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Dealing with disruption, rethinking recovery: Policy responses to the COVID-19 pandemic in higher education

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ABSTRACT

This paper examines policy responses in higher education in the months of March and April 2020 during the rapid unfolding of the COVID-19 pandemic. The purpose is to map responses and compare levels of coordination between three actors—the Canadian federal government, the Ontario provincial government, and Ontario's publicly funded colleges and universities—and to consider the policy implications of these initial responses for higher education's future recovery from the pandemic. Conceptualizing COVID-19 as both a wicked problem and, in the Canadian context, a complex intergovernmental problem, the paper draws on over 200 data points from public announcements made by these three actors. It uses an emergency management framework to present a chronological comparison of actors' actions during the response and mitigation phases focusing on four areas: academic mobility, teaching and learning, research initiatives, and student support. Actions to support higher education were largely dispersed and uncoordinated in the two key months of March and April 2020. Colleges and universities were proactive in restricting academic mobility, adapting teaching and learning, and providing student support. There was some alignment with the federal government's responses, although federal announcements focused more on research initiatives and, latterly, student support. The Ontario government did not appear to play a significant role in shaping the initial higher education responses to the pandemic. Despite the disconnect between responses, we argue that all three actors will play an equally critical role in the future recovery and necessary rethinking of the functions and purpose of higher education.

1. Introduction

As novel coronavirus (COVID-19) cases spread around the world, the outbreak was declared a Public Health Emergency of International Concern on January 30 2020 and a pandemic on March 11 2020 (World Health Organization n.d.). This rapidly

changing and volatile context has massively disrupted the social, economic, and political landscapes at global and national levels. The education sector has not escaped this disruption: in April 2020, 193 countries reported national level school and higher education institution closures as governments attempted to contain the spread of the virus (UNESCO 2020). A key challenge for higher education (HE) in response to the pandemic has been managing the abrupt move of teaching and learning from face-to-face to online delivery. Other issues that have arisen for HE include how to assess and evaluate students, support international students, manage travel restrictions, and ensure the psychosocial wellbeing of students, faculty and staff (Sahu 2020).

While HE around the world is no stranger to the turbulence brought on by major social, political, and economic change, the scale and scope of COVID-19 is unprecedented in an era when HE is both widely available and highly internationalized. This leads us to conceptualize COVID-19 as a "wicked problem" (Mathur 2020; Moon 2020; Peters 2017; Rittel and Webber 1973). In federal jurisdictions such as Canada, COVID-19 takes on an added level of complexity to the extent that Paquet and Schertzer (2020) argue it should be viewed as a "complex intergovernmental problem" (1). This accounts for the boundary-spanning nature of issues that nevertheless require high levels of collaboration between levels of government while at the same time challenging existing norms of intergovernmental relations. The highly autonomous nature of the primarily publicly funded HE system in Canada adds another layer to the complexity of this multilevel governance set-up.

To examine how COVID-19 is playing out as a wicked problem for HE and a complex intergovernmental problem in the Canadian context, this paper examines the responses of the federal government, the Ontario provincial government, and publicly funded colleges and universities (higher education institutions, or HEIs) in Ontario in March and April 2020, the period during which the number of COVID-19 cases in Ontario and Canada began to dramatically increase. The research questions posed are: (a) What were the responses of the Canadian federal government, the Ontario government and Ontario's HEIs to managing the impact of COVID-19 in HE in March and April 2020? and (b) What are the policy implications of these initial responses for higher education's recovery from the pandemic?

By revealing the dynamics between actors and comparing responses across the federal and provincial governments and HEIs, the paper provides insights into how policy actors are learning to live with and manage severe disruption and uncertainty (Hartley et al. 2019). This study is differentiated from previous work on wicked problems in HE—including an emerging body of literature on HE and COVID-19—with its detailed focus on two key months of the COVID-19 response in Canada. The paper was written up shortly after this period had ended when the pandemic's effects were still unfurling. In this way, the paper offers insights into the response process practically in real time, as opposed to in the future with the benefit of hindsight. That said, COVID-19 will significantly affect intergovernmental relations in Canada over both the short and long term and examining the immediate responses of these actors supports improved coordination, resiliency and adaptability in HE in an increasingly uncertain world.

2. Framework

The myriad of issues that the COVID-19 pandemic poses for HE can best be conceptualized as a "wicked problem", a policy issue that is difficult to define as each problem is unique, and essentially unsolvable owing to its complexity (Rittel and Webber 1973). Such problems are part of a growing series of policy matters that "are the most challenging because they require comprehensive simultaneous solutions to a basket of problems" (Mathur 2020, 3). In the interconnected contemporary world, the highly interdependent nature of wicked problems (Peters 2017) such as COVID-19 have created "a set of overwhelming policy challenges" (Moon 2020). However, owing to their difficult nature, "an appropriate response or solution is never clear-cut; there is little if any room for trial and error" (Ramaley 2014, 11–12) even though part of the original framing of the wicked problem was an acknowledgement of the negative repercussions for society should it be inadequately addressed (Rittel and Webber 1973).

Given that "very few policy problems are actually ever solved in any definitive manner" (Peters 2017, 387), it is instructive to examine the extent to which policy stakeholders are able to deploy "predicament thinking" (Hartley et al. 2019, 164) that embraces wicked problems as complex, long-term issues. In the context of this study's focus on HE in Canada, additional complexity is created on the one hand by the country's multilevel governance structure and on the other by the high levels of autonomy that HEIs experience (Axelrod et al. 2011). To address this, we combine the wicked problem framing with the notion of the "complex intergovernmental problem" (CIP) (Paquet and Schertzer 2020). Like wicked problems, CIPs are boundary-spanning and complicated, but they differ in that they occur within an intergovernmental system like Canada (Paquet and Schertzer 2020). CIPs "generate pressure to act in novel ways and to establish new forms of collaboration, which can be difficult even under ideal conditions" (Paquet and Schertzer 2020, 2) while simultaneously putting up barriers to collaboration by questioning dominant relations of power and norms of working relationships. Although Paquet and Schertzer differentiate between wicked problems and CIPs, we find both terms useful for our analysis and combine them. Conceptualizing COVID-19 as a wicked problem highlights the nature of the problem; the CIP framing sheds light on the intergovernmental context within which the problem is addressed. As a CIP, "the scope of COVID-19 is so profound that it engages many other aspects of Canada's intergovernmental system" (Paquet and Schertzer 2020, 3). This includes the country's primarily publicly funded universities and colleges, of which there are 46[1] in the province of Ontario.

The "decidedly conservative" nature of HEIs and their decision making processes "creates some unique challenges" (Myer et al. 2011, 61) in responding to wicked problems/CIPs, not least because the number of such problems that have directly impacted Canadian HE have to date been limited. As such, we turn to the emergency/crisis management literature which outlines how policy stakeholders in HE have responded or should respond to major issues[2]. A "traditional emergency management structure" (Worsley and Beckering 2007, 3) continues to be recommended for HE emergency planning, which should be "based on the worst scenario" and planned out as far as possible but on the understanding that responses will have to be made "under uncertain conditions" (Sharma 2020). This consists of four phases, typically identified as

Table 1. Emergency management framework and the spread of COVID-19 in Ontario/Canada.

Emergency response phase	Key features	Spread of COVID-19 in Ontario/Canada in 2020
Preparedness	Identifying risks and threats; creating procedures to map out the response.	Canada reported its first three cases on January 15. By the end of February, there were a total of 195 cases, including 49 in Ontario.
Response	A very brief phase during which the first priority is the health and safety of the community.	A total of 239 national cases, including 67 in Ontario, were reported by March 1. The number of cases increased rapidly during the month of March.
Mitigation	Clarification of key facts about the event, clear and timely communication, community support and outreach as evaluation of the incident continues.	On April 1, 17,935 cases, including 6,026 in Ontario, were reported. This increased to 60,284 nationally, including 20,144 in Ontario, by the end of April (i.e. end of data collection).
Recovery	Coordinating the development of short and long-term plans to get back up and running.	Since this paper was written during the mitigation phase, the authors are not able to predict the timeframe for the end of the mitigation phase and/or the beginning of the recovery phase.

(Phases and key features from Mann 2007).

preparedness, response, mitigation and recovery. These are outlined in Table 1, which also maps the phases against the spread of COVID-19 in Ontario/Canada.

A question arises as to which higher education policy stakeholder group(s) should lead on the response to an emergency. Araz et al (2011) suggest that it is the responsibility not of government policymakers but university administrators to make critical decisions during a pandemic, "including cancellation of classes, closure of research facilities and communication with university populations" (90). However, McCullar (2011) identifies the importance "for higher education institutions to build positive relationships with governmental agencies" (29) before a crisis occurs so that communication and operations will run more smoothly. Similarly, Ramaley (2014) believes that "the management of this kind of problem requires collaboration, a sharing of exposure to risk and an opportunity for benefit, and a willingness to learn as the problem changes" (12).

3. Methodology

Data were collected from public announcements made by the Canadian federal government, the provincial government of Ontario, and Ontario's HEIs that were published on a specified date between March 1 and April 30, 2020 where the announcement contained new information or introduced a new policy/initiative relevant to COVID-19 and HE[3].

Government data were collected via the News sections of the federal and provincial websites (canada.ca, ontario.ca). All ministries and departments were included in the search. This generated 89 data points: 54 federal level data points spanning nine ministries/departments and 35 provincial level data points encompassing five ministries/departments[4]. For HEIs, we first used an open access dataset on COVID-19 responses at 87 universities and colleges across Canada (Steele 2020), taking a snapshot on May 3, 2020. This was complemented with in-depth data collection of 13 of the 46 HEIs in Ontario (28% of the total)[5]. The HEIs were selected using purposive sampling to

represent an array of institutional types (six universities and seven colleges), size of HEI, and location in Ontario. 149 data points were collected for the 13 HEIs.

A total of 238 data points for federal and provincial governments and HEIs were collected. These entries were brought together in a database and organized by date. They were then coded according to the main HE related theme of the entry: academic mobility, teaching and learning, research initiatives, and student support. We chose to focus on these areas as they were more likely to feature in announcements made by government or HEIs (e.g. excluding internal staff announcements), deriving the themes from how the announcements dealt with either the main activities undertaken in HE (teaching, learning, research) and/or the main actors in HE (primarily students but also faculty). Each data point was assigned one code, but one entry could appear several times if the announcement spanned multiple codes.

Our data analysis confirmed that in the March and April 2020 period covered by this article, the federal government, Ontario government and HEIs were in the response and mitigation phases in line with the emergency management literature. The response phase ran for most of the month of March, peaking in the two weeks after the World Health Organization (WHO) declaration that COVID-19 was a pandemic on March 11. The mitigation phase spanned from approximately the end of March until April 30, the point at which we ended data collection. It is impractical and impossible to provide a single date for the transition: the shift in phase is useful to encapsulate the types of actions taken but, as is also recognized in the emergency management literature, there is inevitably overlap between phases.

4. Findings

Our findings are organized by the two emergency management phases of response and mitigation. Within each period, we use the codes that emerged to discuss our findings: academic mobility, teaching and learning, research initiatives, and student support.

4.1. Response phase

After the first three confirmed cases of COVID-19 in Canada were reported on January 15, by March 1 the number of cases had increased to a total of 239 (including 67 in Ontario) and on March 9 the country's first COVID-19 related death was reported. This marked a turning point, not only in the scale of the increase in confirmed COVID-19 cases but also an uptick in policy responses at the federal, provincial and HEI levels. This was particularly evident following the WHO's assessment of COVID-19 as a pandemic on March 11. The response phase lasted for most of the month of March.

4.1.1 Academic mobility
The federal government released an advisory against all non-essential travel outside of Canada until further notice on March 13 and on March 16, advised travelers entering Canada to self-isolate for 14 days (Public Health Agency of Canada 2020a). On March 18, Canada implemented a ban on foreign nationals from all countries except the

United States from entering the country "to protect the health, safety, and wellbeing of Canadians" (Prime Minister of Canada 2020b). It was clarified on March 20 that international students with a valid study permit were exempt from the travel ban (Immigration, Refugees and Citizenship Canada 2020a). Other measures announced at this time included a COVID-19 Emergency Loan Program for Canadians Abroad (Prime Minister of Canada 2020b). Although exact numbers are not available, it is known that students and researchers were among the Canadians stranded abroad (Hasegawa 2020).

On March 21, travel restrictions were extended to include all non-essential travel across the border with the United States (Canada Border Services Agency, 2020). An Emergency Order under the Quarantine Act was announced on March 25 requiring everyone entering Canada to self-isolate for 14 days. By March 30, all passengers flying in Canada were subject to a health check prior to boarding (Public Health Agency of Canada 2020a). These steps were in keeping with the federal remit to deal with areas affecting the whole country, which is beyond the constitutional responsibilities of Canada's provincial and territorial governments.

Even before these federal advisories and as early as March 2, some HEIs issued travel advisories suspending HEI-sanctioned travel to areas known to have suffered from COVID-19 outbreaks. Between March 9 and March 16, HEIs took the next step of canceling all international travel by staff and students for both academic and non-academic activities. In explaining this step, there was variation in whether this was announced as a decision made by the HEI or whether the recommendation was made in line with federal travel advisories. Other travel advisories published by HEIs between March 2 and March 16 include relaying requests from local public health agencies, updates on how the HEI was helping to bring back staff and students outside Canada, and supporting international students wishing to return to their home countries.

4.1.2 Teaching and learning

With education the constitutional mandate of provinces, it was unsurprising that there were no federal announcements affecting teaching and learning. As national borders closed, the Ontario government gradually closed public and private spaces in the province. On March 12, the Minister of Education issued a Ministerial Order to close all publicly funded schools in Ontario for two weeks following the public school March break (March 16–22) (Office of the Premier 2020a). In contrast, on March 13, the Ministry of Colleges and Universities (MCU) issued a statement noting that they would "work with Ontario's postsecondary institutions to ensure each campus has a COVID-19 response plan for academic continuity for students and faculty that does not put their health or personal well-being at risk, while ensuring students can continue to receive the world-class education our institutions provide" (Ministry of Colleges and Universities 2020a). This aligned to HEI responses in the first part of March when they informed their communities that their campuses remained open and that classes and on-campus events would continue.

There was no mention by the province of closing HEIs, even after a March 16 announcement recommending the closure of all recreational programs and libraries, private schools, daycares, faith settings, bars and restaurants (Office of the Premier

2020b). However, between March 11 and March 14, all HEIs made a remarkable pivot by canceling in-person classes for the remainder of the Winter semester[6] and in many cases issuing a short suspension of classes that coincided with all or part of the school March break[7]. The suspension was to allow faculty and staff time to transition face-to-face teaching to appropriate distance formats, which typically meant online learning. At Laurentian University, one of the campuses to identify an early case of the virus in its community, this shift was immediate and took place on March 12 after being announced on March 11 (Laurentian University 2020b). In other instances where no COVID-19 cases had been confirmed, one HEI used the WHO decision to term COVID-19 a pandemic as a reason for increasing concern and justification to cease face-to-face activities and others mentioned close cooperation with local health boards as well as the provincial MCU, despite its lack of guidance on closures.

4.1.3 Research initiatives

Although the federal government does not manage education in Canada, it has come to take on a growing role in academic research and science (Rasmussen 2008). This was evident in the scale of the federal government's research initiatives announced during this phase. On March 6, an investment of \$20 m[8] to fund coronavirus research was announced, bringing the total funding committed by the government to that point to \$27 m. The research would "help inform clinical and public health responses, develop and evaluate diagnostic tools and vaccines, as well as create strategies to tackle misinformation, stigma, and fear" (Canadian Institutes of Health Research 2020a) and was to be funded through seven federal government bodies[9].

A \$1 billion COVID-19 Response Fund announced by the federal government on March 11 included a further \$275 m to "enhance Canada's capacity in research and development, including research on medical countermeasures, including antivirals, vaccine development and support for clinical trials" (Prime Minister of Canada 2020a). The Minister of Health announced the next rollout of \$25.8 million to double the number of COVID-19 research projects on March 19, bringing the total to 96 projects (Prime Minister of Canada 2020c). The Minister of Innovation, Science and Industry sent a call to action to HEIs on March 23 to mobilize their labs, resources and expertise to be part of this fight: "We have asked them [HEIs] to identify equipment they've got like masks and ventilators. At the same time, we're looking at innovative solutions they can be part of, including 3D printing of medical supplies" (Prime Minister of Canada 2020d).

Despite the provincial government's mandate for education, we did not identify any announcements from the province related to research during the response phase.

HEIs' announcements on research during this phase focused on access to on-campus research facilities. In all cases, laboratories were closed to students and almost all research facilities were closed unless critical activity was taking place, in which case procedures were put in place for researchers to request continued access to the campus. One HEI reported a change to ethics guidance for research involving human participants wherein any proposed in-person data collection had to be transitioned to online means or suspended (Carleton University 2020). It is probable that similar guidelines were communicated internally at other HEIs.

4.1.4 Student support

The federal government's March 11 announcement of a $1 billion COVID-19 Response Fund did not directly impact student support, but may have had an indirect impact on medical students, for example, through the $500 m funding to support public health preparedness in provinces and territories for critical health care systems needs (Prime Minister of Canada 2020a). At provincial level, the announcement of $100 million of contingency funding on March 12 did not specify whether any of these funds were to be channeled toward student support. New investment of $304 million as part of the province's response to COVID-19 was announced on March 17 at the time that Ontario's first declaration of emergency was pronounced (Office of the Premier 2020c). As with the federal response fund, this package may have had an indirect impact for some students through funding provided to hospitals and public health.

HEIs responded to the immediate impact of COVID-19 on students by offering pro-rated refunds on meal plans, parking, and accommodation for the Winter semester. None offered full or partial tuition refunds for the Winter semester; some HEIs extended fee payment deadlines. Colleges led the way in loaning laptops to students who did not have access to a personal computer/device, announcing schemes between March 19 and 30[10]. Some HEIs additionally offered support for students to access the internet from home.

4.2 Mitigation phase

Having taken immediate steps to secure health and safety in the response phase, we identified the end of March as the onset of the mitigation phase. By April 1, Canada had a total of 17,935 confirmed COVID-19 cases, including 6,026 in Ontario. This phase, which lasted until the end of our data collection period of April 30, saw continued communications by actors, more community support and outreach, and ongoing efforts to evaluate the scale and consequences of the as-yet unfolding pandemic. At the end of April, the number of cases had increased to 60,284 nationally, including 20,144 in Ontario.

4.2.1 Academic mobility

In addition to the continuation of travel restrictions imposed during March, a federal Emergency Order under the Quarantine Act was updated on April 14 clarifying the conditions for a mandatory 14 day quarantine period for all those arriving in Canada (Public Health Agency of Canada, 2020b). We did not identify any new announcements on academic mobility made by the Ontario government or HEIs in this phase.

4.2.2 Teaching and learning

Once again, we were unsurprised to find that the federal government made no announcements in relation to teaching and learning. There was one announcement from the Ontario government containing various initiatives for HE but the bulk of activity in this area came from HEI actions.

At provincial level, Premier Ford announced the government's commitment "to ensure our college and university students can take their exams and complete their school year while studying remotely" on March 31 (as quoted in Ministry of Colleges and Universities 2020b). To facilitate this, the Ontario government finalized an agreement with eCampusOntario[11] to provide English and French language digital learning supports (Ministry of Colleges and Universities 2020b). In the same March 31 communique, the province also announced $25 million to support HEIs and Indigenous Institutes to "address each institution's most pressing needs in the wake of the COVID-19 outbreak such as deep cleaning, purchasing medical supplies or offering mental health supports" (Ministry of Colleges and Universities 2020b).

Having already announced plans to switch teaching and learning to distance modes beginning on or around March 23, HEI activity in the mitigation phase clarified examination options for the Winter semester and began to look ahead to the Spring/Summer semester. All HEIs canceled in-person examinations and, between March 17 and April 22, most announced alternative grading options for students in recognition of the disruption caused by the abrupt switch of delivery part-way through the Winter semester. A common response was to allow students to choose a "Pass" instead of the traditional letter grade with no impact on their grade point average. Some HEIs allowed students who would otherwise have failed a course to withdraw or have it marked as "Unsatisfactory", again with no impact on their academic standing.

Between March 19 and April 9 (most doing so at the end of March), HEIs announced that programming for Spring/Summer would be online. One HEI with a Spring/Summer course start date confirmed that, exceptionally, there would be no intake of international students based outside the country (Fleming College 2020). Between April 21 and 30, some HEIs made announcements about Fall 2020, for example confirming that all courses would be offered and/or that a return to in-class activities would be made as soon as it was safe to do so, but none had committed to a particular mode of delivery by the end of our data collection period.

There were some examples of HEIs pro-actively seeking to support the mitigation and later recovery phases of the emergency management structure during this period. For instance, one college expedited the progress of final year students on its Respiratory Therapy advanced diploma to enable them to enter the workforce while finishing their studies online (Fanshawe College 2020). As COVID-19 is a respiratory disease, this move provided much-needed new frontline workers to support the treatment of COVID-19 patients.

4.2.3 Research initiatives

Federal funding for research during the response phase was slightly augmented through cooperation with three provincial agencies, leading to a total of 99 grants and $54.2 million being funded by April 2 (Canadian Institutes of Health Research 2020b). A significant new federal research initiative was announced on April 23: a three-part national medical research strategy to address COVID-19 with a total budget of $1.1 billion. This comprises $115 million for university and hospital research on vaccines and treatments, $662 million for clinical trials "led by Canada" and $350 million to expand national testing and modeling (Prime Minister of Canada 2020h). As part of the strategy,

the government created a COVID-19 Immunity Task Force, "bringing together top health experts and scientists from leading institutions across the country" (Prime Minister of Canada 2020h).

It was only on April 12 that the Ontario government stepped into action on research, announcing plans to develop a new health data platform called the Pandemic Threat Response (PANTHR). The goal of PANTHR is to facilitate researchers' immediate access to data to support better health system planning and responsiveness (Ministry of Health 2020). On April 18, the province announced its first investment in research with a $20 million Ontario COVID-19 Rapid Research Fund to advance medical research and develop tools and resources to combat COVID-19 and other infectious diseases (Office of the Premier 2020d). The province appealed directly to the HE community "to take action in the development of innovative solutions to track and defeat COVID-19", praising the efforts already taken to support "local communities by donating lifesaving ventilators, personal protective equipment and conducting invaluable research on detection and treatment" (Office of the Premier 2020d).

As the provincial announcement indicates, HEIs were actively undertaking research and development on COVID-19 into the mitigation phase. For example, on April 7 one of the universities we sampled gave a profile of a researcher whose research group was developing a rapid DNA test for COVID-19 that can provide results within an hour (University of Guelph 2020). Another university announced a new internal research funding program of $50,000 on April 9, encouraging collaborative proposals "to help seed innovative projects that will make a difference to the current crisis, its management or recovery" (Ryerson University 2020).

4.2.4 Student support

This phase, particularly in the second half of April, witnessed the introduction of financial relief for students at both federal and provincial levels. As the following quote from Prime Minister Trudeau demonstrates, these measures turned toward the longer term recovery from COVID-19 and emphasized the future economic role played by students:

> "As you're building your future … all of a sudden you're faced with a massive crisis. This uncertainty that you feel can be overwhelming. But in Canada, we look out for each other. We value education, service, hard work. These measures will help you get through this, so that you can build that career and the future that you've been looking forward to" (Prime Minister of Canada 2020g).

On March 25, the federal government postponed Canada Student Loan[12] repayments by six months (Prime Minister of Canada 2020e). On the same day, the Ontario government announced a six month Ontario Student Assistance Program[13] loan and interest accrual relief (Ministry of Finance 2020) in an attempt to "eas[e] the financial burden on students and mak[e] sure they can complete their studies during the COVID-19 outbreak" (Premier Ford quoted in Ministry of Colleges and Universities 2020b).

On April 22, the federal government announced investments of up to $9 billion for students in three areas: government benefits, job creation, and targeted funding (Prime Minister of Canada 2020g). The Canada Emergency Student Benefit was introduced to

support students[14] who lost work opportunities or were unable to find employment due to COVID-19 (Employment and Social Development Canada 2020). Through this benefit, students had access to at least $1,250 a month from May to August 2020[15] (Prime Minister of Canada 2020g). Also announced was the creation of 76,000 jobs for young people "in sectors that need an extra hand right now, or that are on the frontlines of this pandemic" (Prime Minister of Canada 2020g). The Canada Summer Jobs program had already been launched on April 8 to create temporary jobs for students and young people and help businesses hiring students (Prime Minister of Canada 2020f). A new Canada Student Service Grant was also launched on April 22 to encourage students to volunteer for local organizations over the summer in return for a grant of $1,000–$5,000 (Prime Minister of Canada 2020g). Targeted funding in the April 22 announcement included over $75 million for First Nations, Inuit, and Métis Nation students, and nearly $300 million to pay for a three or four month extension of federally funded scholarships, grants and fellowships (Prime Minister of Canada 2020g).

The federal government also adjusted work regulations for international students. On April 8, Immigration, Refugees and Citizenship Canada (IRCC) confirmed that international students could continue to work even if COVID-19 had forced them to become a part-time student or take a break in their studies (Immigration, Refugees and Citizenship Canada 2020c). IRCC also suspended the regulation that restricts international students to working a maximum of 20 hours per week while classes are in session provided that the job was in a COVID-19 essential service or function (Immigration, Refugees and Citizenship Canada 2020b). Reflecting the shift to online learning in the response phase and the restrictions on academic mobility, IRCC further announced that online classes taken as a result of COVID-19 and online classes taken while outside Canada would not affect eligibility for the Post-Graduation Work Permit program[16] (Immigration, Refugees and Citizenship Canada 2020c).

Student support from HEIs during the mitigation phase focused on emergency bursary schemes. These were announced between March 18 and April 17, with most launched at the end of March/early April. In many cases, HEIs sought donations from alumni and others to enhance the funding available. Where amounts were published, the bursary schemes ranged in size from $100,000 to $3 m and students could apply for between $500 and $1,500 to help offset costs of food, housing, medication, childcare, access to technology, traveling home, and loss of jobs. Some HEIs were also distributing emergency food packages directly to students. Thus, for the most part, HEI announcements on student support were disaggregated from the timing of government responses. However, following the aforementioned March 31 provincial announcement of $25 m, two HEIs announced that these funds would be used to support the transition to online learning and enhanced mental health supports for students (Nipissing University 2020) or to support financial stability (Laurentian University 2020a). However, Laurentian, which received $793,000 from the fund, pointed out that "this funding will only cover a fraction of the lost revenues and additional expenses that we are accumulating in response to the pandemic" (Laurentian University 2020a).

Our findings, summarized in Table 2, reflect the main responses of the Canadian federal government, Ontario provincial government, and publicly funded universities

Table 2. Summary of responses to the COVID-19 pandemic in Ontario, Canada with implications for higher education.

Actor	Federal government	Provincial government	HEIs
	Response phase (March 1 – approx. end of March)		
Academic mobility	Ban on foreign nationals entering Canada; ban on non-essential travel for Canadians	–	Cancelation of all HEI-sanctioned travel; support for students to return home
Teaching and learning	–	Directed closure of public schools and other public spaces but not HEIs	Cancelation of all in-person classes; shift to remote delivery for rest of Winter semester
Research initiatives	$52.8 m for coronavirus research; $275 m from COVID-19 Response Fund for research and development; call to action for HEIs to mobilize labs, resources, and expertise	–	Closure of on-campus facilities with exceptions for critical research; changes to procedures for doing research
Student support	–	–	Pro-rated refunds for some non-tuition costs for Winter semester; laptop loans
	Mitigation phase (approx. end of March–April 30)		
Academic mobility	Clarification of Emergency Order conditions on incoming travel	–	–
Teaching and learning	–	Agreement with eCampusOntario to provide digital learning supports; $25 m in funding for HEIs	Clarification of grading of Winter courses; confirmation of remote delivery of Spring/Summer courses
Research initiatives	–	Pandemic Threat Response health data platform; $20 m for medical research	Research related to combatting COVID-19; internal funding schemes to support new initiatives
Student support	Postponement of Canada Student Loan payments; Canada Emergency Student Benefit; Canada Summer Jobs program; Canada Student Service Grant; $375 m in targeted funding; clarification of immigration rules for international students	Postponement of Ontario Student Assistance Program loan repayments and interest accrual relief	Emergency bursary schemes of $100 k–$3 m awards of $500–$1,500; emergency food packages

and colleges (HEIs) in Ontario as the COVID-19 pandemic rapidly developed during the two key months of March and April 2020.

5. Discussion and conclusion

Bringing together a conceptualization of COVID-19 as both a wicked problem and a CIP and drawing on emergency management literature, this study analyzed responses to COVID-19 using a chronological comparison of announcements in areas related to HE to examine the extent of coordination between actors. As illustrated in Table 2, policy responses across the response and mitigation phases were aimed at reverting as quickly as possible to business as usual, that is, to reproduce the previous system and functions of higher education. As the intensity of the COVID-19 outbreak built and in

light of the WHO pandemic declaration, the response phase focused on restricting the movement of people and closing workplaces to limit the spread of the virus.

In this phase, we found that HEIs led in taking action, followed or bolstered by the federal government's responses. For example, some HEIs canceled travel for staff and students before the pandemic pronouncement and the federal government's travel advisories were issued. On the contrary, there were no public announcements pertaining to HE made by the Ontario government during this time, which appears puzzling given the provincial government has the constitutional mandate for education. This might be attributed to the fact that Canadian HEIs, particularly universities, have historically exercised higher levels of autonomy, and/or it may reflect the initial prioritization by the Ontario government of other sectors, particularly the heath sector. The most significant action taken by HEIs during this period was the dramatic pivot from face-to-face classes to distance delivery. Not only was this transition universal among HEIs, but it was taken prior to the province's mandatory closure of all non-essential workplaces effective March 24.

We observed significant indirect support from the federal government for the HE sector through three channels: research, economy and labor market, and immigration, all of which are portfolios that fall under federal jurisdiction. Federal investment in COVID-19 related research exceeded $325 m by the end of the response phase and was accompanied by a call to action to HEIs issued directly from the Minister of Innovation, Science and Industry. The Ontario government followed somewhat later in the mitigation phase with the announcement of a new health data platform and $20 m for medical research. Limited information was available about new research initiatives or adaptations to existing research to respond to COVID-19 in HEI announcements, but at least one HEI launched an internal funding competition during the mitigation phase, in line with the provincial timing.

During the mitigation phase, the federal government turned its attention toward shoring up the Canadian economy, extending an emergency benefits package to students, launching two job creation programs for students, and announcing $375 m of targeted student funding. It also introduced changes to immigration regulations to address labor shortages in essential services as well as facilitating the retention of international students, previously identified as "ideal immigrants" for Canada (Scott et al. 2015) and the primary target of Canada's 2019–2024 International Education Strategy (Government of Canada 2019). This level of support was not matched by the Ontario government, which during this phase announced $25 m in institutional funding for pressing COVID-19 related needs plus a partnership with eCampusOntario. Only two HEIs mentioned either provincial initiative, one of which was a note that its share of the $25 m would be insufficient to cover lost revenues/additional expenses already incurred. In this phase, we once again observed HEIs taking leadership in supporting students, many launching emergency bursaries before the federal benefits and job creation schemes were announced and before the province's cash injection.

From the announcements made by federal and provincial governments and HEIs during two key months in the unfolding of COVID-19 in Ontario, Canada, we reach two main conclusions. The first is that although many actions were taken to support HE, they were largely dispersed and uncoordinated. This conforms to Paquet and

Schertzer's (2020) proposition that it is very difficult to establish new forms of collaboration, which we might have expected to find between levels of government and HEIs in dealing with novel wicked problems/CIPs such as COVID-19. HEIs were proactive in restricting academic mobility and led the way in adapting teaching and learning and student support[17], but there appears to be little connection between the chronology of HEI responses and that of the province, although some alignment with the timing of federal announcements. We also struggled to find links between federal and provincial government announcements, although there was one example of coordination with the same day announcement postponing repayments on both federal and provincial student loan programs. Across the response and mitigation phases, the Ontario government—and in particular the Ministry of Colleges and Universities—did not appear to play a significant role in shaping HE responses to the pandemic.

The second conclusion is that, regardless of constitutional responsibilities, all three actors will play an equally critical role in the future recovery of HE. There is emerging evidence that some adjustment may be in the making, for example with the July 2020 publication of detailed (if somewhat belated) guidance for HEIs during the COVID-19 pandemic (Public Health Agency of Canada 2020c). This potentially represents a shift in the intergovernmental relationship as the guidance was issued by the federal government which, as previously noted, has no direct mandate for education. This aligns to Paquet and Schertzer's (2020) prediction that COVID-19 "will significantly affect intergovernmental relations in Canada over both the short and long terms" (1). Nevertheless, the content of the guidance is predicated on a return to the previous modus operandi. This is consistent with the way that both federal and provincial governments positioned HE's role in the public announcements we studied, with policy measures aiming to continue higher education's pre-pandemic economic and social functions.

However, we contend that the federal, provincial and HEIs' approach to recovery needs to move beyond the systemic reproduction seen in the initial responses to the pandemic and recognize that COVID-19 has upended business as usual for Ontario's HEIs. As the management of COVID-19 moves away from initial response and mitigation phases, now is the time for governments and HEIs to come together "to rethink what it means to be educated in today's world and to explore ways to provide a coherent and meaningful educational experience in the face of the turbulence, uncertainty, and fragmentation that characterize much of higher education today" (Ramaley 2014, 8). This recognizes that as a wicked problem/CIP, COVID-19 cannot be "solved" in the way that the initial policy responses appeared to be attempting. Instead, as previously suggested, these actors need to learn to "live with and manage the impacts of problems that are wicked and unsolvable" (Hartley et al. 2019, 164). As such, we end by sketching out how policymakers could support a "rethink" in practical terms. Based on our findings of the key responses to the pandemic in March and April 2020, we focus on remote learning and the future of internationalization in HE.

The spring 2020 pivot demonstrated that even under extreme duress and institutional capacity notwithstanding, all HEIs are already capable of providing some form of remote teaching and learning[18]. Furthermore, the results of an April/May 2020 survey of nearly 300 faculty and administrators across Canada showed that the majority of

respondents expected more blended and online courses in HE's future (Veletsianos, Johnson, and Seaman 2020). Building on these early experiences, a longer-term reconsideration of the role of multiple forms of teaching and learning will enable HEIs to offer greater flexibility in course delivery, open access to under-represented groups of students[19], and pave the way for inter-institutional collaboration. Whereas HEIs may lead these initiatives, the importance of remedying the earlier lack of coordination is an open invitation to the provincial government to step up by supporting HEIs to collectively develop and share good practices, and to revisit the HE funding model to support more agile ways of delivering teaching and learning while ensuring fair access and good support for students.

On the internationalization front, our findings emphasized international students and international academic mobility, two activities that have dominated government and institutional strategies in recent years (Tamtik 2017; Trilokekar and El Masri 2020). International students in particular have become an integral part of Canadian HE (El Masri 2020) such that the COVID-19 disruption to the flow of international students has been seen as "the biggest and most immediate financial challenge facing universities and colleges" (Usher 2020). Having starkly revealed the vulnerability of such an approach, a reimagining of the ways in which internationalization could be achieved even when mobility is restricted is needed. This is an opportunity to reinvent international education through more sustainable and reciprocal models. Instead of relying on recruiting international students to Canada, we see a role for the federal and Ontario governments in providing funding to HEIs to lead on the creation of innovative international partnership models that enable Canadian HE to be delivered away from the traditional campus base. HEIs could leverage technology to engage and develop relationships with international partners that enable authentic connections and build research communities within virtual spaces.

Taking the next steps to rethink *how* higher education is done and *who* higher education is for could not only fundamentally alter the HE landscape, but could set the scene for new and more collaborative ways of working between policy actors that extend well beyond COVID-19.

Notes

1. This comprises 24 colleges and 22 universities. Colleges in Ontario offer certificates, diplomas and some degrees. They tend to have an applied/career-oriented focus. While it is possible to transfer from a college to a university (as is commonplace in the US), it is more typical for students to remain at one HEI to complete their program of study.
2. The English language literature is often based on the US experience, where emergencies such as natural disasters and campus shootings have been more commonplace and where as a result planning for crises is more embedded, particularly following Hurricanes Katrina and Rita in 2005 (McCullar 2011). The uniquely large-scale and disruptive nature of the COVID-19 pandemic on education (Karalis 2020) and the fact that it is ongoing at the time of writing is also a reason that comparable studies do not (yet) exist.
3. Entries that repeated previously announced information, were undated, or included e.g. a general message of goodwill were not included. By the time of data collection in June/July 2020, all HEIs had a dedicated coronavirus sub-site. Some were organized thematically rather than by date and these HEIs were excluded from our sample.
4. A list of the ministries/departments is at Appendix I.

5. A list of HEIs is at Appendix II with a map of Ontario/Canada at Appendix III.
6. Most HEIs in Ontario work on a three-semester basis: Fall (September–December), Winter (January–April), Spring/Summer (May–August).
7. Despite the convergence with the school break in Ontario, the timing of canceling in-person activities also directly aligns with findings from across Canada, including provinces that have different school term dates (Steele 2020).
8. All amounts are in Canadian dollars.
9. The Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), the Social Sciences and Humanities Research Council (SSHRC), the Canada Research Coordinating Committee (CRCC) through the New Frontiers in Research Fund (NFRF), the International Development Research Centre (IDRC), and Genome Canada (GC).
10. Among the HEIs we reviewed, no universities offered laptop loans.
11. https://www.ecampusontario.ca/
12. The Canada Student Loans Program provides repayable loans and non-repayable grants to help Canadian students pay for their post-secondary education. Federal loans and grants are delivered in partnership with participating provinces and territories and are available to full- and part-time students; students from low- and middle-income families; students with dependants; and students with permanent disabilities.
13. The Ontario Student Assistance Program is a provincial financial aid program that offers grants and loans to help Ontario students pay for their post-secondary education.
14. This category of students included those enroled in a post-secondary education program leading to a degree, diploma, or certificate; students who ended their studies or graduated no earlier than December 2019; high school graduates who had applied for and would be joining post-secondary programs in the coming months; and Canadian students studying abroad meeting one of the above criteria. While the Benefit was announced on April 22, it took effect in May 2020.
15. Post-secondary education students, those going to college in September 2020, and those who graduated in December 2019 had access to $1,250 a month from May to August. This amount increased to $1,750 per month for those taking care of someone else or have a disability. This Benefit was also accessible to those who had a job but were only earning up to $1,000 a month. The period covered by the Benefit started on May 1.
16. Under normal circumstances, in order to be eligible, international students must maintain their full-time student status during each academic session of the program or programs of study they complete and submit as part of their Post-Graduation Work Permit application.
17. Although HEIs generally took action on the same areas during similar time periods (e.g. the three day window during which they all canceled face-to-face classes and switched to remote delivery), the extent of coordination between universities and colleges is unclear. Rather, it seems to us that their responses were made within each HEI and aimed to meet the immediate needs of the individual institution and its stakeholders.
18. We note that others have made similar calls to capitalize on the greater use of technology to support teaching and learning (e.g. Public Policy Forum 2020). Whereas these recommendations tend towards digitalization, assuming equal access to online technologies, we prefer "remote" to encompass an array of strategies. These might primarily be internet-based, but we would also encourage policymakers to be open to other forms of remote learning that do not exclude learners without solid internet access or who are in settings where internet access may be monitored.
19. Although participation in HE in Ontario is high overall, students who are Indigenous, have a disability, are from low-income families, live in rural areas, or would be the first in their family to attend are under-represented (Norrie and Zhao 2011)

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Appendix I.

List of government ministries and departments included in the dataset

Name of Ministry/Department	Level	Abbreviation
Canada Border Services Agency	Federal	CBSA
Canadian Institutes of Health Research (this includes research councils)	Federal	CIHR
Employment and Social Development Canada	Federal	ESDC
Immigration, Refugees & Citizenship Canada	Federal	IRCC
Global Affairs	Federal	GAC
Government of Canada	Federal	GOC
Health Canada	Federal	HC
Office of the Premier	Provincial	O-OP
Office of the Prime Minister	Federal	PMO
Ontario Ministry of Colleges and Universities	Provincial	O-MCU
Ontario Ministry of Health	Provincial	O-MOH
Ontario Ministry of Long Term Care	Provincial	O-MLTC
Ontario Ministry of Finance	Provincial	O-MOF
Public Health Agency of Canada	Federal	PHAC

Appendix II.

List of higher education institutions sampled for detailed data analysis

Name	Institutional type	Location of main campus	Location in Ontario (see Appendix III)
Algonquin College	College	Ottawa	East
Carleton University	University	Ottawa	East
Centennial College	College	Toronto	Central
Confederation College	College	Thunder Bay	North
Fleming College	College	Peterborough	North
Fanshawe College	College	London	West
Georgian College	College	Barrie	Central
Laurentian University	University	Sudbury	North
Nipissing University	University	North Bay	North
Ryerson University	University	Toronto	Central
Sheridan College	College	Brampton	Central
University of Guelph	University	Guelph	West
University of Windsor	University	Windsor	West

Appendix III.

Map of Canada showing Ontario

Source: https://www.mapsopensource.com/canada-political-map-black-and-white.html