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Data in the Time of COVID-19: How Data Library Professionals Helped Combat the Pandemic

Les données en période de la COVID-19 : comment les professionnels en données des bibliothèques ont aidé à combattre la pandémie

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Article abstract

As the world struggled to respond to the COVID-19 pandemic, researchers worked around the clock to understand what was going on, medically, socially, and economically. At the same time, usual research processes were disrupted: campuses were closed and normal government data collection and dissemination went haywire. Data professionals in academic libraries sprang into action to help. They shared resources, developed workshops, helped find alternative methods of carrying out research, and found ways of coping with the influx of COVID-related data. Social crises are fought on the front lines by medical professionals and service providers, but they are also fought with research, with information, with data. Libraries are at the nexus of information and communication and library professionals were able to play an important supporting role in helping researchers combat the effects of the pandemic.

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Data in the Time of COVID-19: How Data Library Professionals Helped Combat the Pandemic

Les données en période de la COVID-19 : Comment les professionnels en données des bibliothèques ont aidé à combattre la pandémie

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Abstract / Résumé

As the world struggled to respond to the COVID-19 pandemic, researchers worked around the clock to understand what was happening medically, socially, and economically. At the same time, usual research processes were disrupted: campuses closed, and normal government data collection and dissemination went haywire. Data professionals in academic libraries sprang into action to help. They shared resources, developed workshops, helped find alternative methods of conducting research, and found ways to cope with the influx of COVID-19-related data. Social crises are fought on the front lines by medical professionals and service providers, but they are also fought

with research, information, and data. Libraries are at the nexus of information and communication, and library professionals have played an important role in helping researchers combat the effects of the pandemic.

Tandis que le monde tentait de réagir à la pandémie de la COVID-19, les chercheurs ont travaillé jour et nuit pour comprendre ce qui se passait, sur le plan médical, social et économique. En même temps, les procédures de recherche habituelles ont été bouleversées : les campus ont fermé et la collecte et la diffusion normales de données gouvernementales ont été détraquées. Les professionnels en données des bibliothèques universitaires se sont mobilisés pour aider. Ils ont partagé des ressources, ont développé des ateliers, ont aidé à trouver des méthodes alternatives pour mener la recherche et ont trouvé des moyens de gérer l'afflux de données liées à la COVID-19. Les crises sociales sont combattues par les professionnels de la santé et les prestataires de services de première ligne, mais elles sont aussi combattues par la recherche, l'information et les données. Les bibliothèques sont au cœur de l'information et de la communication, et les professionnels des bibliothèques ont pu jouer un rôle de soutien important pour aider les chercheurs à combattre les effets de la pandémie.

Keywords / Mots-clés

academic libraries, data, COVID-19

bibliothèques universitaires, données, COVID-19

Introduction

Data play a major but often invisible role in our daily lives. The COVID-19 pandemic brought data to the forefront, and pandemic-related research went into overdrive. News sites filled with graphs and data dashboards, daily news briefings highlighted case counts, and people followed results of clinical trials in real time. Canadians wanted to know the numbers: we watched news updates and monitored data dashboards online, wanting to know where outbreaks were occurring, how quickly the virus was spreading, how many people were becoming infected daily, where they had travelled, whether they had been hospitalized, and whether they had recovered. Canadians took a crash course in epidemiology and public health policy over the course of a few short weeks.

Academic researchers and public health officials play a crucial and prominent role in generating and transmitting these data. Less well known is the role that libraries, in particular the community of academic data librarians and specialists, play. They support researchers and meet the national hunger for numbers by mediating access to and educating researchers about data from Statistics Canada and other sources. The COVID-19 pandemic has created both challenges and opportunities for researchers doing data-intensive work. Research from before COVID-19 was put on hold due to campus closures that separated researchers from their usual workspaces, including the secure Statistics Canada Research Data Centres (RDCs) needed for their work. Opportunities that arose included a sudden explosion in government funding for COVID-

19-related research and widespread interest from the general public in the data produced by that research.

Counting the Ontario Case Numbers

In the early days of the pandemic, when governments were focused squarely on mitigating a public health crisis, the need to identify, clean, and archive COVID-19 incidence data was at its greatest. In Ontario, available data consisted mainly of summary statistics with cumulative totals of reported cases, recoveries, and deaths. Day-to-day changes were not disclosed, and currency was sometimes in question due to inconsistent or infrequent reporting from some public health units. Trends were difficult to compute without significant data cleaning. To rectify this situation, a data librarian at Wilfrid Laurier University used the Internet Archive's Wayback Machine to harvest information from the province's COVID-19 websites to develop a summary file that showed daily changes in case statuses. This summary file was shared widely among Ontario researchers on social media and deposited into Scholars Portal Dataverse (Steeleworthy, 2020), a repository for research data, along with metadata documenting the difficulty in acquiring reliable summary data. This early work to harvest data created access to reliable incidence statistics in Ontario before reporting mechanisms were improved through the province's open data portal.

Up-to-date Employment Data

One of the crucial roles that data librarians and specialists play is mediator between Statistics Canada and the researchers who access its data. Statistics Canada's Public Use Microdata Files (PUMFs) provide students, faculty, and researchers access to anonymized, non-aggregated data that they can analyze and manipulate to suit their research needs. For example, many economics researchers find access to the monthly Labour Force Survey (LFS) data files to be of prime importance. The LFS data files measure employment and job creation, which became particularly relevant during the economic disruption caused by COVID-19. Data files are released every month by Statistics Canada under the Data Liberation Initiative (DLI) program. The academic data library community's on-campus representatives to Statistics Canada are known as DLI Contacts and include this article's authors. DLI Contacts usually rely on a shared service that fetches the files from Statistics Canada's server, cleans them, and uploads them to a central data access portal where academics from across Canada can access them. However, this process can take days. During the height of the pandemic, researchers involved in policy and media work urgently needed the most current data in order to foster public knowledge and debate and contribute meaningfully to government policy action. As a result, the DLI Contacts at the University of Guelph, the University of Waterloo, and Wilfrid Laurier University banded together to download the LFS files themselves, transform them, and upload them to a shared space for their researchers. These DLI Contacts' collaboration enabled them to give policy researchers access to the LFS PUMFs, generally within four hours of their release by Statistics Canada.

Community Connections

Because DLI Contacts communicate using a listserv that connects them with Statistics Canada experts, the data community can ask questions of Statistics Canada and get fairly quick responses to share with users. Data community members can also support each other with data requests. When the COVID-19 pandemic began, Statistics Canada moved to “mission-critical” status, meaning regular access to experts was quite limited. By using the DLI listserv, the data community was able to fill in the gap left by this reduced access to Statistics Canada experts. For example, a DLI Contact posted a question on finding historic education data, which is easily available on the Statistics Canada website from 1992 onwards. However, the user needed data going back to 1976. After the question was posted, the data community stepped up to locate the required data at the Government of Canada Publications website, where the print tables are available digitally back to 1972. Stories like this one played out repeatedly during this time of transition at the onset of the pandemic, shining a light on how a network of experts could support each other when physical buildings were closed and normally reliable external resources, such as Statistics Canada and the DLI, were turned upside down.

Alternatives to On-campus Data Access Centres

In addition to PUMFs and other Statistics Canada resources, data are also available through the RDC Network. The RDCs are secure on-campus facilities where researchers can access the fully detailed Statistics Canada datasets, including protected information that is not released in the public-access-level files such as the PUMFs. Unfortunately, campus closures due to COVID-19 cut researchers off from these facilities, making it impossible for them to conduct their research. One alternative that data librarians and specialists provided was to recommend similar international datasets that researchers, particularly graduate students on tight timelines, could use to investigate their research questions while awaiting resumption of RDC access. Another solution was to empower researchers to use a different mode of access to protected Statistics Canada information, the Real Time Remote Access (RTRA) system. RTRA allows researchers to request remote access to basic statistical tables from restricted datasets. Access is usually limited to subscribers, but to compensate for the closure of the RDCs, Statistics Canada offered free temporary access to all RDC researchers. Researchers appreciated this access, but most of them were not familiar with the RTRA system. Data librarians at Western University developed a two-part training session, with the first half focusing on RTRA access and the second half highlighting useful international data alternatives for specific surveys. Interest in this topic was so high that this initial local instructional session (22 attendees) garnered the attention of the Portage Network, a leading library-based national organization that supports research

data in Canada.¹ Portage invited the speakers to repeat the session for a national audience, and the new session set a Portage attendance record, with over 300 librarians, library staff, and researchers participating.

Sharing COVID-19 Research Data

Researchers also collect their own data. Another role data librarians and specialists play is to support researchers in managing, archiving, and sharing these data. In February 2020, the Government of Canada introduced a grant that initially allocated \$7 million for funding academic research into medical, social, and policy countermeasures to COVID-19; due to the enthusiastic response, the government soon increased this amount to \$27 million and subsequently allocated additional funds. The call for proposals included a mandate that data collected with this funding be shared both openly and rapidly, in compliance with an international initiative to share pandemic-related research (Canadian Institutes of Health Research, 2020). Researchers in Canada have not typically been required to share data openly, and when the Portage Network hosted an online discussion of this mandate, the membership predicted it would lead to a large influx of researchers who had not previously shared data suddenly needing to do so in a hurry. A working group of data librarians and specialists quickly formed to develop guidance for these researchers and the professionals supporting them. On a tight timeline of two months, the group produced documents including lists of Canadian open repositories for different types of research data, guidance for sharing confidential data, and information on permissions and open licensing, tailored specifically to the requirements in the funding allocation (Portage Network, 2020). When the documents were published, they were made available to academic libraries and research offices across Canada.

From the mass exile of researchers from secure data access centres to the sudden explosion of funded research, the COVID-19 pandemic created challenges for researchers doing data-intensive work. As research was slowed or refocused to COVID-19, a new normal emerged, creating challenges not just for researchers but also for the academic data librarians and specialists who support them. This community used experience, collaboration, innovation, and resourcefulness to help researchers transition into living and researching through a pandemic.

¹ The Portage Network is a national initiative of the Canadian Association of Research Libraries with the goal of building research data management capacity in Canada through a network of experts in a growing community of practice.

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