. The purpose of this rule was threefold. It helped to ensure students kept working to the end of term so that they would learn the necessary material (principle 1), to mitigate academic pressures so that students would be less likely to commit academic misconduct, and to reduce stress for students in a difficult time.

How many concessions were made?

Using data from Records and Registration we compared the use of both the “W” and the “Credit/D/Fail” options between the winter terms in 2018 and 2019 for all courses in five Departments.¹⁰ As an aside, we could not compare “SD” assignments because these are not permanently recorded (i.e., they disappear from a student’s record as courses are completed, or deadlines hit).

Rates of course withdrawal increased, although from a low base. As the middle column of Table 1 on the next page shows, rates of withdrawal doubled from Term 2 2018W to Term 2 2019W, although this was more pronounced in Arts courses than in either Applied Science or Science (we understand this increase as most likely due to COVID-19). The rightmost column reports on the Credit/D/Fail policy. In comparing withdrawals (i.e., “W’s”) with C/D/F usage, notice that in 2018W the latter was the preferred option. This reversed in 2019W.

In 2019W, use of the C/D/F option was the major way students chose to navigate concessions, if concessions were necessary. In 2018 very few students in Chemistry or Civil Engineering courses used this option, and fewer than 1 in 100 students in the three Arts Departments used this option. The 2019 rates are markedly different. Over three percent of students in Chemistry or

⁹ Three Faculties were involved in our research, Applied Science, Arts, and Science. See the methodological appendix for our rationale.

¹⁰ We focused on five Departments for several reasons. We needed to concentrate our scarce resources on a small number of academic units (more focus, less scatter), allowing us to use more controlled comparisons than if we had randomly selected any courses, while sampling a sufficient number of students in selected courses, and interviewing people who were in linked units (e.g., ‘bundled groups’ of students, faculty, administrators, learning specialists).

Civil Engineering courses used the C/D/F option, and between roughly four and six percent of students in History, Political Science, or Psychology courses choose this option. The magnitude of this change can be captured as follows: in 2018W just over 200 course enrollees used the C/D/F option whereas in 2019W this route was used by over 2,200 course registrants (over a ten-fold increase). Put differently, between four and five percent of students chose the C/D/F option in 2019W — almost one in twenty.

Table 1: Academic concession options chosen by students, 2018W versus 2019W (Term 2)

	Enrolment #		Withdrawal %		C/D/F %	
	2018W	2019W	2018W	2019W	2018W	2019W
All U/G Courses in:						
Chemistry	10,715	10,744	1.28	1.91	0.07	3.33
Civil Engineering	5,093	5,145	0.20	0.74	0.00	3.79
History	4,484	4,243	2.48	4.55	0.80	4.24
Political Science	7,682	7,402	1.50	2.99	0.25	4.20
Psychology	17,853	19,332	1.94	2.85	0.78	6.19
Data Source:	Registrar's Headcount data on enrolment, withdrawals, and Credit/D/Fails in all undergraduate winter session (T2) courses in selected Departments. NB: Numbers represent course registrants not Department majors so, for example, a student in a History course could have been from any Faculty.					

The Communications Story

Communicating coherently about COVID-19 communications at UBC-V is near impossible! This is telling. From our interviews we heard an amazing number of variants regarding what people said they received as internal UBC-V communication. Most people agreed on the timeline of the main messages, but beyond that there was not much agreement. Descriptions about communications varied from “very effective” and “pretty good,” through to “disjointed,” “piecemeal,” and “poor.”

Four key things help in understanding why we heard mixed messages. First, as a fairly decentralized organization, especially when it comes to teaching and learning (as opposed to promotion and tenure decisions, for example), communicating to everyone with a uniform voice, and message, is extremely difficult. Second, there were always more questions than answers, which had the effect of people searching for answers in multiple places, often not realizing that answers were as yet unavailable (e.g., classes were going online, but how were exams going to be handled?). Third, different audiences wanted answers to different questions so that tailoring communication became essential but problematic. Students wanted to know more about travelling home and academic concessions, aligning with their priorities. While important to

faculty instructors, these were lower on their list of ‘need to know’ issues. This led to students being told certain things before faculty members learned about them. Fourth, and finally, everyone wanted a hand in shaping messages. Communicating was thus a complex affair where not only did various levels of UBC governance want to have a say, but so too did the Province. Multiple message-managers made crafting difficult, approval complex, and timing complicated.

These multiple layers to decision making and communication created problems. One of the difficulties with communication was that different parts of the university were reacting to the pandemic in different ways and at different speeds. The official announcement about transitioning to online instruction came at 5:00 pm on Friday March 13. However, several Faculties and some Departments had already begun the process of transitioning all, or the majority, of their classes to remote emergency instruction on March 11 and 12.

The main university-wide communication process started with a March 12 bulletin update from the President stating that there could be no face-to-face classes where enrolment exceeded 250 students, following public health decisions to limit the size of gatherings. A second bulletin was sent out at 5pm on Friday, March 13th stating that all classes would be online as of March 16. For faculty members, this latter message cascaded through Faculties and Heads of Departments, but at different rates as some units passed information along more efficiently than others.

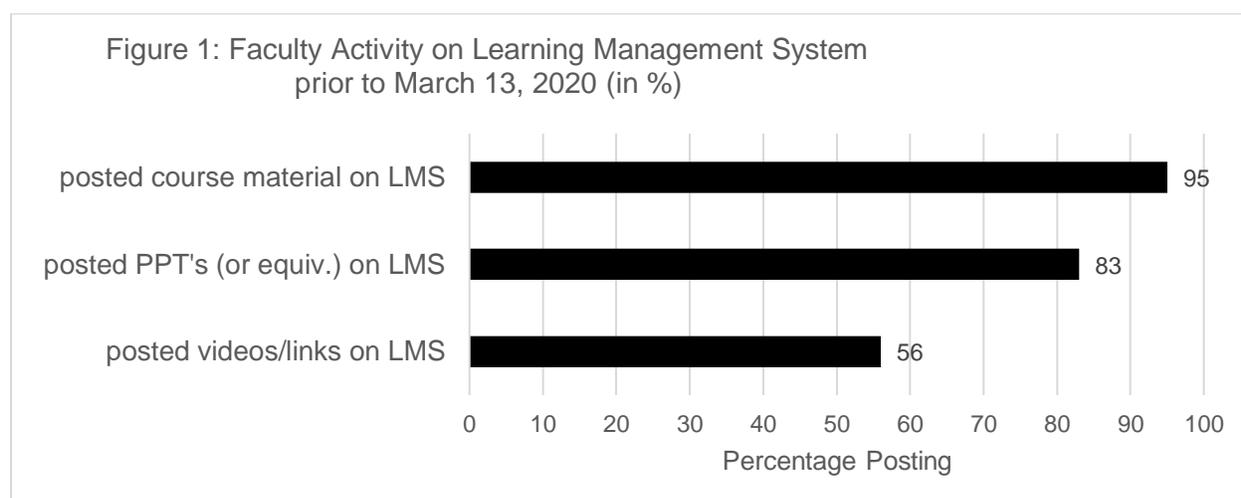
There was an evolving FAQ page as part of a website with announcements and updates as well as official and unofficial social media posts. Key announcements often led to a host of new questions that were often unanswerable and uncertain due to the rapidly evolving situation. Social media fed on this thirst for knowledge and much fabrication resulted. Furthermore, the university was not making decisions in isolation. Decisions were made on the advice of the provincial and federal health guidelines and in consultation with the ministry of advanced education, often leading to a delay in upper administrative level decisions.

Several communication decisions were reported to us as missteps. One involved messages going to students before they were sent to faculty. This led several faculty to report being blind-sided by student questions regarding academic concessions, travel decisions, and so forth. Students often treat faculty members as ‘all knowing authorities,’ and when a faculty member offered different or vague information, this caused consternation. A second issue, and no surprise here given the times, was social media and informal communication channels. Although there were attempts to use social media as a source to push out some valuable information, often these networks (e.g., Reddit) threw up a host of vague, misleading, or totally incorrect pronouncements. A third problem had to do with the use of the cascading chain of message distribution. Some links in the chain did not work as effectively or as smoothly as they should have. This resulted in some staff and/or faculty knowing things that were still unannounced to others, adding to an already confusing situation in which rumors were rampant. Finally, the reasons for the lateness of the 5 pm Friday distribution of the official transition message were understood by many but not all. This late-in-the-day announcement marred some people’s sense of how communications actually worked overall. A foreshadowing announcement earlier that day, with a “more to follow ASAP” would have been more responsible and more effective in the eyes of some. Much communication ignored foreshadowing or ‘thinking forward’ so audiences reported being left wondering about key issues – were these issues on the radar or not? And we know about nature and vacuums!

Details of the Pivot to Remote Emergency Instruction

As noted above, on Friday, March 13, UBC asked for a “shift in delivery” from face-to-face instruction to “online classes effective Monday March 16, 2020.” Based on our admittedly small sample of 57 courses, we estimate that at least 95% of UBC-V undergraduate credit classes were able to make this transition.¹¹ In what follows, we focus on those courses that did make a transition to greater online activity (N=54), and the associated student sample drawn from those courses (N=1,069) – more details on methodology are in the Appendix.

The vast, vast majority of instructors, “kept on teaching,” with the use of online presentations via Zoom or Collaborate Ultra. But the transition was not a zero to sixty shift, or a change from ‘nothing online’ to ‘everything online.’ As Figure 1 reveals, most faculty members reported already utilizing UBC-V’s Learning Management System (LMS) as a teaching resource. So, for example, over eighty percent of faculty already posted PowerPoint slides on the LMS, or the equivalent, before the COVID pivot. Prior decisions about promoting LMS usage provided an important foundation on which to construct the COVID transition.



Source: Faculty interviews, N=54

We turn next to what a “shift in delivery” actually entailed. Here we answer the following question: When a course transitioned, what changed (beyond going online!)? First, just over one-third of instructors reported cancelling any classes (39%), and among those who did cancel a class after March 13, the number cancelled was small (of the 21 courses where classes were

¹¹ It is perhaps instructive to note why three of our 57 courses did not transition. One was a course where students met with representatives of industry as a major part of their activity. This meeting occurred over a weekend, thankfully prior to March 13, and so the bulk of the course was effectively complete when the transition occurred (no further in-class meetings had been planned). Similarly, no face-to-face meetings were planned in a second course where the faculty member had already designed a web-based collaborative project that students were to complete during all of March (classes before this were F2F). Finally, a third course, with the latter part of the course featuring invited guests from the professional community, was also unaffected by the transition (most guests had already been scheduled to appear via Skype) and no examination had been planned for the course. Note we choose to exclude laboratory courses from our sample, many of which did not transition.

cancelled, nine had only one session cancelled, eight cancelled only two or three classes; and, of course, some courses would have been cancelled for various reasons even without COVID-19).

An alternative appreciation of changes subsequent to March 13, comes in examining revisions to courses. Table 2 details these changes. Very few changes were made to course learning objectives after the transition (7%), although in most courses some changes to assignments were made (66%), some changes to the weighting of evaluative components were made (61%), and just under 50% of colleagues reported some change in grading standards (always to more lenience). Finally, one third of instructors reported changing course topics, almost always to the effect of reducing some planned content. Most of these changes, and most of the comments that teaching faculty made about course changes, suggest that while the disruption was major, the integrity of the academic term was maintained, with some compromises having to be made. Furthermore, the vast majority of courses still held a final examination (71%), and in most of these cases it was mandatory as opposed to optional.

Table 2: Changes to Course Features Subsequent to Remote Instruction Transition (in %)

	After Transition to Remote Instruction, did any course features change:					
	Classes Cancelled	Learning Objectives	Assignments	Grading Weights	Grading Standards	Course Topics
% Yes	39%	7%	66%	61%	48%	33%

An alternative appreciation of change comes from looking at special features in courses, as laid out in Table 3. This provides a before and after snapshot featuring student presentations, collaborative learning, fieldwork, and service learning. Each of these learning activities were curtailed after the pivot, but on this measure the disruption is not as great as we had anticipated. In short, at least with respect to student presentations and collaborative learning, key learning features were not abandoned, although they were modestly reduced. The use of learning technology to handle these features was likely integrated into some courses even before the pivot, but the ability to continue these is another testament to the efforts of course instructors.

Table 3: Changes in Learning Activities Subsequent to Remote Instruction Transition (in %)

	Before and After Changes in Selected Learning Activities, by Course			
	Student Presentations	Collaborative Learning	Fieldwork	Service Learning
% Using Prior	28%	24%	7%	3%
% Using After	19%	17%	2%	2%

As we noted above, in our interviews with faculty members, they reported feeling positive toward their accomplishments in executing the COVID pivot. One question on the self-administered faculty questionnaire addressed this specifically by asking whether they agreed or disagreed with the following statement: “I feel that overall I handled the course transition well.” Table 4 shows that faculty were almost overwhelmingly positive. Some of this positivity might be seen as self-serving, but we also asked students about how well they felt instructors handled the transition. Their responses, in the second row of Table 4, are almost as positive as the self-

ratings of instructors. Both for faculty and for students, there was no difference in the rating of the transition based on the gender of the instructor. Indeed, we found little sustained criticism about how the transition was managed, whether looking at the gender of instructor, their Department, the size of the course, and so forth.

Table 4: Faculty and Students' Ratings of how well Courses were Transitioned (in %)

	Course was Transitioned Well			
	Disagree	Neutral	Agree	N
Faculty	1.9	9.4	88.7	54
Students	10.8	8.4	82.0	1,098

The level of faculty effort in making the transition work is captured in the following quote from an instructor, sentiments representative of many colleagues:

“There was nothing I could have offered that I didn’t offer. I gave everything I had in me. It was a hard time.”

Student’s appreciation of this kind of commitment is reflected in official Student Evaluation of Teaching (SOeT) reports. Although we have been unable to obtain aggregated teaching evaluation reports for 2019W, there is some evidence that student evaluations of teaching were more positive during the COVID-19 term than in previous years (mostly from personal network evidence; in general, ratings of courses and instructors were higher than in previous years, but response rates were down).

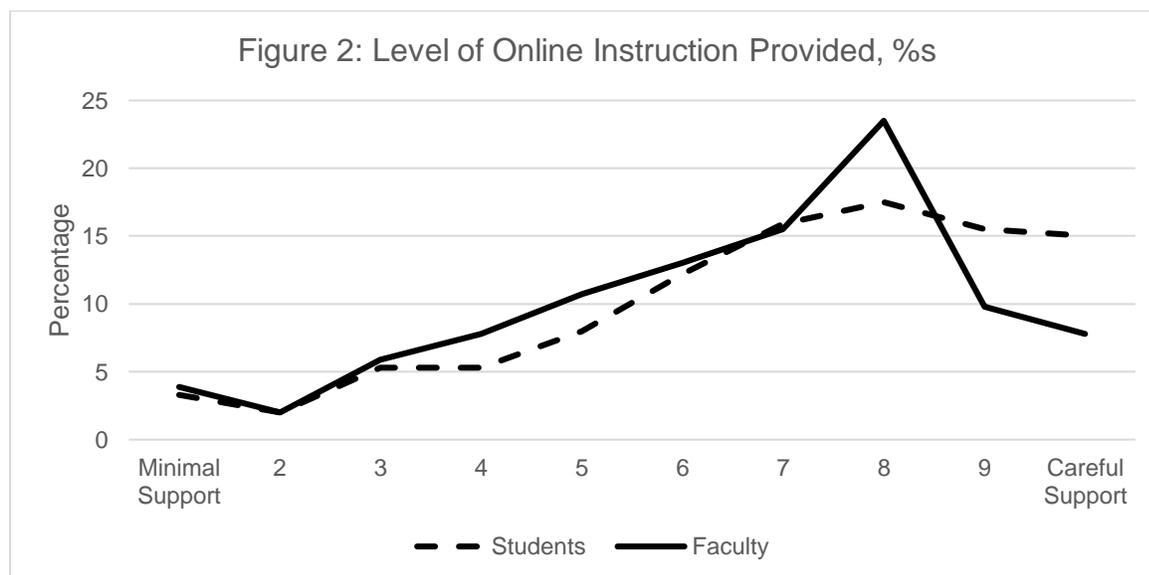
Communicating after the pivot was crucial to the success noted above and, not surprisingly given what we have seen, this appears to have been handled well. When we asked faculty to report on how often they communicated with students, we found that the majority were sending messages to students at least two or three times a week (over 70%). When asking students the same question, we found they reported less communication than did faculty (Table 5). This makes sense though since faculty would have been communicating with individual students as well as with their entire class. Overall, very few students reported receiving no communication about their courses (under two percent claimed no communication with faculty instructors).

Table 5: Communication with Students after March 13: Reports from Teaching Faculty and Students, in %

	Average Weekly Communication with Students after March 13	
	Faculty Reports	Student Reports
≤ once a week	28	42
2-3 times per week	32	49
> 4 times per week	40	8
	100%	100%
N	53	1,053

A second way to assess the level of support that students received comes from asking both students and faculty the following: “what level of virtual learning support did you receive from your instructor” [or, “did you provide to your students”]? The scale ranged from ‘1,’ “no support

provided” to ‘10,’ “careful, explicit instructions received” [or, “given”]. As Figure 2 shows, most faculty reported providing, and most students reported receiving, relatively high levels of support. For students the median level of support reported was 7, exactly the same as faculty reported (with identical standard deviations as well). This level of communication we see as critical to the generally positive reports about course transition noted above.



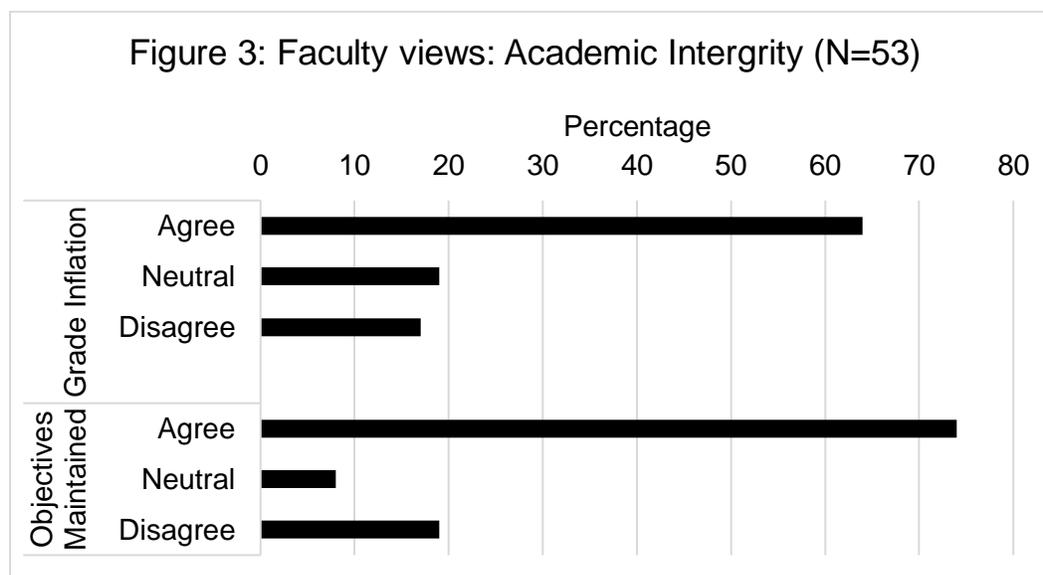
Academic integrity

Especially in our interviews with faculty and administrators, issues of academic integrity were reported to us as among the most concerning. Administrators cited this as the most frequent issue that faculty members raised with them. Keeping the term whole was a key goal, but achieving that without compromising academic standards too severely was difficult (see principle 2 under Academic Concessions).

Beyond our open-ended interview questions, we also asked faculty members whether they agreed (1) or disagreed (3) with the following statement: “My students got higher grades than they would have under normal circumstances.” Figure 3 suggests that most faculty felt this was likely the case, a finding that was consistent across Faculties (Science/Applied Science vs. Arts), instructor gender, and faculty years of experience. Some grade inflation occurred, in the eyes of our faculty respondents, but this view was not concentrated to any particular group of instructors.

We also asked more directly about academic integrity with a second statement: “I was able to stay true to my original teaching goals and objectives.” Using the same agree / disagree format as above, we found almost three quarters of academic staff agreed that they maintained their original aspirations for the course (see lower portion of Figure 3). Once again there were no particular groups reporting more or less agreement than others.

These apparently contrasting views could be interpreted as contradictory. On the one hand grades went up which implies academic integrity might have been compromised but on the other hand faculty reported maintaining their “original teaching goals and objectives,” implying that academic integrity was not compromised. In our view faculty members allowed grades to inflate somewhat given the COVID-19 stress, but this probably meant being more lenient on late assignments, being more open to alternative grading weights that benefitted students (e.g., the 5/30 rule in Science), and using more discretion that favoured students. When asked directly if they “lowered standards” two-thirds of faculty members agreed but this was reported as often entailing more leniency in deadlines, assignment formatting, and the like.



Using data from 74 courses from our targeted Departments, courses common to both 2018W and 2019W, the transcript-recorded grades that students received rose from an average of 75.5% to 78.1%, for an increase of 2.6%.¹² This average increase was more pronounced in some Departments than in others (average increase of 3.7% in an App. Sci/Sci. Dept. but 1.6% in an Arts Dept.) and was slightly greater at the second-year level and lower at the fourth-year level. These actual course grades reflect the perceptions of faculty reported in the top panel of Figure 3.

A key aspect of academic integrity focuses on academic misconduct, or cheating. Student social media activity around exam time showed some, perhaps many, students worried about cheating. We questioned both students and faculty about this, asking them whether they agreed or disagreed with the following two statements, respectively:

Faculty: “I become less concerned about cheating”
 “I believe my students committed more academic misconduct”

¹² A key change between the two terms was shown in Table 1, Academic Concessions. It is possible that students who would have received lower grades in 2019W Term II might have chosen “W’s.” This could act to inflate grades so that the 2.6% increase occurs, in part, because of fewer low grades being recorded. For students who chose the C/D/F option, their grade does not appear on their transcript but it is used to compute the class average.

Students: “My instructor was less concerned about cheating”
 “I believe other students committed more academic misconduct”

The results of Table 6 suggest that students were more concerned about academic misconduct than were faculty members. When asked if others committed “more academic misconduct,” almost one-half of students agreed (48%), while only about one in five faculty members (18%) felt there was more misconduct.

Table 6: Faculty and Student Perceptions on Issues of Academic Integrity (in %)

	Less Concern About Cheating		More Academic Misconduct	
	Faculty	Students	Faculty	Students
Agree	10	22	18	48
Neutral	29	28	41	31
Disagree	61	49	41	21
Column % / N	100% / 49	100% / 977	100% / 51	100% / 985

The preceding has skirted a baseline issue. What was the quality of the learning experience, as judged both by faculty instructors and students? We asked a similarly phrased question of both groups to examine this, where respondents could agree (1), be neutral (2), or disagree (3):

Faculty: “My students received a lower-quality learning experience”

Students: “I received a lower-quality learning experience”

Table 7: Faculty and Student Judgements on “Lower-quality learning experience” (in %)

	Applied Science / Science		Arts	
	Faculty	Students	Faculty	Students
Agree	44	59	69	62
Neutral	22	21	23	19
Disagree	17	20	9	19
Column % / N	100% / 18	100% / 359	100% / 35	100% / 737

The almost overwhelming sentiment was that the learning experience declined. Exactly why this was thought to be the case remains unclear. The emergency pivot to remote instruction is almost by definition a key, and perhaps the only, reason for this mainly negative judgement. No doubt, however, there is also some sentiment that online learning provides an inferior learning experience, a sentiment that might explain the small but noticeable difference between faculty members in Applied Science or Science in contrast to instructors in Arts (69% of Arts instructors agreed the learning experience was of lower quality versus 44% in Applied Science or Science). As we will note below, Arts instructors are less sanguine than their Science peers about the effectiveness of online learning.

Student Distress and Learning

The virtual interviews with instructors, staff, and administrators clearly indicated a concern with the wellbeing of students. One faculty member expressed the distress some students faced by noting that:

“[The transition] was a real challenge for some It was difficult for [students] to be living in close quarters with young children running around, without stable Wi-Fi, trying to hand in assignments on time. This was not at all what they had planned for. For some, it was almost an impossibility.”

To follow-up more systematically on this general observation, we rely on two related measures of student learning distress. The first taps factors that cause learning distress such as living conditions. A second measures students’ reported levels of confidence in their ability to learn successfully. Both are measured by scales that are detailed in the Appendix. The first, a scale we call the Student Distress Index, asked students if they experienced any of a string of challenging conditions, from compromised internet access through to employment-study conflicts. The second, a scale we label as the Confidence in Learning measure, probed how much students felt the quality of their work suffered, how overwhelmed they felt, or conversely, how confident they were in their abilities to succeed in their academic studies.

Just over two thirds of all students reported experiencing one or more challenges, or types of distress with their living conditions, that linked to learning after the COVID transition. As noted in the Appendix, the most frequently selected impediments to learning had to do with living conditions (e.g., too much noise, too many people, no dedicated study space). Table 8 illustrates the extent to which these challenging living conditions influenced a student’s self-reported level of confidence in their learning.

Table 8: Students’ Distress with Living Conditions and their Confidence in Learning (in %)

		Student Distress from Living Conditions			
		Low	Medium	High	N
Confidence In Learning	Low	19	28	54	33
	Medium	37	41	29	36
	High	45	32	17	31
Column %		100%	100%	100%	1,029

Gamma = -.415

Those students who report experiencing high levels of distress with respect to their living conditions are much more likely to report low confidence in their learning, 54%, as contrasted with students who suffered no or low levels of distress with their living conditions, where only 19% reported little confidence in their learning. The difference in student distress makes a substantial difference to the reported level of confidence students felt in their post-transition learning. This clearly bears out the sentiment of instructors, administrators, and staff who were worried about this exact outcome.

This begs an important question. Who were the students most likely to be in distress? In trying to answer this question, we regressed student distress in living conditions on five factors that we felt a priori were likely to impact students' situations – their status as domestic or international students (ISI), their gender, their parents' (or guardians') education level, their financial situation (e.g., dependence on student loans), and their registration, or not, with the Centre for Accessibility.¹³

The most important finding in the results (see Table 9) is that only a negligible amount of the variance in student distress can be accounted for by the variables in the model. Many coefficients are statistically significant but these have more to do with sample size than they do with effect sizes. Nevertheless, we do see that international student status (ISI) is not statistically significant while each of the other individual predictors have their expected effects. Women, students registered with the Centre for Accessibility, students who have held student loans, and students who are first generation university attenders all report higher levels of distress – effects likely not due to chance. We introduced a student's year of study and their degree program as possible confounding factors in Model 2 and the explained variance increases somewhat. Notice in particular that students in Arts, in contrast to students in other degree programs, report living conditions that are more challenging (net of other factors so this is likely not an SES effect, a gender effect, or an Access-related issue). Furthermore, the individual effects seen in Model 1 remain important even after the control factors of Model 2 are introduced.

Table 9: Students' Distress in Living Conditions regressed on Six Student Attributes, with controls in Model 2

	Model 1	Model 2
Constant	1.577*	1.502*
Gender (F=1)	.403*	.290*
Domestic (ISI=0)	.077	.125
Accessibility Reg. (Y=1)	.545*	.561*
Student Loan Ever (Y=1)	.273*	.266*
Parent Ed (neither Univ=0)	-.269*	-.277*
Year of Study (1=1 st)		-.042
Arts Degree Prog (Y=1)		.434*
Science Degree Prog (Y=1)		-.088
Other Degree Prog (Y=1)		-.061
App Sci Degree (Ref. Cat.)		
R-squared (Adjusted)	.023	.041

Unstandardized regression coefficients; asterisk indicates $p < .05$; $N = 1,022$

Next, we examine the influence of student distress, and a similar set of independent variables as used immediately above, to examine what might explain differences among students in their level of confidence in learning post-March 13. Three key findings are immediately apparent in Table 10. Female students report less confidence in learning, a result that holds across all three models (but a finding that could have existed prior to COVID-19 onset even though female

¹³ These factors were coded as dummy variables in the regression equations reported in Table 9, with values as indicated in the leftmost column of the table.

students typically attain higher grades than do male students). Student living circumstances post-March 13 had a major effect on their confidence in learning (and these we are confident are COVID related). Finally, and as expected, more senior students were more confident in their ability to learn after the COVID transition (a probable pre-COVID data pattern as well). One important non-finding was that students with prior online learning experience reported no more or less confidence in their ability to learn post-March 13.

Table 10: Factors influencing students' Confidence in Learning post-transition

	Student Confidence in Learning		
	Model 1	Model 2	Model 3
Constant	32.346*	35.689*	33.946*
Gender (F=1)	-2.577*	-1.670*	-1.399*
Domestic (International=0)	.712	.889	.717
Accessibility Reg. (Yes=1)	-1.930	-.830	-1.138
Student Loan Ever (Y=1)	-.677	-.054	0.049
Parent Ed (neither Univ=0)	1.342	.788	.889
Student Living Distress Index		-2.137*	-2.071*
Year of Study (1=1 st)			.621*
Arts Degree Prog (Y=1)			-.795
Science Degree Prog (Y=1)			.753
Other Degree Prog (Y=1)			.166
Prior Online Experien. (Y=1)			.582
R-squared (Adjusted)	.021	.153	.163

Unstandardized regression coefficients; * indicates $p < .05$; $N=993$; Applied Science is the reference category for the Degree Program dummy variables.

Possible Future Impacts

We posed a variety of questions about future impacts.¹⁴ In response to an open-ended question asking about how the COVID-19 pivot influenced views about the future of online teaching and learning, we received very mixed feedback from faculty as the following quotes reveal:

“I’m much more receptive to the idea [of teaching online]. I was neutral and skeptical before but now I can see ways that it can work.”

“there is going to be a whole landscape of opportunities, more diversity, opened up both for students and faculty about how remote techniques can be used to enhance, supplement, and create different types of course delivery.”

“... it's really underlined for me the value of the face-to-face teaching and learning experience. [...] You just cannot replicate the magic of the room, the feeling in the room for both students and professors.”

¹⁴ Recall that these are perspectives as of May and June of 2020, perspectives which may have subsequently changed.

“honestly, I hope I never have to do online teaching again. [...] Online teaching is a serious detriment to what students get out of the course.”

We also asked a series of fixed-choice questions both of students and faculty about the future for online courses. Students were asked whether they strongly agreed (1) or strongly disagreed (7) with the following: “I am now more likely to take a 100% online course”. We asked faculty whether or not they strongly agreed (1) or strongly disagreed (7) with the following: “I am now more positive about the benefits of teaching online.”

Dissensus reigned. Views are very mixed on the likelihood of taking, and the benefits of teaching, an online course. Indeed, it is hard to imagine two distributions that were more spread across response categories (Table 11). Certainly, some students would have been responding with the knowledge that more online teaching was likely (but these questions were asked prior to UBC-V deciding to teach fully online in September of 2020). We also saw some differences by student characteristics, although not many. There were only minor differences among students by gender, year level, or domestic / ISI status, although Arts students, and especially students in history and political science were less likely to see online courses in their future plans. For faculty members, where the number of observations is lower and thus the results less robust, gender had little difference although historians were the most skeptical on the possible benefits of online teaching.

Table 11: Views on future of online teaching (in %)

	Level of Agreement / Disagreement with	
	Students: more likely to take 100% online course	Faculty: more positive about benefits of OL learning
Strongly agree / agree	19.3	27.2
Somewhat agree	16.8	14.5
Neither agree/disagree	15.5	21.8
Somewhat disagree	15.1	7.3
Strongly disagree/disagree	33.3	29.1
Column % / N	100% / 1,067	100% / 55

An alternative way to examine this comes from a series of questions we asked about the impact of the COVID pivot in “two to three years’ time.” We asked about six different scenarios, as depicted in the leftmost column of Table 12 (next page). Very few respondents expected the impact of the COVID pivot to have a negligible effect on teaching and learning in two to three years’ time, although students were slightly more likely to suspect “negligible change” (only six percent of faculty thought the effect would be “negligible” whereas about 11.5% of students predicted only a “negligible” impact). Most people felt the biggest impact would be on an increase in blended or hybrid courses, easily the most selected option among either students or faculty, regardless of disciplinary field. While for the most part faculty and students made similar judgements, the one place where a relatively modest difference occurs is with respect to faculty avoiding the teaching of more online courses. Faculty selected this option (about 40%), regardless of discipline, more often than did students (about 20%).

Table12: Faculty and Student Perspectives on Future Impact (2-3 yrs hence) of the COVID Pivot

	“Future Impact, in 2-3 years, of Transition to Online Learning” (% selecting option)			
	Faculty		Students	
	Science	Arts	Science	Arts
Negligible	6	6	12	11
More Hybrid/Blended	72	80	77	71
More Fully Online courses	39	37	49	45
Less Online teaching	11	0	5	7
More Students Avoiding Online Courses	40	34	26	39
More Faculty avoidance of Online Teaching	39	40	16	21
N	19	35	349	714

Reflecting on the future also led to thoughts of what we might have learned from the COVID-19 pivot in March through May of 2020. One faculty member captured the general sentiment very succinctly:

“Let’s not put too much stock in the lessons learned from the last two months, because it was chaos and we were all making the best decisions we could make at the time”

Conclusions

Most indicators show a transition that went much more smoothly than many might have anticipated. Certainly the signals of successful course transitions are many – student reports, faculty reports, SEoTs, and post-Term II enrolments. As a package these mark success beyond expectations. It was a success born of a team effort where everyone – students, staff, and faculty – took on the responsibility of finding ways to cope in the face of challenging circumstances.

If there is a major hidden theme that we heard in the full variety of reports, it would be this. Collaboration was critical. Although rarely voiced in direct, succinct ways, it was a strong undercurrent in much of what staff, students, and faculty said. Pivoting to remote emergency instruction worked because students collaborated in making it function. Likewise, faculty members acted effectively in suddenly changing course delivery and to some extent course design. Behind all of this was a wealth of professional and administrative talent that allowed this all to function relatively smoothly.

Nevertheless, the quality of the learning experience was judged by most faculty and students as low. Our evidence shows that students in stressful living circumstances were especially likely to feel that their learning was compromised. Students living on-campus in a normal academic year experience a common leveling effect whereby differences among them from outside the academy

are somewhat muted by the social organization of campus life – social arrangements of living and studying that were fractured by Sars-CoV-2.

UBC-V was fortunate to have had a relatively high level of learning technology already in use prior to the pandemic's onset. Decisions about embedding learning management foundations into the vast majority of undergraduate courses proved prescient, as evidenced by the reports of LMS use among both faculty and students prior to the Covid-19 pivot. Most faculty and students were aware, and confident in their use, of the internet, even if they were initially, and remain still, skeptical of its benefits as a delivery system for sustained learning.

The decentralized nature of UBC-V, and the trust and confidence in this arrangement, was borne out by a key regulatory response to the pandemic. That academic concessions for students were essential was obvious. What was not so obvious was how to operationalize concessions in a fair, transparent, rapid, and principled way. Dealing with the myriad of issues that concessions threw up, was handled well at the intermediary level of Faculties where, with input from the Provost's Office and affiliated units, a set of cross-Faculty accommodations were suggested in a consensual framework. For governance connoisseurs, this was the subsidiarity principle in action – solving problems at an organizational level most competent in their resolution.

Not surprisingly, given the stickiness of the problems involved, communication was cited as both a strength and a weakness. Efforts to deliver messages were frequently judged to be far stronger than were the contents of the messages themselves. In a time of uncertainty, people wanted a firmness of message that was simply impossible to deliver. As well, the number of people both searching for and delivering input about university policy was perhaps unprecedented given the ubiquity of social media as a key platform for students. Misinformation and contagion were problems.

The future of e-learning remains as contested as ever. Most students and faculty recognized that the COVID-19 pivot was not a reasonable way to judge the costs and benefits of learning on digital platforms. A hope among some was that content developed recently will be reused in the future, infused into teaching and learning via a growth in hybrid or blended courses. Clearly more students and faculty have developed capabilities to make effective use of e-learning tools than was the case prior to March 2020.

The impact of the COVID-19 transformation on teaching and learning is likely to be long-lasting, but probably overestimated in the short term. As we live through the pandemic its effects have been enormous, even within the somewhat cloistered milieu of the academy. However, the ongoing challenges of climate change, digital innovations, geopolitical shifts, and prioritizing equity, diversity, and inclusion will in all likelihood have much greater impacts on higher education in future years than will the COVID-19 crisis.

Appendix 1: Methodology

In brief we gathered evidence in the following ways:

- Faculty — interviews with 57 faculty members in five Departments, with supplementary self-administered questionnaires from 53 faculty members
- Students — self-administered questionnaires returned by 1,069 students enrolled in the courses of those faculty members we interviewed, and 138 questionnaires returned by students who were in courses where faculty members were unable to be interviewed
- Learning support specialists — interviews with eight instructional design professionals
- Senior administrators — interviews with 12 people in key decision-making roles in the Provosts Office, the VP Students Office, and three Dean’s offices
- Learning Analytics — we requested data connected with 100 courses that we sampled, data that features tool activation, distinct Canvas sessions, and other measures of online activity
- Registrar’s Office — data on course enrolments and class composition, and data on academic concessions granted to students

In detail, we did the following.

We began by treating each separate course section as the unit of analysis. Our rationale was that since courses varied by size and year level, among many other things, it would be an error to ask instructors or students “what happened in your courses?” Course variability would make responses difficult to interpret. Rather than randomly sampling from all courses at UBC-V, we decided to focus upon several diverse Departments — Chemistry, Civil Engineering, History, Political Science, and Psychology. This guaranteed a sufficient sample size across courses in Applied Science, Humanities, Social Science, and Science, while ensuring intellectual diversity across disciplines. We stratified our sampling within Departments to ensure we had a sufficient number of courses across year levels and with different enrolments. We included all lecture-type courses taught in Term II of 2020 and any six-credit courses that spanned September to April of 2019W. Details on courses and instructors were harvested from the WWW and verified with Department staff. Course selections, within the above constraints, were made randomly. By clustering by Department, we were also able to interview instructional design professionals and administrators associated with those Departments, as well as sample students from these same units in a variety of different courses (with most of the students enrolled in the courses our sample of instructors taught).

Course selection led directly to instructor selection (and to the population for student sampling). To reduce response burden, we allowed only one course per instructor to be sampled. In team taught courses, we interviewed the faculty member most responsible for content delivery in the post-March 16 period. We sent emails to faculty members asking for their agreement to participate, with reminders if necessary. The table immediately below summarizes the results of our sampling and interview requests.

Table A1: Outcomes of Requests to Faculty for Study Participation

	Completed Interviews	Agreed to be Interviewed	Declined Interview	Total Courses Sampled
Chemistry	8	9	2	22
Civil Engineering	12	13	1	23
History	13	13	4	20
Political Science	14	14	2	20
Psychology	10	11	2	20
Totals	57	60	11	105
			Response Rate = 54% (57/105)	

Notes: An interview request was sent to the instructors of 105 courses. Three people who agreed to be interviewed were unable to schedule a mutually convenient time. Of the 57 interviews, three were based on an exchange of emails. Two of these were cases where the course did not transition online and the third was because a colleague did not wish to have their interview recorded. We slightly oversampled courses in Chemistry and Civil Engineering when the initial response rate of faculty was low. Reasons for declining our request for participation varied — too busy, not in the country, worries about privacy, uncomfortable with “random trial research.” Below we discuss potential issues of sample bias in light of non-participation (we have found little sample bias).

We used virtual Zoom interviews to speak with course instructors. During the interview we also had respondents complete a self-administered questionnaire — mainly focused on attitude questions. Interviews were recorded but transcribed immediately after the interview took place. The original recordings have now all been destroyed, per our ethics approval and privacy concerns. The interview and the self-administered questionnaire took approximately 25 minutes on average to complete. We began the interviews with faculty members in early May and completed the majority of them by mid-June.

For ethical reasons involving confidentiality and privacy, we do not report data by course number. Our research ethics approval certificate was numbered: H20-01403.

For a subset of those courses in which a faculty member agreed to an interview, we also requested a random sample of students complete a self-administered questionnaire. Only a random subset of courses (N=47) was used since we wanted to spread coverage across year level and class size. We used an incentive of \$15.00 US and that too factored into our limiting student requests. If classes had fewer than sixty students enrolled, we sent questionnaire invitations to everyone in the class. With classes of over sixty students, we chose a random sample of 60 students. This disproportionate sampling was done to ensure sufficient sample sizes in smaller classes, while also maximizing the number of courses we could accommodate given time and money. We have weighted the data in order to account for the different probabilities of selection faced by students in different classes (this effectively corrects for an under-representation of students in larger classes, which tend also to be lower level classes). We screened email

addresses to ensure that students only received one questionnaire request. Although this violates strict random sampling procedures, we did this to ease response burden and avoid respondent confusion (some students were registered in two or more of the courses we sampled). Student emails were supplied by the Registrar’s Office who assured us that over 99% of students have a registered, working email address (we had very few emails bounce back for bad addresses). They also provided course enrolments, and the distributions of students by gender and ISI status (these latter two variables were used to assess the adequacy of our sampling and to test for response bias — see below). We began distributing questionnaires to students on May 25, and kept the response window open until July 21.

For seven of the originally sampled courses where a faculty member had not agreed to an interview, we also sent students a request to complete a self-administered questionnaire, again with an incentive to boost response. We did this in order to test whether faculty agreement was somehow skewed (i.e., that students in these seven courses would differ in response patterns to those in classes where faculty members had agreed to an interview – we found no evidence of this). The disposition of requests to students to complete our questionnaire is documented in the table immediately below.

Table A2: Disposition of Requests to Students to complete Self-Administered Questionnaire

	# Questionnaires Distributed	# Questionnaires Completed	Response Rate %
Chemistry	242	148	61.2
Civil Engineering	454	179	39.4
History	528	238	45.1
Political Science	475	232	48.8
Psychology	600	272	45.3
Totals	2299	1069	46.5
Supplemental Courses*	337	138	40.9

* Students in these seven supplemental courses were where we did not interview the faculty member. These were courses from across the five Departments noted in the Table immediately above.

The response rate of 46.5% for the main student survey is high by current standards and is likely a combination of two factors, the incentive used and the general bump in response rates that has been characteristic of many surveys during the COVID-19 pandemic. The slightly lower response rate in the supplemental courses, where the incentive was also used, is likely a consequence of our fielding this portion of the survey in late June and early July, so about a month after the main set of questionnaires was distributed.

An important caveat here is that not all of these responses were in fact viable. The student questionnaire was administered using Qualtrics, a software platform enabling survey research.

Students were invited to click on a Qualtrics link to begin the questionnaire and 1,207 did so (Table A2). However, some students simply opened the webpage, and answered no questions (50 students). Others answered a few questions and then stopped. In total 1,156 students confirmed they were in the course we sampled (our first question), but only 1,016 confirmed whether their course had transitioned to remote instruction (our twenty-first question). Fewer students still made it to the end of the questionnaire where demographics questions were asked. We had 968 students answering questions about gender, student status, and the like (a response rate still of 36.8%). Most students took just under twelve minutes to complete the questionnaire.

One test of the adequacy of our sample comes from comparing its characteristics with the same characteristics of the known population. In this case we examine how well the sample distributions of gender and student status (i.e., international or domestic) match with these characteristics in our population of courses where we know these two distributions based on data from the Registrar's office. Our sample, even after weighting for the differential probability of selection given class sizes, over represents women and domestic students. The overweight is about nine percent for gender, with women constituting 58% of the undergraduate course population yet comprising 67% of our sample. For student status the sample is more accurate, overrepresenting domestic students by about four percent (the sample is 78% domestic, the population about 74%). The latter is within reasonable rates of sampling error while the former reflects a typical pattern in survey research where women are more likely than men to respond. We have chosen not to correct for these response differences, and so we weight the sample only for the disproportionate sampling that we undertook (see above).

We wanted to know if the representativeness of our selected courses was influenced by whether or not a faculty member agreed to participate in our study, declined participation, or never responded to our request for participation. Table A-3 uses LMS data analytics to examine this. The three faculty cohorts in the left-most column are self-explanatory. We examined Canvas data for three dates, the week just prior to UBC's decision to pivot, the week immediately following the pivot decision (March 16), and the subsequent week. We then examined student activity in Canvas, using two separate indicators, the rate of student browsing / viewing of Canvas material and the rate of student active participation in posting or adding material (e.g., comments, videos, etc.). Both indicators are anchored at 1.00 for the March 9th week in each of the three cohorts. The other entries in the table are all relative to these baselines.

Table A-3: A Test of Sample Adequacy: Comparing Courses of Respondents, Colleagues who Declined to Participate, and those Who Chose Not to Respond over Three Successive Weeks

Learning Analytics for March 2020 by Faculty Cohort,			
Faculty Cohort	dates (2020)	Student Browsing / Viewing	Student Active Participation
agreed	Mar 9	1.00	1.00
agreed	Mar 16	1.78	11.18
agreed	Mar 23	1.87	18.11
declined	Mar 9	1.00	1.00
declined	Mar 16	1.98	8.06
declined	Mar 23	2.16	18.77
no_response	Mar 9	1.00	1.00
no_response	Mar 16	1.73	4.07
no_response	Mar 23	1.88	14.88
With thanks to Craig Thompson (CTLT) for this data.			

Among each of the faculty cohort groups, the pattern of student browsing / viewing activity increases dramatically between March 9 and March 16, exactly as expected given the pivot, with a further slight uptick for each cohort during the week of March 23rd. Most importantly the pattern of increase is almost identical for each of the faculty cohort groups suggesting that there is little difference between these faculty groups, at least in terms of how students engaged with course material. The right-most column shows rates of participation, where students had to make active contributions to the website as opposed to passively view the site. Once more we see a pattern of increase from the baseline week to the week of March 16, and then a further rise in the subsequent week. The pattern is, once again, very similar across the three cohorts. This implies there was little difference, at least among student activity, in the courses taught by faculty who agreed to being involved in our study, to those who declined, and to those who never responded. This gives us confidence that the faculty who participated were not too dissimilar from those who chose not to participate (save, obviously, from their participation!).

Student Distress and Levels of Confidence

Here we provide details on two index measures we constructed based on student responses to the self-administered questionnaire. First we detail a Student Distress scale and second we demonstrate how we created a Confidence in Learning measure.

We asked students to tell us whether they experienced any of the following challenges after the transition to remote instruction. The exact question read: “Did any of the following situations where you were living make it difficult to complete the online portion of this course?” We identified 12 challenges and asked students if they experienced a challenge we had not listed.

No internet access	Slow/limited internet access
Lack of adequate hardware/devices	Too much noise
Too many people	Food insecurity
No dedicated study space	Caring for children/relatives
Living in a different time zone (not PST)	Health impacts on remote learning
Lack of stable/consistent housing	Employment schedule conflicted with schoolwork
Other challenge	

By summing the items that students reported as challenges, including an unlisted challenge, we created an index ranging from 0 through to 13 (the highest score if all items were selected).¹⁵ The most frequently selected challenge was “No dedicated study space” (40.1%), followed by “too much noise” (37.5%), and “too many people” (28.3%). The most challenges selected by any student was eight, with about one third of students reporting no challenges.

To construct a measure of student Confidence in Learning, we used nine separate Likert scale items (1=strongly agree to 7=strongly disagree). The wording of the items is as follows:

1. I was confident in my abilities to learn well in a remote online course (Reversed)
2. I personally felt overwhelmed by the transition to online learning
3. It took no more effort to complete my coursework than before the transition (Rev.)
4. I felt I was successful as a student in this course (Rev.)
5. I found the coursework more challenging
6. I found it was more difficult to learn
7. I felt the quality of my work decreased
8. I engaged with the learning material more once the course was online (Rev.)
9. I received a lower quality learning experience

As implied above, items one, three, four, and eight had their codes reversed such that being confident or more engaged received a higher numeric score, while being overwhelmed or finding learning more difficult got a lower number score. The final scale, where responses to each item were summed, ranged from a low of nine to a high of 63. The scale reliability was .859 (Cronbach’s Alpha).

¹⁵ An important assumption in constructing the index in this way is that each challenge is equivalent with respect to its impact on learning.

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