Perception of COVID-19 Impact on Canadian Occupational Therapy Curricula: Academic and Fieldwork

La perception des répercussions de la COVID-19 sur les programmes d'études en ergothérapie au Canada : cours et stages

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Mots clés: Éducation; entrée dans la profession; étudiants; pandémie; universités.

Abstract
Background. Delivery of occupational therapy education programs in Canada faced significant disruptions and adaptations because of the COVID-19 pandemic. Curriculum changes were made rapidly under extreme conditions. **Purpose.** To document and explore changes to curricula (academic and fieldwork), instructional, and assessment methods implemented by Canadian occupational therapy programs in response to the pandemic and capture their perceived impact on student learning. **Method.** This convergent mixed method design study employed a cross-sectional descriptive survey followed by a member check focus group. Participant recruitment targeted Canadian occupational therapy university program directors, curriculum chairs, and fieldwork coordinators. **Findings.** Results highlight curriculum modifications included shifting from in-person to online delivery and re-sequencing or deferring in-person components. Fieldwork placements were similarly affected and included adoption of simulations and telepractice. **Implications.** The development of interpersonal "soft skills" are perceived as being the most disrupted, but the impact of student learning on actual practice is not yet known.

Résumé
Description. La prestation des programmes d'études en ergothérapie au Canada a connu des perturbations et des adaptations notables en raison de la pandémie de COVID-19. Des changements y ont été apportés rapidement, dans des conditions extrêmes. **But.** Documenter et explorer les changements apportés aux programmes d'études en ergothérapie (cours et stages), aux méthodes d'enseignement et aux méthodes d'évaluation en réponse à la pandémie et saisir les répercussions perçues sur les apprentissages des étudiants. **Méthodologie.** Cette étude convergente à méthode mixte utilise une enquête descriptive transversale suivie d'une vérification par les membres dans le cadre d'un groupe de discussion. Le recrutement des participants ciblait les directeurs de programmes universitaires d'ergothérapie au Canada, les responsables de programmes et les coordonnateurs de stages. **Résultats.** Les résultats mettent en évidence des modifications aux programmes incluant le passage d'un enseignement en personne à un enseignement en ligne et le réaménagement ou le report des composantes offertes en personne. Les stages ont été affectés de la même manière, incluant l'adoption de simulations et de la télépratique. **Conséquences.** Le développement des compétences interpersonnelles est perçu comme étant le plus affecté, mais les répercussions des apprentissages effectués pendant les études sur la pratique réelle ne sont pas encore connues.

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Introduction

The COVID-19 pandemic raised significant challenges for the education of students across the world (Sahu, 2020; UNESCO, 2020) including unprecedented changes in the delivery of occupational therapy programs across Canada. Immediate challenges included the urgent and unexpected need for previously face-to-face curricula taught at a distance mediated by the internet, and delayed fieldwork placements followed by a change in the array of available fieldwork placements (Boniface & Drynan, 2021).

As necessitated by these extraordinary circumstances, several novel methods of delivering curricula and evaluating occupational therapy students occurred in academic courses. Curricular adaptations also involved the creation of a variety of fieldwork experiences. While project, role-emerging, and simulation placements are already defined (Occupational Therapy Council of Australia, 2020; World Federation of Occupational [WFOT], 2016) and well supported by the literature (Hunter & Volkert, 2017; Imms et al., 2018; Overton et al., 2009; Syed & Duncan, 2019; Thew et al., 2018), it is unclear how these and other experiences were configured during the pandemic to provide fieldwork opportunities to meet WFOT's minimum 1000 hour fieldwork requirement. Other health professional programs (including medicine, nursing, veterinary medicine, dentistry, and radiology) also experienced similar challenges and adaptations to their respective curriculums and teaching methodologies (Alvin et al., 2020; Dewart et al., 2020; Iyer et al., 2020; Mahdy, 2020; Sandhu & de Wolf, 2020). While some reported stories of success around these adaptations (Sandhu & de Wolf, 2020), others had reservations, particularly when it came to substituting clinical placements or learning of practical competencies with online activities (Hammond et al., 2020). Gustafsson (2020) also alerted the occupational therapy community that curriculum and fieldwork changes were undertaken within a rapid timeframe under extreme conditions, and should be closely examined prior to possibly permanently adopting them in an educational program.

Occupational therapy programs across Canada anecdotally developed and implemented a range of adaptations and/or innovations in regard to curriculum and fieldwork delivery. Documenting the array of changes and innovations provides a historical landmark from which to track pedagogical changes and their potential impact on future program delivery, student outcomes, and, ultimately, impact on occupational therapy service delivery in Canada.

The purpose of this study was to investigate changes to curricula (academic and fieldwork), instructional approaches, innovations, assessment methods, and fieldwork revisions implemented by Canadian occupational therapy programs in response to the COVID-19 pandemic, as well as capture faculty perspectives of the perceived impact on student learning and outcomes.

Method

The intent of this convergent mixed methods study (Creswell & Plano Clark, 2018) was to capture the unfolding historical impact of COVID-19 in occupational therapy programs across Canada. The study design used a longitudinal cross-sectional descriptive survey with closed-ended (quantitative) and open-ended (qualitative) questions. Information was gathered on curricula structure, resources and delivery, teaching and assessment methodologies, fieldwork placements and innovations, and the respondent's perceived effect of academic and fieldwork adaptations on learner attainment of entry-level practice competencies. A member check focus group was planned to challenge or confirm the mixed method survey findings or potentially generate new data (Birt et al., 2016). This study received ethics approval from the authors' respective university research ethics boards (Dalhousie University 2021-5446, University of Ottawa H-04-21-6856 , University of Alberta Pro00109656, and University of Manitoba HS24836).

Participants

The targeted survey population was key representatives from administration, curriculum, and fieldwork in all 14 Canadian occupational therapy programs. Representatives included the Association of Canadian Occupational Therapy University Program (ACOTUP) directors, curriculum chairs from the Academic Education Committee (AEC), and fieldwork coordinators from the Committee on University Fieldwork Education (CUFE). These positions were selected given their responsibilities regarding curricula and fieldwork together with their ability to report on the overall perspective of program level changes. Many of those serving in the recruited positions also may be teaching faculty within their respective programs. The member check focus group included those present at the presentation of survey results at the Canadian Association of Occupational Therapists (CAOT) 2022 national conference.

Procedure

The recruitment strategy and online survey design was informed by the total design method (Dillman et al., 2014). An Opinio™ online survey was developed with closed-ended and open-ended questions. The Opinio™ online survey link was distributed by email to the targeted participants. The survey was branched into different content sections depending on the respondent's positions(s). Options with primary assignment for branched sections of survey included program director/coordinator (cohort size, length of program, resources), curriculum chair (academic curriculum, teaching and evaluation); and fieldwork coordinator (fieldwork education). Combined role response options included program director/curriculum chair, and program director/curriculum chair/fieldwork coordinator.

As five of the 14 Canadian occupational therapy programs are francophone, all recruitment and research tools were translated into French by a professional translation service and verified by a bilingual francophone occupational therapist. Survey respondents could choose to complete the survey in English or French. Due to the different structures of programs, some quantitative questions were designed with Likert-type scales with

bespoke percentages (0; 25% or less; 26%–50%; 51%–75%; 75% plus) to facilitate consistent descriptive reporting and comparison across programs. The Likert scales with anchored percentages received input from the AEC and CUFE during survey construction to ensure understanding and to enhance reliability of reporting. Participants were also asked to rate and comment on the "perceived impact on learners and their attainment of competencies due to changes in teaching and assessment methods."

The survey was released in July 2021, two reminder emails were sent in August and September, and the survey remained opened until the end of October 2021. The survey data collected reflects a time period where programs would have been through a year of adaptations due to COVID-19 restrictions and Canada was encountering the fourth wave with the highly contagious Delta variant of concern (VOC) being predominant (Government of Canada, n.d.).

To provide a better understanding, and to enhance the rigor of our mixed method survey analysis, a member check focus group was planned (Birt et al., 2016). The in-person member check focus group was conducted 8 months after administration of the survey. The purpose of the member check focus group was to determine if there was resonance of the focus group members' experience to confirm or to challenge the content validity of our survey analysis and potentially, generate new data.

The mixed method survey analysis was presented at the ACOTUP session of the CAOT conference in May 2022 when the Omicron BA2 was the VOC, but in-person mandatory masking restrictions were beginning to lift across the country (Government of Canada, n.d.). The presentation included opportunity for a member check focus group seeking feedback on our interpretation of the mixed methods blending of the quantitative and qualitative free text data. Three questions guided the focus group discussion to elicit feedback regarding their perceived impact of the pandemic period changes in teaching methodologies and/or fieldwork on students' learning and attainment of competencies, identification of specific areas/competencies they perceived as being impacted by changes in curriculum and/or fieldwork placements, and any comments or reasons for their reported perceptions. Attendees who wished to participate in the research study were given the option to provide their comments anonymized on paper or via an Opinio™ link. Virtual conference participants were provided with the Opinio™ link. Completion of the onsite or Opinio™ feedback form was taken as implied consent. Feedback forms were available to read/write in English and French.

Data Analysis

The survey results obtained from Opinio™ were downloaded into an Excel spreadsheet (Microsoft, 2022), cleaned, and blinded by the research assistant prior to analysis. The French free text responses were professionally translated. All survey data is reported at the aggregate level and is anonymous. Descriptive summaries contain the quantitative account of curriculum adaptations and program perceptions about the impact of COVID-19 on learner competency. Frequency of program response was used to gather information on teaching, assessment, fieldwork practices, and perceived impact on competencies. If there was more than one response from the same institution in a content section, but not in agreement, the response from the primary role for the survey branch was selected. Some questions asked for report of pre-COVID-19 (prior to March 2020), present pandemic (March 2020–Summer 2021) and post-COVID-19 (anticipated Fall return 2021) practices as well as speculation for changes that might remain after COVID-19 restrictions are lifted.

Qualitative description with content analysis of the 18 open-ended free text survey questions was completed to provide meaningful context for the categorical quantitative survey questions (Doyle et al., 2020; Elo & Kyngäs, 2008). Codes were derived by open coding responses as they appeared for each survey question and by using a priori survey topics. To ensure methodological rigor and trustworthiness during data analysis and interpretation, initial codes were derived by one author and then independently reviewed by two other investigators. Any coding discrepancies were discussed and resolved with the research team. A constant comparative approach was used to refine coding and detect patterns and relationships among categories. Quantitative and qualitative findings were then compared for consistencies to confirm or refute between ratings and textual comments. Identified and interpreted findings were reviewed by team members for accuracy and completeness.

The qualitative responses from the member check focus group were reviewed within the same survey free text codes. Analysis focused on points of convergence or divergence with the survey quantitative and qualitative findings. Quotes to illustrate content were also identified during the analysis from the survey as well as member check focus group.

Findings

All 14 Canadian programs contributed to the mixed method survey (S) study. The respondent's reporting position(s) included program director (four), curriculum chair (seven), fieldwork coordinator (eight), program director/curriculum chair (two), and program director/curriculum/fieldwork coordinator (three) from entry to practice master's programs, including Québec programs that include an integrated bachelor's degree. The member check focus group (FG) received 12 consent informed written responses. Respondents represented the targeted survey participant groups as well as regulators, and students. Some of the written responses from the FG were expressed on the same form but represented a combination of consenting individuals of same or different positions (e.g., fieldwork x 3 and academic; fieldwork and academic).

Curricula Structure

Three programs reported decreasing their incoming cohort class size from 2020 to 2021, and five programs reported extending program length for the classes of 2020 and 2021. Six programs

reported moving academic courses or content within courses to an earlier or later time and/or condensing content delivery in their respective programs. The main reasons for increased program length included delay of fieldwork placements, challenges with fieldwork recruitment or cancelations, and re-sequencing of fieldwork and academic courses to align with public health guidelines.

Changes in typical curriculum progression were done to abide by safety protocols put in place due to public health directives. "Some content (e.g., lab-skills, in person), needed to be pushed to later in the curriculum so that safety protocols in line with provincial health orders could be in place" (curriculum chair, S). However, one of the programs reported postponing fieldwork to later in the semester as they were in the midst of planning this curriculum adjustment and COVID restrictions only accelerated the revision implementation.

The re-sequencing of content shared very similar rationale across programs. For most programs, the rationale for shifting content aligned with "some course content was moved around so in-person learning and remote/online learning could be clustered whilst also ensuring pedagogically and content alignment" (curriculum chair, S). Predominantly theory-oriented courses were moved to earlier in programs as they were reported to be more amenable to moving to an online format. Practice skill development content was delayed, and different iterations of delivery were reported. The most common delivery revisions reported on the survey included: (a) practice skill content of several courses was offered in one consolidated block of in-person instruction (at the end of the semester) and (b) in-person practice blocks and theoretical blocks alternated over the semester to allow more time for skill consolidation. One program postponed the delivery of the whole program and added a summer break as public health directives in the region prevented all in-person academic and fieldwork programming.

Teaching and Assessment Methods

Table 1 presents the compilation of teaching and assessment methodologies reported. Respondents were asked to estimate the percentage of use of the methodologies in their respective curricula pre-COVID, during COVID (i.e., time period of survey), anticipated return (e.g., post-COVID), and their perceived impact on learners and their attainment of competencies.

As noted in Table 1, some programs anticipated adoption of a few online instructional adaptations and innovations in a post-pandemic curriculum. The perceived impact on general learner attainment of competencies due to changes in teaching method seems to be greatest for elements where the program shifted from online delivery pre-pandemic to using a greater proportion of online delivery during the pandemic. While some respondents perceived an impact on attainment of competencies associated with online lecture, most reported perceived impact with online as well as face-to-face laboratories (labs). Less impact on competency attainment was reported with problem-based learning (PBL) type of methodology, whether

face-to-face or online. The perceived impact on general learner attainment of competencies due to changes in assessment methodologies was greatest with online written exam. The split between "having an impact" and "having no impact" on competency attainment, appeared widest for programs that shifted from no online examination pre-pandemic to a greater proportion during the pandemic.

Teaching method adjustments anticipated to remain after the lifting of restrictions were justified by "pedagogical sense and/or aligned with equitable learning principles" (curriculum chair, S). Examples included asynchronous recordings for didactic lecture delivery and pre-recorded lab demonstrations. Programs also reported a shared sense that recordings were a benefit for learning as it "allowed students to work at a different pace," "offered visualization of the skills prior to in person interactions," and allowed for "access to the information at any time or place" (curriculum chair, S). Several programs noted they may move forward with a blended or hybrid approach. Online delivery methods were also noted to reflect changing practice trends. "To address the practice landscape of increasing telerehab practice, we are considering including options to develop virtual communication skills" (program director, curriculum chair, and fieldwork coordinator, S). "We will also keep some of our PBL activities online for this year, as it was felt that some of these activities would translate well to remote clinical service delivery" (program director and curriculum chair, S).

Other than oral and written exams moving online, little change in assessment modality was noted across programs. Several programs reported consideration for continued adoption of online oral exams and presentations due to perceived increased efficiency and accessibility for students, administrators, and evaluators. However, even during the pandemic, practical exams in most programs continued to be delivered in a face-to-face format, even if delayed. The decision to maintain the in-person format was warranted by these not being amenable to an online format. Additionally, most programs reported anticipating returning to in-person delivery for written exams noting that online written exams were more contentious due "to academic integrity and privacy conflicts" (curriculum chair, S).

The free text survey comments and confirmation by the member check focus group acknowledge that teaching and learning involves relationships between students, faculty, and preceptors within the curriculum, and that certain conditions are needed to foster connection. Students had fewer opportunities to engage with face-to-face interactions and for practicing hands-on skills and less time for professional development. At the same time, instructors found it difficult to adapt their teaching in real time (online) and to identify student needs and provide adequate support to students early in their learning journey. Part of this difficulty was attributed to the change in ability to "read" the class in an online environment, particularly if the instructor cannot see the entire class on the screen, participant cameras are off and/or the teaching was asynchronous. Participants also noted the impact of program adaptations on

Table 1
Perceived Impact on Competency Attainment due to Changes in Teaching and Assessment Methodology

Teaching Methodology	Time Period	Percentage of Use in Curriculum					Competency Attainment	
		0%	25% or less	26%–50%	51%–75%	75% Plus	No Impact	Impact
	Pre			1	2	6		
F2F lecture	COVID	6	3				3	4
	Post	2	1	3	2	1		
	Pre	4	4					
Online lecture synchronous	COVID			2	4	3	3	6
	Post		3	2	2	1		
	Pre	2	7					
Online lecture asynchronous	COVID		4	3	2		3	5
	Post		7	2				
	Pre			3	1	5		
F2F labs	COVID		5	4			3	6
	Post		1	4	2	2		
	Pre	8						
Online lab synchronous	COVID		3	5	1		2	6
	Post	2	3	3				
	Pre	7	1					
Online lab asynchronous	COVID	1	7		1		2	3
	Post	3	5					
	Pre			4		5		
F2F PBL	COVID	4	4				3	2
	Post	1	2	2	2	2		
	Pre	6	2					
Online PBL	COVID		1	3	1	4	3	4
	Post	1	4	1	1	1		
Assessment methodology								
	Pre		1	4	2	2		
F2F written exams	COVID	7	2				5	2
	Post	2		5	1	1		
	Pre	3	6					
Online written exams	COVID		2	3	2	2	2	7
	Post	2	5	1		1		
	Pre	6		1				
Online individual oral exams[a]	COVID	1	5	1		1	6	1
	Post	2	4	1				
	Pre	7	1					
Online synchronous presentations	COVID		4	4	1		5	3
	Post	2	4	1	1			
	Pre	5	3					
Online asynchronous presentations	COVID	2	6				4	1
	Post	4	4					
	Pre	1	6	1		1		
F2F OSCE with SP	COVID	3	4			1	3	3
	Post		7	1		1		
	Pre	2	5	1		1		
F2F OSCE with peers/instructor	COVID	1	6	1		1	3	3
	Post	1	6	1		1		
	Pre	8						
Online OSCE with SP	COVID	3	6				2	2
	Post	5	3					
	Pre	7	1					
Online OSCE with peers/instructor	COVID	4	3	2			2	3
	Post	7		1				
	Pre		1	7	1			
Written papers	COVID		1	7	1		8	0
	Post		1	8				

Note: Not all programs responded to all questions so totals per methodology may not equal 14.
[a]Two programs indicated not applicable.
F2F = face-to-face; PBL = problem-based learning; OSCE = objective structured clinical exam; SP = simulated patient.

Table 2

Curriculum Delivery Format Changes and Perceived Impact on Skill Development

Skill Content	Delivery Format Change			Skill Development Impact		
	No Change	Combination	Moved Online	Concern	No Impact	Positive/New Opportunity
Interpersonal skills	1	4	4	6	2	1
Feedback		6	3	3	4	1
Group facilitation	1	3	5	4	2	3
Supervised practice	1	4	1	2	3	2
Transfer skills	6	1	1	4	5	
Seating assessment	3	4	1	3	6	
Wheelchair mobility	4	3	1	3	6	
ROM/MMT	5	3		3	5	1
Splinting orthotics	6	2		1	7	1
ADL	2	6	1	4	5	
IADL	1	6	1	4	5	
Adaptive technology	2	4	3	4	4	1

ROM = range of motion; MMT = manual muscle testing; ADL = activities of daily living; IADL = instrumental activities of daily living.

informal learning and student engagement. One group of participants commented there was "less connection with the students & co-instructors, so question if it resulted in less engagement with content. Students didn't interact with professors as much in online compared to F2F (face-to-face) limiting informal educational opportunities" (fieldwork and academic, FG).

The focus group also added that the absence of informal learning opportunities usually found in a typical program progression (e.g., hallway or student lounge discussions) seemed to make it more difficult for some students to discern what is actually important to know and learn. This highlights the importance of formal and informal communication and relationships between the program and students. One participant noted student anxiety related to uncertainty with program changes as the pandemic progressed and its impact on their personal circumstances such as housing. "With long periods of time without knowing how future classes would be delivered individuals were worried and anxious about finding housing on short notice" (student, FG).

Informal communication was noted as necessary for building a relationship between faculty and the class, and the development of trust over time; "Lack of F2F informal and formal communication; lost trust (between student and faculty) due to lack of opportunity for informal conversations; disruption to usual occupations, lack of participation in extra curriculars, new stressors (e.g., financial insecurity)" (fieldwork x 3 and academic, FG).

Perceived Impact on Skill Development and Competencies

Table 2 provides an overview of the survey respondents' perceived impact on more specific skill development as a result of curriculum changes. Six programs identified the concern around interpersonal skill development (e.g., interviewing, obtaining consent, therapeutic use of self). Respondents reported a perceived positive impact on supervised practice

(likely due to lower in-person ratios mandated by directives) and no perceived impact on skill development, for example, splinting, wheelchair mobility/seating assessment, and range of motion/muscle testing. This latter perception is not only likely due to the fact the in-person format for teaching and assessing these skills was maintained throughout the pandemic, but also the lower in-person student ratios and reported increase of video preparation materials prior to face-to-face labs.

The free text comments regarding concerns for competency tended to align with learning of practice skills typically delivered and evaluated in face-to-face formats. Participants commented on skill development during the pandemic-adapted learning environment acknowledging fewer opportunities for face-to-face and hands-on learning. " Less time spent practicing hands on skills due to less time in the classroom …physical handling (lifts and transfers), manual muscle testing (MMT), AROM/PROM" (OT student, FG). "There may be a reputational issues i.e., students from the 'covid classes' will be less competent in hands on and face to face interactions" (regulators/associations, FG).

Some respondents expressed concern with students' communication skills (including written and verbal, professionalism, and performance management) as they perceived online format of teaching and clinical fieldwork may have not prepared students as well in these areas. "For cohorts who started online… noticeable decline in social interaction and communication skills required for group-based learning" (curriculum chair, S).

"Decreased communication skills, decreased interpersonal skills, decreased empathy. Students have more difficulty navigating conflict, more judgmental, reduced frustration tolerance general. Communication - all types (written and verbal), professionalism, performance management - e.g., difficulty getting to FW on time after getting out of bed 5 min prior to a zoom class". (Fieldwork × 3, academic, FG)

Concerns with student mental health, specifically anxiety, and the difficulties learning in an online environment were raised. "Student anxiety was generally higher throughout COVID-19…fears that they were not learning what they should be learning and some demonstrated difficulty focusing in the online environment" (program director, curriculum chair, and fieldwork coordinator, S). "Some students had to deal with anxiety due to the close proximity required for some tasks despite use of PPE" (program director/curriculum chair, S).

However, the relationship between student mental health and the attainment of competencies may not be direct. "There are meta impacts of learning during covid that will invariably affect our graduates; however, I cannot say that these will directly impact attainment of competencies" (curriculum chair, S).

Instructional and some fieldwork adaptations were facilitated by the use of technology for which participants identified both benefits and drawbacks. Both survey and focus group respondents also noted several potential benefits to these students' educational experiences during the pandemic. Graduates from these cohorts may be better positioned for future hybrid or virtual service delivery potentially making practice more accessible. Additionally, the adaptability and flexibility required by students during the pandemic may translate to therapists who are more adaptable and flexible in their practice. "This group will have enhanced virtual skills, but (they) may gravitate to workplaces where virtual skills can be used. Covid will make these students flexible, adaptable—they may adjust to future change" (regulators/associations, FG). Albeit, as one participant noted, future follow-up studies are needed to document the actual impact of educational adaptations during the pandemic on competency attainment and clinical practice "…question evidence on the impact of delivery on competencies and need for research" (clinical instructor, FG).

Fieldwork

Numerous adjustments to fieldwork placements were made in response to the pandemic. Table 3 contains the reported fieldwork placement profile pre-pandemic and during the pandemic. Before and throughout the pandemic, clinical in-person placements were the most common placement type and were the only placement type to reduce during the pandemic.

Role emerging and role expanding placements continued to occur primarily in <25% of placements. However, these placements occurred earlier in the student program during COVID-19 as opposed to pre-pandemic. The largest change in placement type was the increased use of telepractice placement with either virtual or in-person supervision. Pre-pandemic telepractice in-person placements were reported in only four of the 14 programs and just one program reported virtual telepractice placements. Simulation was also used more frequently during the pandemic. One program used it for 75% or more of their earliest placement. "Our (first) fieldwork course was re-developed to be completely online using simulated patients and other virtual experiences" (curriculum chair, S). Five schools reported simulation was used in

<25% of their placements when this type of placement was not used pre-COVID. Leadership, administration placements were used consistently pre-COVID and during COVID.

The survey comments reflected these trends. Many programs described using innovative fieldwork and flexible configurations to increase placement capacity. "Many placements made adjustments 'on the fly' … moving from a scheduled visit to a telephone visit" (fieldwork coordinator, S).

Programs reported an increase in placements occurring in two different practice sites requiring collaboration across institutions for shared student supervision and evaluation. Programs described a variety of new role-emerging placements developed during this time such as: "virtual integrated care in primary care" in community practices that previously did not have occupational therapy. There was a need to hire off-site preceptors to supervise students as well as additional instructors and administrative personnel to manage workload. Though programs reported challenges regarding communication with students completing placements virtually (e.g., students do "not seem to be as confident in contacting me when they have problems in their placement, possibly because they have never met me in person", fieldwork coordinator, S), some programs also described new skillsets students developed through innovative fieldwork placements, such as project management.

Respondents were asked to record the number of changes that occurred between placement assignment and placement completion during the time of the survey. From the programs who responded (10), 1649 reported placement changes were recorded. When a specific placement was not possible, the most frequent change was to a project-based placement, followed by placement cancelation, delaying the placement, or changing placement practice type and/or location. Not only did these changes impact students, but increased workload at the university and practice sites, as both worked to find solutions to ensure a student was able to complete their fieldwork hours. "Workloads were such that we were not in position to collect/track data of this level of detail while trying to cope with all the changes and just keep moving forward!" (fieldwork coordinator, S).

During the time of the survey nine programs reported 16 of 47 placements were changed in length while 12 programs reported 30 of 57 placement blocks moved in the program. Of those placements moved, 90% of the placements were moved to later. "[T]he entire fieldwork schedule was one placement period 'behind' resulting in an overall x2 month extension of the program" (fieldwork coordinator, S). Respondents described using "staggered starts and different fieldwork time slots for groups within a cohort" (fieldwork coordinator, S) as a way of creating sufficient fieldwork positions. For example, "only had capacity for 50% of class so 50% cohort lagged" (fieldwork coordinator, S).

Survey comments also described how students compensated for time missed during their placements due to illness or other pandemic-related challenges, including the completion of site-related self-directed professional development or the completion of administrative work at home rather than onsite.

Table 3

Fieldwork Placement Profile Pre and Through COVID-19 Collection Period

Fieldwork Format	Level	Not Applicable[a] Not Offered[b] Pre	Through	< 25% Pre	Thru	26%–50% Pre	Thru	51%–75% Pre	Thru	> 75% Pre	Thru
Clinical in-person	1A	1	3				1			12	5
	1B	1					2		4	6	6
	2A		1		1		1	2	2	10	5
	2B	1			1		2	1	5	8	4
	3A		1	1	1		1	1	3	10	4
	3B		3		3		2			10	
Clinical tele virtual supervision	1A	3	3		3						
	1B	2			7		1				
	2A	1	1		6						
	2B	2			10		1				1
	3A		1	1	7		1				
	3B	2	3		4		1				
Clinical tele in-person	1A	4	3	2	4						
	1B	2		2	8		1				
	2A	1	1	3	7		1				
	2B	2		2	8		3				
	3A		1	4	5		3				
	3B	2	2	3	2		1				
Simulation	1A	2	2	1							1
	1B	2	2								
	2A	1	4								
	2B	3	3								
	3A	1	2								
	3B	2	3		4		1				
Lead Admin—nonclinical	1A	6	4	3	2						
	1B	4	2	1	7		1				
	2A	1	3	9	5						
	2B	3		5	9						
	3A		1	9	6	1					
	3B		3	7	3						
Role expanding	1A	6	3	1	3						
	1B	2		2	6	1			1		
	2A	0	2	8	5						
	2B	2		5	9		1				
	3A		1	7	7	2	1				
	3B		3	8	4	1	1				
Role emerging	1A	6	3	2	3					1	
	1B	3	1	2	7		2				
	2A	1	2	9	5	1	1				
	2B	2		6	9	1	1				
	3A		1	9	7	2					1
	3B			9						1	

Note: All programs are required to provide a minimum of 1,000 hours of fieldwork placement configuration which is unique per program. Placement numbers and lengths vary across programs. Canadian placement levels are defined by placement expectations (Sullivan & Bossers, 1998) and the number of hours students have completed in the field. [a]Not applicable (the type of placement is available but not at the level listed) and [b]Not offered (the level of placement is not offered at the program) were combined for reporting purposes.

Obstacles Encountered

Participants described a number of challenges with program delivery due to changing COVID-19 restrictions and ensuing administrative rules and regulations. Because of mandated smaller student ratios and physical distancing restrictions, labs were run more than once across multiple rooms. Some programs received additional support to acquire distance technology licenses (if not provided centrally), equipment (e.g., laptops, cameras, and editing equipment), and knowledgeable support. However, others reported there was no new infrastructure or computer support for faculty or staff. "Needing to learn how to use different technologies—increased burden on

students and faculty related to this. The demands to restructure the learning opportunities using different technologies also had an increased burden" (program director & curriculum chair & fieldwork coordinator, S).

Programs also reported being concerned about maintaining the integrity of the program to prepare students for practice. The demands on everyone to restructure the curriculum and learn different technologies for education and practice delivery also required increased time for faculty, particularly to address the issues around student engagement and accessibility. "All the effort has gone into making sure students are achieving entry to practice skills, fieldwork experiences, and supporting students, staff and faculty with additional challenges with engagement and concern of mental wellness" (curriculum chair, S).

"Perceived student challenges during COVID included less contact with peers, less social support, and spending large amounts of time online for both learning and socialization. Students are highly challenged when an entire term is remote. The lack of in-person teaching may have impacted their skills as future OTs but more importantly, the lack of social support, the feeling of isolation contributed to a decrease in motivation and poorer grades. We have definitely learned that we should never have an entire term on-line (not that we would choose to do this in the future)" (program director/curriculum chair, S).

Innovative Ways to Foster a Sense of Community

Programs listed different strategies adopted to foster student engagement and a sense of community. Some programs employed inclusive pedagogical practices to promote student engagement and class community. Examples included flexibility in assignment deadlines, maintaining office hours remotely and extending hours of availability. The use of videoconferencing during class for students who were on campus, but in different classrooms, and at home also helped promote connection between students. Several programs described increasing the frequency of communication strategies between faculty and students (e.g., biweekly Town Halls, regular meetings with student representatives) to share information and voice concerns. "Developed a student communications group with representation from each cohort and consulted with these groups in the development of key messaging" (director, S).

Respondents described providing "connecting" opportunities in class, for example, icebreaker activities and using peer feedback. Social activities outside of class included trivia nights hosted on a program's conferencing platform, virtual celebration of program milestones, and a virtual graduation party. Finally, some programs promoted wellness resources, for example, including offering students' mental health supports and the co-creation of online wellness pages shared amongst students, faculty, and staff "… cohort wellness pages shared between cohorts where students, staff and faculty could share resources, on recipes, exercise, etc." (fieldwork coordinator, S).

Discussion

The purpose of this study was to document and examine the changes to Canadian occupational therapy academic and fieldwork courses implemented in response to imposed restrictions during the COVID-19 pandemic. Despite the changing landscape of restrictions and re-structuring of curricula endured across the country, programs continued to provide occupational therapy education in a modified and delayed form. The constraints imposed by the pandemic highlighted areas of the curriculum which were amenable to innovation as well as areas most sensitive to the loss of face-to-face interactions.

Most of these modifications consisted of shifting from in-person to online delivery and a re-sequencing or deferring of in-person components, namely labs and fieldwork placements. Similar modifications to teaching and laboratory practice have been observed in other heath professional programs such as physiotherapy (Bampton et al., 2022), dentistry (Iyer et al., 2020), nursing (Agu et al., 2021; Dewart et al., 2020; Seah et al., 2021), and medicine (Alvin et al., 2020; Hammond et al., 2020; Rose, 2020; Sandhu & de Wolf, 2020). However, not all practice skill training, evaluations, and fieldwork placements were amenable to virtual delivery. The limited time for face-to-face interactions was perceived to have principally impacted the development of interpersonal skills. Other studies have also found the development of interpersonal skills as being most impacted in a prolonged online learning environment (Lee et al., 2022b) and that students' concern about replacing hand-on experiences may be linked to their anxiety about not knowing how to interact with real-life patients (Lee et al., 2022a).

There may be an intangible feature of in-person curriculum delivery that contributes to the development of this soft skill. Seah et al. (2021) highlight that soft skills, such as effective therapeutic communication, are founded on "human-to-human interaction, touch, and empathy" (p. 2). As noted by focus group participants, it is likely that the restrictions in time and space for in-person programming did not allow students to participate in the usual amount or variety of informal interactions nor in the variety of opportunities to observe, communicate, and learn from peers, preceptors, and faculty. Concerns regarding practice readiness due to limited time for hands-on skills learning for competencies were also expressed.

While moving online was necessary during COVID-19 restrictions, many programs and practice will continue with some of the innovations and modifications adopted. Innovations in technology provided opportunities to expand academic and fieldwork into telepractice. This speaks to expanding practice models, particularly in rural and remote areas, and the provision of accessible opportunities for practice (Almog & Gilboa, 2022; Proffitt et al., 2021; Read et al., 2020). Virtual and hybrid learning together with telepractice fieldwork placements position students to develop skills in an environment similar to future practice settings. Smith et al. (2014) report that students feel more prepared for practice when fieldwork includes opportunities to work without direct supervision

as happens in fieldwork placements with virtual supervision. Fortune et al. (2013) argues that students need to be prepared to practice in super complex environments. Although curricular adaptations were warranted given the circumstances during the pandemic, respondents acknowledged that the objectives and consequences of such adaptations, both positive and negative, are unknown at this time and that follow-up research is required.

The current standard in Canada for measuring academic knowledge and professional behavior is the written National Occupational Therapy Exam (NOTCE). Students who were educated in pre-pandemic years of 2019 or 2018 obtained percentage pass rates of 94.6% and 96.35%, respectively (NOTCE, n.d.). At the time of writing this article, the Canadian educated percentage pass rate for the NOTCE was 96.4% for graduates of 2020 (who experienced minimal programming change at the end of their final year in the program), and 95.8% for graduates of 2021 (who experienced program change as of the end of their pre-final year of studies and throughout their final year) (NOTCE, n.d.). It is encouraging to note that students' performance on the NOTCE does not appear to be much different. However, the NOTCE is a written examination, and it may not be sensitive to or correlate with the concerns raised regarding interpersonal skills and hands-on practice competencies. Longitudinal studies of these cohorts and the 2022 graduates are warranted. Research is needed to examine the holistic impact of curriculum delivery adaptations on these learners as individuals and their attainment of competencies as they enter practice.

Finally, there is a need to acknowledge and respect the exhaustion and lack of restoration experienced by faculty, preceptors, and students. At this point in time, it is not known if the pandemic will persist and what the longer-term effects on individuals and the profession will be. For instance, the experiences encountered during the pandemic could impact satisfaction with the profession, affecting job retention and job satisfaction.

Data collection for this study occurred during a time period of ongoing changes in response to public health restrictions across the country. As such, the results of this study should be interpreted as preliminary. Limitations of this study include the potential for recall bias in rating pre-COVID categories and uncertainty predicting adoption or permanency of adaptations. The perceptions of impact on learner competency in this study are restricted and did not include all members of the teaching, fieldwork, or student community. A follow-up study is planned to examine lasting academic and fieldwork changes.

Conclusion

This study documented the rapid changes necessitated by the COVID-19 pandemic and their perceived impact on student learning and outcomes from the faculty perspective. Program modifications primarily involved the re-sequencing of academic curriculum and fieldwork and moving from in-person to online teaching and assessment. Although concerns were expressed regarding the potential negative impact on the development of practice competency skills, the pandemic also created opportunities to develop skills for future practice including telepractice and virtual rehabilitation. The results of this study have implications for occupational therapy education, providing insight into pedagogical practices that may promote (e.g., hybrid delivery and simulation) or hinder (e.g., challenges with mental health with full online delivery) student learning amidst reduced in-person interactions. When examining the impacts of curricular, instructional, and assessment adaptations on students' competency attainment, future research may investigate what elements (or aspects) of academic curriculum and fieldwork can be taught online, and to what extent. Findings from this study will serve not only as a historical record for the occupational therapy profession in Canada, but also as a foundation from which to track pedagogical changes and their impact. Continuation of this line of study will contribute to evidence-informed program delivery in support of student competency development for entry to occupational therapy practice.

Key messages

- Pandemic restrictions necessitated modifications in planned curriculum that mainly consisted in shifting from in-person to online delivery and a re-sequencing or deferring of in-person components, such as laboratories and fieldwork placements.
- Respondents perceived the development of interpersonal skills as being most impacted by changes in curriculum delivery.
- The pandemic necessitated, expanded, and accelerated the development of occupational therapy practice and curriculum development into telepractice.

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