Infrastructuring as Collective Resistance: How Disabled Students Negotiate Access Using Digital Technologies at Universities

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Abstract

Universities in North America often frame accessibility as an individual responsibility, emphasizing individualized accommodations for disabled students. However, these systems do not always align with students' access needs, leaving them to take on additional labour. At a Canadian university, we interviewed 13 student activists and leaders of disability-related groups. We investigate how disabled students collectively address access frictions that emerge from institutional infrastructure; adopting community practices that work with, within, and around the university to address gaps. Using the concept of 'routine infrastructuring', we demonstrate how student groups leverage technologies to mobilize and negotiate access needs through informal and formal practices as collective care infrastructure. We introduce the concept of 'counteractive frictions', which are produced collectively to disrupt and provoke negotiation with institutions. We call for scholars and designers to rethink 'infrastructuring' as adapting and maintaining, which masks the politics and generative potentialities of friction to reimagine disability futures.

CCS Concepts

• **Human-centered computing** → **Collaborative and social computing**.

Keywords

Access work, collective, resistance, universities, care, disability, accommodations, infrastructures, networks

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1 Introduction

Universities provide accessibility support to disabled students that can ensure access and equitable participation in education. The most prevalent types of support include accommodations, which involve but are not limited to physical adjustments to the learning environment and access to assistive technologies. Although accommodations are intended to level the playing field for students to become self-sufficient in their educational pursuits, accommodations are ultimately a retrofit that shifts the responsibility of access onto individuals [11]. Disability scholars have been critical of the practice of accommodations at universities because it perpetuates the medical model of disability [11, 20, 42, 61]. The process of enrolling for accommodations requires individuals to submit medical documents as proof of their disability so that campus accessibility offices can determine appropriate accommodations on a case-by-case basis [42]. However, institutional processes of disability classification are built upon a legacy of paternalism [11, 20], which casts disabled individuals as helpless and in need of "fixing" [11]. Our work aligns with recent Human–Computer Interaction (HCI) research in decrying the medical model framing of disability [66] and positioning disabled people as experts and designers of their access needs.

The political/social model [24] reframes disability not as an individual deficit but as a political and social phenomenon, produced through the relations of bodies and societal configurations of environments, norms, and attitudes. Building on this, Hamraie [21] highlights the failure of universities to accommodate disabled people that result in relational tensions, exposing the limits of existing infrastructure and its politics. Within the context of universities, this

means that disabled students may be mis-categorized and marginalized, reinforcing exclusion. Therefore, students must look to other avenues for accessibility-related support, which our work reveals are often offered by student-led groups at the university across a web of formal and informal networks. Disabled student groups rely on digital tools as their default means of negotiating access, often in ways that exceed what formal institutional systems are designed or willing to accommodate.

We draw from relevant HCI bodies of scholarship that relate to the study of infrastructure, engaging with Pipek and Wulf's [40] concept of *infrastructuring* and the generative potentials [27, 51] of *infrastructural inversion* by Bowker and Star [5]. Central to our work is the framework of *routine infrastructuring* introduced by Semaan [49], which emphasizes community practices through technology to collectively adapt and build resilience when disruptions are commonplace in everyday affairs. The aforementioned concepts complement the framing of disability as relational and political, and access as an ongoing process of negotiation. These ideas form the basis of our investigation of disability-related organization with respect to infrastructural configurations. While recent HCI works on community-built infrastructures study the disruptions and the responses of marginalized communities [49, 52, 62], they do not focus on mobilization and collaborative practices that serve as resistance within institutional contexts. Further, prior work has not examined ways in which marginalized people deliberately produce "disruptions" of their own — what we call *counteractive frictions* — to resist, disrupt, and challenge the configurations and values of existing infrastructure as subversive acts of resistance.

Our work is guided by the following research question to develop an understanding of acts of resistance by disabled students: *What are the practices of student groups in response to institutional access challenges experienced by disabled students?*

Drawing on interviews with student disability activists and a corpus of student group-operated social media, we analyze how community-built infrastructures work with, within, and around university systems. Our findings show that participants encountered access frictions situated in politics of academic rigour that were contextualized by bureaucratic processes and entities. In response, students devised mechanisms of accessibility support by appropriating university infrastructure, working with, within, and around institutional constraints of their clubs, unions, or campus service organizations. These practices were further sustained through mobilization across distributed community-based networks that were mediated by digital tools and mutual aid relationships. In adopting these practices, disabled students collectively resist institutional infrastructure.

Student groups, together with the digital technologies they leverage, operate as an *(in)formal care infrastructure* that shifts, resists, and reconfigures values embedded in university infrastructure. We introduce *counteractive frictions*: deliberate disruptions created by communities to challenge, unsettle, and provoke responses from institutional infrastructure. They materialize politics and collective imaginations, serving as democratic praxis to negotiate and reshape disability futures. Care and counteractive frictions co-produce one another; care-based practices give rise to resilient community-organized mechanisms that resist and disrupt, opening new forms of care to emerge. Our work contributes to HCI by arguing that

student-led groups are a type of (in)formal infrastructure that has been collectively created and shaped by marginalized communities. They fill gaps in existing university-related infrastructures to overcome institutional challenges. We reflect on infrastructuring as an approach to negotiate access, blurring informal and formal practices, that bypass bureaucratic constraints.

2 Background

2.1 Appropriating Frictions: Disability Justice Movements in North American Universities

Over the past several decades, disabled people have mobilized to engage in diverse forms of resistance — from early street protests and sit-ins in the 1960s to contemporary digital and electronic technology "DIY" hacks [20]. Such practices demonstrate not only opposition to exclusion, but a legacy of *maker culture* that shapes dominant systems and alternative futures [20]. In particular, higher education has been a key site of disability activism in North America [11, 21].

In the 1960s and 1970s, university students were at the forefront of civil rights advocacy and campaigns for accessible environments [11, 20]. One of the most influential demonstrations of resistance was at the University of California, Berkeley, where disabled students organized sit-ins, protests, and direct actions demanding equitable access to education and participation in university life [20]. These actions challenged hegemonic systems of knowledge, which centre non-disabled values, paradigms, and epistemologies [20]. An outcome of these movements was the widespread installation of curb cuts, which were designed with sloped edges to allow wheelchair users to move between streets and walkways [21]. Initially advocated by disabled students and activists in Berkeley, curb cuts were not viewed as technical solutions but as political provocations that redefined university infrastructure [20, 21]. *Access frictions* [20] emerge at points of tension between institutions and agents of resistance. We ground our work in Science and Technology Studies scholar Aimi Hamraie's framing of these frictions not only as markers of precarity but also as leverage for change to university infrastructure [20].

Hamraie [21] further argues that attempts to smooth over access so that infrastructure can be "frictionless" and adapted by students would depoliticize disability, obscuring embedded power relations. By situating our work within this legacy, we demonstrate a long-standing maker culture in which disabled students and activists strategically leverage frictions to demand systemic change.

2.2 Accommodations as Retrofit: The Neoliberal and Legislative Backdrop of Canadian Universities

To understand accommodations, it is necessary to first examine the differing conceptions of disability that have shaped over time across societal, institutional, and political landscapes. The *social model*, articulated by disability scholar and activist Mike Oliver [35], situates disability within society by asserting that the standard of living of disabled people can be improved by removing physical and social barriers. In contrast, the *medical model* views disability as an illness or "deficit" within the individual [11]. For disabled people

with intersecting marginalized identities, seeking care continues to involve experiences of discrimination [1, 29, 65], shaped by an enduring history of anti-immigration, eugenics, and medical experimentation [11, 22]. Scholars argue that this model has implicit paternalistic assertions that disabled people cannot determine their own care needs [11, 20]. Today, the medical model of disability still dominates institutional settings, such as universities [11, 61], where access is legitimized through diagnosis and where support is given on a case-by-case basis [42]. Rather than addressing systemic issues, accommodations are often described as "retrofit," framing accessibility as personal responsibility [11, 42, 61].

While the social model serves as a valuable framework for understanding societal implications of disability, Alison Kafer [24] suggests that disability is not only experienced through relations between people and spaces [35], but also has broader political implications — regarding power, social values, and cultural forces. In our work, we conceptualize disability using Kafer's *political/relational* model [24]. Through this lens, disability can be politically contextualized — from how and what accommodations are prescribed to the measures instructors take to provide support to disabled students. Therefore, the meaning of disability is located within relations that are shaped by things like governing bodies, policies, and institutional values [24]. The politics of accommodations reflect broader neoliberal logics, which Hamraie and Fritsch [21] posit are the result of capitalist systems that instill values of self-sufficiency. We extend these critiques by relating the commodification of education to academic rigour, further perpetuating ideals of self-sufficiency.

In Canada, neoliberal reforms have positioned higher education as a competitive marketplace where universities brand themselves as providers of rigorous academic experience and students as consumers [19, 48]. Within this system, institutions prioritize projecting academic excellence and prestige, which complement reputation, which can be represented by national [12] and international [45] university rankings. Jay Dolmage [11] argues that universities highlight their rigour as a marker of prestige, while accessibility is seen as a potential threat to these standards.

Provincial legal frameworks, such as the Accessibility for Ontarians with Disabilities Act (AODA), established standards across several domains [18], requiring institutions to make "reasonable efforts" [18] to ensure accessibility but are often limited to institutional interpretations of undue hardship [47, 61]. Despite being a proactive measure, the AODA provides little direct guidance and compliance mechanisms for universities to adopt consistently [47]. As a result, disabled people who encounter accessibility issues must turn to provincial Human Rights Tribunals [9].

Protection of disability rights includes federal and provincial legislation, such as the Charter of Rights and Freedoms [33], the Canadian Human Rights Act, and the Accessible Canada Act [34]. These laws protect against disability discrimination but only apply to federally regulated industries [10, 33, 34], and do not currently include higher education institutions — leaving most provincial institutions subject to provincial human rights codes [9, 10]. Within the neoliberal framework of higher education and government, the disabled participants in our study must individually shoulder the burden of proof when seeking accommodations or filing complaints with their provincial Human Rights Tribunal.

HCI scholars note that existing work often overlooks the expertise of disabled people, with many studies consulting parents, caregivers, or doctors instead of individuals, perpetuating the medical model of disability [66]. We contribute to scholarship that calls for disabled people to be included as contributors rather than recipients of technological interventions [3, 23, 59, 60, 64, 66]. Building on this critical turn, Williams et al. [63] introduce the concept of *counterventions* as a necessary reflexive intervention to design and research practice that unsettles ableist norms by shifting focus to exclusionary sociotechnical systems. However, scholarship on disability-related resistance in infrastructuring remains underexplored.

3 Related Work

Our study examines how disabled students negotiate access in their day-to-day interactions with university infrastructure through the use of technologies. To situate our work, we draw on scholarship in Critical Disability Studies and HCI/CSCW, as these fields provide important frameworks for analyzing the interplay between disability advocacy, technology, and infrastructure.

We focus, in particular, on scholarship that centres disabled students' care and advocacy work that moves beyond individual accessibility and toward collective responsibility, peer support, and infrastructural transformation.

3.1 Disability at Universities: Shifting from Individual to Collective Practice

As covered in Section 2, neoliberalism shapes configurations of bureaucracy and accessibility services offered by universities. Disabled scholars who have inhabited these spaces describe "access work" as inherently unfinished; it is an ongoing process shaped by the relational, continuous, and constantly unfolding nature of disability [61]. Universities often do not anticipate the dynamic and often unpredictable nature of disability, highlighting limitations with university systems [42, 61]. In a national study, the number of self-reported disabled students in Canadian universities has risen since 2019, from 24 to 35 percent [28]; yet there is little administrative support to meet this growing demand [15]. Barriers to formal diagnosis have been well-documented in the literature, including high financial cost and the stigma of identifying as disabled [7, 44]. Recent HCI work shows that marginalized users must navigate fragmented university infrastructures through workarounds, insider support, and acts of resistance, revealing systemic gaps in inclusive design [25].

Disability studies scholar Margaret Price [42] and sociologist Tanya Titchkosky [61] interrogate how institutions mobilize "access" in ways that intentionally and unintentionally reproduce ableist norms of "independence" and productivity. In contrast, collective practices of access are resistant and done in solidarity [20]. Because individual access is bureaucratized through the process of accommodations, access labour and the accompanying challenges experienced by disabled people become obscured [42, 61]. These challenges produce emotional labour from ongoing negotiations with staff for accommodations, efforts to seek external resources and solutions, and contending with bureaucratic delays that cannot accommodate emerging needs. Price [42] describes this through the

phenomenon of "crip spacetime," a material-discursive reality in which disabled people live according to temporalities that remain invisible to privileged groups who can afford to overlook them. These realities demand that "significant effort must be expended to ensure spatial, visual, or temporal access"[42], producing an expertise among disabled people who must navigate inaccessible university conditions. Hamraie and Fritsch [21] highlight how the making of environments and artefacts is reflective of the politics of knowing, which call on practices of what they call "knowing-making" as ways for disabled people to shift, reconfigure, share spaces, and develop mutual aid networks using technology.

Lawyer and trans activist Dean Spade [54] characterizes mutual aid as a way to "support vulnerable populations to survive, mobilize significant resistance, and build the infrastructure we need" and "take responsibility for caring for one another and changing political conditions." HCI scholarship [2, 32] further references the Black Panther Party, a radical political organization founded in Oakland, California by Black university students, as a seminal mutual aid movement. Through informal community initiatives, including free health clinics, meal programs, self-defence courses, and child care services, the Party has demonstrated how mutual aid could operate as a survival strategy and political praxis throughout the 1960s and 1970s.

Critical disability scholars [21, 31, 38, 42] share this orientation, viewing mutual aid as inexplicably intertwined with care. Leah Lakshmi Piepzna-Samarasinha [38] terms this phenomenon as "care webs," describing care as a collective politicized practice rooted in interdependence, solidarity, and disability justice. Whereas HCI scholarship on mutual aid is largely situated within crisis informatics, particularly in response to disruption caused by the COVID-19 pandemic [16, 26, 32, 43, 46, 53, 67]. Our study relocates mutual aid and care within the everyday practices of resistance at the university.

3.2 Infrastructuring: Revealing the Politics of Breakdowns & Collective Practice

We build understandings of community access labour at the university through the lens of *infrastructuring*: practices and moments in which people adapt, maintain, and repair infrastructure beyond the initial system design [6, 40]. While infrastructure is imagined in the background of everyday activity, Star and Ruhleder [57] suggest that infrastructures are, in fact, socio-technical, relational, and difficult to distinguish. Infrastructures are embedded within social arrangements and technologies, invisibly supporting tasks, embodying standards, and co-evolving with conventions of community practice. Infrastructure becomes visible primarily during breakdowns or through the learned expertise of membership [57]. Breakdowns expose frictions when infrastructure fails to perform as intended, which follow Bowker and Star's notion of *infrastructural inversion* [5]: enable a gestalt shift that surfaces the politics of classification and institutional order.

Though infrastructure appears "frictionless," this invisibility is maintained through continuous stabilizing forces [5]. Simultaneously, destabilizing forces, such as misaligned values, rigid policies, and exclusionary classification systems, create frictions that reveal encoded politics within infrastructure [5, 55, 58]. When individuals

are excluded from a system, they fall into a liminal and undefined state that Star terms a *residual category* [56]. Individuals sorted into these residual categories become illegible to systems that grant access to resources, leading to exclusion and diminished access. As noted by Semaan [49], the values, perspectives, and biases embedded within infrastructures may be misaligned with its users, producing routine disruptions to everyday life. Beyond viewing infrastructural inversion [5] as an analytical framework, Simonsen et al. [51] note its generative design potential through infrastructuring.

Because disabled individuals and communities experience routine disruptions every day from interactions with the social and physical environment, *routine infrastructuring* becomes suitable for our study. Routine infrastructuring refers to the "building everyday resilience with technology"[49]. Semaan focuses on everyday survival in precarious times that become realities for marginalized and oppressed communities, documenting several examples of routine infrastructuring: war survivors under the occupation of Iraq, online LGBTQ+ community members, and diasporic networks. Subsequent work delves into more specific domains, such as Wilcox [62] demonstrating alternative systems of care and knowledge-sharing practices that affirm and support trans health and well-being. Simpson et al. [52] examine infrastructuring access of neurodivergent TikTok users to support broader community needs, framing practices as forms of incidental work.

Pior HCI work has examined collective practices within institutional medical settings relating to care work, which often involve infrastructuring healthcare services. For example, one study showed that peer-generated content and moderation were more trusted by care recipients than official guidance [17]. Other HCI work has focused on "lateral care" [37] and "human infrastructures" [49, 52, 62] in marginalized communities as forms of collective practice that resist and challenge top-down interventions. We contribute to this body of work and its intersection with access by examining collaborative and mutual aid practices, an area that has not yet been explored within this domain. In university settings, accessibility has been shown to emerge through informal and formal practices across intersecting infrastructures with technology mediating accessibility work at institutional seams [30]. Fernandes et al. [14] further emphasizes disability justice as a collective organizing framework, demonstrating how disabled communities use digital technologies to advocate for rights, reconfigure infrastructures, and build alternative futures.

Emerging HCI literature calls for "designing with friction" [27, 36, 50]. Korn and Voida [27] examine infrastructuring in the context of civic engagement, arguing for the deliberate production of frictions as a strategy for designers to expose politics and provoke political discussion. They advocate for democratic pluralism to raise civil awareness among civilians, positing that consensus flattens differences and hides the politics of sociotechnical systems. We extend Korn and Voida's [27] work by focusing on disabled people, who resist exclusionary infrastructures as part of everyday practice.

4 Methods

To understand how disabled student groups negotiate access at the university, we adopted a qualitative approach that included semi-structured interviews and a targeted digital ethnography of student-operated social media accounts. Interviews provided insight into participants' situated encounters with institutional barriers, as well as group configurations and approaches to organization that comprise accessibility support networks.

In our digital ethnographic analysis [39], we treated social media evidence not as isolated online artefacts but as one component of the broader socio-technical arrangements through which access work unfolds. The social media analysis assisted our network mapping exercise and was conducive to exploring relations between formal and informal, and offline and online, collaborations.

Through these methods, we were able to triangulate students' lived experiences with their socio-technical practices that constitute community-built accessibility infrastructures.

4.1 Participants & Recruitment Practices

We recruited 13 participants for our interview study. Our participants were disability activists who held leadership positions in student groups at a large Canadian university, comprising undergraduate and graduate students. We used purposive and network sampling to identify leaders of student-led initiatives whose mandates included disability advocacy or accessibility services (e.g., student unions, registered clubs, and volunteer programs). The research team identified and mapped a network of student-led initiatives on campus consisting of individuals, organizations, and services that were related to disability advocacy and accessibility.

Table 1: Study Participants and Their Student Group Affiliations

P ID	Primary Leadership Position
P1	Student Club Leader
P2	Student Union Executive
P3	Student Club Leader
P4	Student Club Leader
P5	Student Activist
P6	Student Activist
P7	Student Club Leader
P8	Student Union Executive
P9	Campus Services Volunteer
P10	Student Activist
P11	Campus Services Volunteer
P12	Student Union Executive
P13	Campus Services Volunteer

Initially, our approach entailed using publicly available information such as (a) disability-related resources and organizational listings on the university website, (b) public social media presences of relevant groups, and (c) news articles from professional media outlets and student-led campus newspapers. We recruited five participants using these methods.

To further recruitment efforts, we partnered with a student journalist who had experience collaborating with prominent disabled student activists across various campus spaces, and who subsequently facilitated introductions to an intimate community of activists and clubs that were at the heart of disability initiatives at the university. We iteratively maintained a map of student-led disability initiatives across campus to ensure that a diverse range of participants were represented, encompassing varying forms of disability support. Recruitment concluded when incoming interviews yielded no substantively new codes (code saturation). The study was approved by the authors' Research Ethics Board. Consent forms were sent to participants before each interview, outlining their rights as participants and how interview data would be used (see Appendix Section A for the interview protocol).

4.2 Data collection

Interviews: The interview questions were designed to help participants describe the bureaucratic, environmental, and attitudinal factors of disability. Participants were asked to identify digital tools that their groups used to facilitate recruitment, knowledge management, and mobilization practices toward achieving greater collective access (see Appendix Section A for interview questions).

We adapted prompts to each participant's role and group. The duration of each interview ranged between 60 and 90 minutes. The interviews were conducted via Zoom video-conferencing software. Following each interview, recordings were transcribed by researchers. Participants' names were anonymized, and all identifying information was redacted to maintain confidentiality.

Social media corpus: In parallel, we constructed a corpus of group-operated social media accounts surfaced during recruitment and interviews. This yielded 12 social media accounts across Instagram, Linkedin, and Tiktok that we analyzed to understand the type of content and programming available. A template was created to guide our observations and notes for analysis (see Appendix Section B).

4.3 Analysis

Following the completion of the interviews, we performed a thematic analysis deploying both an inductive and deductive approach [8]. Four of the researchers, R1, R2, R3, and R4, used NVivo12 to open-code a portion of the transcripts to develop an initial code list and memos of notable relationships between these codes. Following this activity, researchers deliberated to collaboratively develop a coding book. The coding book was applied for the second round of coding across the interview transcripts and social media analysis memos. Each interview was coded by R1 and R2, and each social media account was coded by R1. The researchers who worked on the same transcripts held discussions to address raised questions or concerns. Once the coding was completed, we calculated inter-coder reliability scores and used them to surface points of divergence in how we were interpreting the codes. This approach was used not to reach a singular positivist interpretation, but rather to achieve a consensual situated framework within a team of researchers with

diverse research experiences. Throughout the coding, R1, a disabled Southeast Asian woman, facilitated reflexive discussions, as our data analysis was shaped by the diverse positionalities of the research team. The team included disabled researchers, including student researchers who have navigated university accessibility systems at different stages. Senior researchers who oversaw the research also brought engagement with disability through lived experience and research programs in these areas. We recognize that both our varied locations and our proximity to these issues informed how we attended to participants' accounts.

Following iterative axial grouping, we assembled themes that integrated interview accounts with (when applicable) corroborating (or disconfirming) social media evidence [39]. We also examined linktrees, followers, connections, likes, and comments to understand the nature of collaborations with other individuals, school groups, or university-affiliated organizations and the level of outreach. We performed this analysis iteratively, which helped contextualize interview accounts and map relationships between formal and informal student accessibility networks.

Our finalized themes pertain to the following:

(1) Structural, social, and political frictions that complicate accessibility for disabled students;
(2) Informal and formal configurations of student groups that influence institutional oversight and thereby the access labour that can be performed by students;
(3) Mobilization and collaborative practices of student groups through the use of digital technologies.

4.4 Limitations & Reflections

This study has several limitations that should be acknowledged. Our recruitment strategy was initially designed to identify leaders from student organizations affiliated with disability advocacy and accessibility, rather than explicitly recruiting disabled students themselves. Our goal was to understand how accessibility was organized between student groups. However, during the course of the study, many participants voluntarily disclosed their own disabilities and described how their lived experiences informed their advocacy. This unanticipated disclosure shaped both the data we collected and the framing of our analysis, demonstrating that disability is not only an organizational mandate but also deeply personal and embodied for many of the students and researchers involved.

First, recruitment was shaped by both opportunity and access. Despite deliberate efforts to map student groups and reach across networks, our sample was influenced by who was willing and available to participate. Networking gave us access to an intimate activist community, but it also meant that groups without a strong social media presence or formal recognition may not be represented in our data. We risk amplifying the voices of more resourced or well-connected groups while overlooking others working informally.

Second, the dynamics of disclosure were deeply shaped by researcher positionality. Several members of the research team, including the first author, identify as disabled, and this positionality contributed to a sense of shared experience that may have encouraged participants to disclose their disabilities more openly. In contrast, it is possible that interviews conducted exclusively by non-disabled researchers would not have produced the same degree of openness or comfort in discussing lived experiences of disability. While we view this dynamic as a strength that allowed for deeper trust-building, it also demonstrates how the identities of researchers influence the knowledge that is co-produced in qualitative work. We acknowledge that intersectionality is a critical lens in Critical Disability Studies [21]. However, our data did not allow us to adequately reflect this dimension because only one participant chose to disclose their demographic information. Therefore, intersectionality did not come up in our data analysis.

Finally, as with all interview-based studies, our findings reflect participants' self-reported accounts and curated social media traces. While these accounts are valuable in understanding how students make sense of their work, they also risk emphasizing successes, minimizing challenges, or aligning with institutional narratives of advocacy. We attempted to mitigate these limitations by triangulating across data sources and engaging in collaborative, iterative coding. Still, our interpretations are partial and situated, reflecting both the specificities of our sample and the positional standpoints of the research team.

Despite these limitations, the study provides a crucial window into infrastructures of care developed by disabled student leaders. We hope this work encourages future research that explicitly engages a broader diversity of disabled students, attends to dynamics of disclosure and researcher identity, and extends analysis across multiple institutional contexts.

5 Findings

From our findings, we discovered that student groups are a type of *(in)formal care infrastructure* that has been collectively created and shaped by disabled students to negotiate access needs for the university community. Our findings can be broken down into three chronological themes:

Frictions of Access: Disability & Bureaucracy at the University. Participants experienced frictions in their interactions with university infrastructure. From our findings, we locate frictions between participants and bureaucratic processes that indicate broader political implications related to rigour. See Section 5.1.

Working With, Within, & Around Institutions. As part of the university, student groups use university resources to help promote practices of access. We examine the formal configurations of student groups, ranging from most to least formal, and how they produce institutional advantages and constraints for access work. See Section 5.2.

Collective Organizing: Removing Barriers to Participation. We outline the ways in which participants mobilized, forming digital and human networks that collectively address institutional barriers. Within and beyond their immediate student groups, participants used technologically-mediated practices to build resilient mechanisms that push back against institutional conventions through an interplay of formal and informal practices. See Section 5.3.

5.1 Frictions of Access: Disability & Bureaucracy at the University

Before introducing the strategies through which student groups respond to gaps in university infrastructure, we first trace participants' first-hand accounts of how access frictions take shape in their everyday university lives. As a marginalized group, when disabled students move through university systems, they are often confronted by moments in which needs were delayed, dismissed, or rendered illegible. As a result, students develop awareness of university politics from their exposure to rigid bureaucratic processes and resistant authority figures — which, in their view, are governed by priorities of maintaining academic rigour within classrooms. Through these encounters, participants understand the conditions of their exclusion from university infrastructure.

5.1.1 Burden of Proof: Legibility & Classification. Students' attempts to legitimize their access needs made visible the bureaucratic structures that constrain disability support. Participants described the work of making their access needs legible to university administration as a barrier, revealing infrastructural gaps in bureaucratic procedures. P2, whose disability needs often varied over time, explained that accessibility services provided "*a formalized list of access to x, y, z accommodations that was not always going to cut it*" (P2, Student Union Executive).

University accommodation systems required students to produce evidence — usually medical documentation — to qualify for accommodations that, in theory, should reflect their diagnosis. However, several participants noted that accommodations often overlapped with those of other students with different disabilities, leading them to hypothesize that accommodation advisors assigned accommodations to students from a standardized master list. Consequently, P2 felt that the complexity of their disability could not be reflected in their assigned accommodations. Requests for what students call 'non-standard' accommodations were difficult to attain without additional medical documentation, potentially resulting in delay and denial of claims [42]. Across accounts, students inferred that accessibility office systems often operated through implicit thresholds of disability legitimacy, determining eligibility based on whether they were perceived as "*disabled enough*" (P7, Student Club Leader) to qualify for accommodations.

Consistent with prior work in disability studies [11, 30, 41, 61], participants believed that disability was treated as "*not true unless proven otherwise*" (P4, Student Club Leader), placing the burden of proof on students, who must navigate bureaucratic structures to be acknowledged by the university and its members as eligible for support. Such experiences led students to believe that bureaucratic processes were rooted in institutional logics of academic rigour — beliefs which were reinforced by interactions with university staff, some of whom were perceived as unsympathetic or resistant to accommodations.

These experiences sharpened students' awareness of how the accommodation system excluded them — knowledge that later informed their strategies for seeking support beyond formal channels, as discussed in subsequent sections.

5.1.2 Navigating Power Dynamics: Fairness & Rigour. Participants described faculty, instructors, and administrators as gatekeepers who reinforced bureaucratic procedures, institutionalized ideals of "fairness," and academic rigour — experiences that informed student understandings of infrastructural politics. Competitive programs, such as law, were perceived by participants as having higher standards. There was an imperative for the program to be viewed as prestigious and capable of producing hard-working candidates that attracted both reputable employers and prospective students. As a member of a student union, P2 described a conflict of priorities between accessibility advisors to advocate for accommodations and faculty administration to uphold a competitive institutional reputation:

> "…*the law school considers how accommodations make us look and maintains equitable levels of difficulty for each student, with little consideration for compassion.*" (P2, Student Union Executive)

P2, like other students, believed that they were held to the same standards of success as their non-disabled peers, even when demanding class deadlines and in-person attendance were inaccessible. Prestigious departments introduced additional bureaucratic layers to ensure that accommodations were not either a "*lowering of standards*" (P2, Student Union Executive) or an "*unfair advantage*" (P4, Student Club Leader). For instance, students in the law program required an internal committee to finalize accommodation entitlements, an additional step compared to other faculties. In line with disability scholarship [31, 41], the students felt that they had to perform emotional labour by sharing explicit details about their lived experiences as a means of gaining sympathy from hesitant or contentious instructors. While not prohibited, students were not legally required to reveal their disability diagnoses to university staff outside accessibility services. These experiences were not unique to the law department, as participants described similar resistance from other faculties. Beyond mandatory legal disability compliance training or legal litigation (see Section 5.3), participants found that there was little recourse when accommodations were not acknowledged.

These experiences clarified the limits of institutional infrastructure, prompting many students to turn toward peer-led or community-based avenues for support. This shift lays the foundation for understanding the roles that student groups later assume.

5.2 Working With, Within, & Around Institutions

As student groups are actors in the university infrastructure, they too must navigate institutional expectations to attain resources. They leverage university resources, including physical campus spaces, formal communication channels, and staff relationships to support broader student community needs — attending to frictions revealed in Section 5.1.

In this section, we examine the topological power configurations of student groups that shape access work — including the visibility and risks — that students can perform within their roles. We characterize student groups as a type of (in)formal university infrastructure. First, they are built on the foundation of the institution and have their own systems, structures, and practices. Second, they comply — to an extent — with institutional standards and

conventions. To better understand different forms of student infrastructures, we distinguish student groups into three categories from most to least formal: campus services, student unions, and student clubs.

5.2.1 Campus Services. Campus services are embedded in formal institutional structures as integral to university operations. Student volunteers are typically involved in community-based initiatives run by campus services, ranging from recreational activities to academic support groups. Because campus services were interwoven into the university fabric, operations are directly controlled by university employees. As a result, participants who were volunteers had access to financial grants and facilities as part of their job duties. P13, a volunteer for accessibility services, leveraged pre-established relationships with clubs, staff, and departments to promote disability initiatives across campus. P13 used this outreach to develop and plan campus events and recreational programs tailored to the student community.

Despite P13's involvement within the accessibility services office — a formal university entity — access to volunteer-organized events and programs did not require proof of disability. For example, a drop-in ADHD study group promoted on the accessibility website emphasized the following: "*No formal diagnosis is required. Students from across all campuses who self-identify as having a disability(ies) are welcomed!*" Peer writing sessions were seen as accessible, advertised on the university website as "*small, informal, and encouraging*". P6, a student activist, recalled how a peer-to-peer writing group at the accessibility services office served as an accessible solution to emergent mental health needs:

> "*The weekly writing groups that happened through accessibility services... legit saved my life in that time period... Just having a community of writers to write with and not be so lonely...you're part of a community while you're online. I really found it tremendously helpful and it got me through the last few months of my studies.*" (P6, Student Activist)

For P6, the writing group addressed immediate concerns that would not have been feasible through official channels due to long wait times and restrictive bureaucratic requirements. Peer writing groups also provided students with a sense of belonging, cultivating an empowering environment.

5.2.2 Student Unions. Like volunteer-led campus services, student unions were also university-affiliated but operated at a more localized level. As part of a university faculty or department, participants who assumed executive roles within student unions received grant support, administrative assistance, and access to faculty-affiliated communication platforms such as faculty or department websites, newsletters, and social media. Student unions were self-governing, unlike volunteer-led campus services, which were overseen by university staff. Unions often held meetings for their student body, facilitating vulnerable conversations built on trust and understanding about disability matters, as recalled by P8:

> "*If someone wants to talk about disability ...the floor's open to that conversation... Everyone's like very respectful of it — very responsive and receptive... It's in a lot of our meetings and discussions because [redacted] has*

> *such a wide range of people from different backgrounds and circumstances.*" (P8, Student Union Executive)

In recognition of student concerns, unions responded by developing official procedures to counter and override established policies using their close relationships with faculty administration. Student unions could also develop robust extracurricular programs that simultaneously promote professional skill development while covertly supporting disability needs — not all student unions in our study were disability-related. For example, a student union organized a mock trial in which students voiced their concerns as plaintiffs, while faculty and administrators acted as defendants. P8 shared positive outcomes in which disabled students were able to expedite their accommodation requests as a result of the mock trial. Conversely, however, student unions, as formally affiliated groups, were bound by faculty regulations and required approval for events and outreach campaigns:

> "*I would just say that everything we do reflects on the department. So if we make a bad social media post or something happens at an event that wasn't supposed to happen and we didn't take the measures to prevent it or to deal with it, that would inherently cause issues.*" (P8, Student Union Executive)

Student union social media accounts were controlled by their respective department or faculty and had to go through an approval process. A professor of the faculty acted as an advisor for the union to support key decision-making. Student union members were ultimately responsible for maintaining the reputation of their respective faculty or department, which may limit advocacy strategies in compliance with faculty expectations.

5.2.3 Student Clubs. Among the student groups, clubs were the least formal and were completely self-organized. Participants who were part of disability-related student clubs happened to also be in collaboration with active disabled activists or were activists themselves. Student clubs tended to engage in overt forms of advocacy, such as panels that facilitated discursive discussions between students and staff, petitions, protests, and sit-ins. Though student clubs were university-sanctioned, they were not affiliated with any specific part of the university. Student clubs received minimal support, so they were responsible for acquiring resources and establishing their own governance structures. P4 expressed frustration and recounted challenges in receiving funding from the university for their disability advocacy club:

> "*It's informal and it's not affiliated with [the university] at all... I wasn't able to get any funding or support for this initiative because I was basically told this was not in our mandate quite frequently.*" (P4, Student Club Leader)

However, because clubs were responsible for their own social media and internal affairs, they had more control of their advocacy work, as they did not require official university sign-off to make decisions. P7, a student leader of a neurodiversity-related club, initiated an ongoing petition to advocate for sensory-free spaces, responding to a lack of such spaces on campus. The available alternatives were noise-free study rooms, which were loosely enforced by on-site staff, making them unreliable for students with sensory

needs. To raise awareness and build support, their club adopted guerrilla-style tactics, circulating information online and strategically placing posters of their petition within "*over-stimulating*" (P7, Student Club Leader) study spaces. Collective efforts among members led to more than a hundred signatures for the petition. Therefore, as the least formal student entity, student clubs were not concerned with preserving the university's reputation, unlike student unions and campus services.

The configurations of campus services, student unions, and student clubs illustrate the differing infrastructural positions from which students act. As we show next, these unique positions, together, do not limit students; instead, they become the basis for collaborative networks that transcend institutional boundaries.

5.3 Collective Organizing: Removing Barriers to Participation

Drawing on the constraints outlined in Section 5.2, we now examine how student leaders mobilize beyond the structural and political parameters of their student groups. Human and digital networks enabled participants to bypass organizational oversight, share institutional knowledge, and collectively challenge access barriers across campus. We demonstrate that through the affordances of digital technologies, students develop resilient mechanisms that sustain advocacy and community care across cohorts.

5.3.1 Human Networks. Students relied on informal networks to navigate institutional systems, access resources, and mobilize support for disability initiatives. These networks — composed of student groups, activists, and even university staff — facilitated knowledge-sharing and provided mutual aid when formal systems were inaccessible or limited.

Intimate Community Relationships. As discussed in Section 5.1.1, students were expected to navigate university policies related to their accommodations. P11, an editor for the students newspaper, wrote an online article to inform students of exam-related policies.

As part of the student newspaper, P11 emphasized that they collaborated with an intimate community of activists who were involved in disability initiatives. Its student members documented the lived experiences of disabled students through on-the-ground reporting, rather than relying solely on guidance from university staff. P11 shared that P1 was a regular correspondent. P2 and P13 revealed in later interviews that they were also correspondents for the newspaper.

Within these intimate communities, student groups shared institutional knowledge, such as where to find grants, how to navigate funding systems, or who to contact in university departments. Students worked collectively to consolidate resources and grants from disparate sources. P1 and P13 were members of the same disability club and planned a university-wide conference. As members of initiatives and clubs across campus, P1 and P13 leveraged their networks to map potential sources of funding, such as grants from various unions and sponsorships from non-profit campus programs, potential panelists, and volunteers. P1 recognized collaborations and partnerships as key for sustaining initiatives to promote awareness of access matters:

"*It really just through collaboration and through networking and just partnerships with accessibility services, like in particular we've been able to be very successful. In that regard. We're not big, but we're quite popular...we end up relying on our own relationships with people and that's how we are able to sort of organize ourselves.*" (P1, Student Club Leader)

P13's role as a volunteer likely facilitated the club's partnership with accessibility services, granting P1 access to resources, including a formal digital and physical space to host the event.

After interviewing each participant, we discovered the interconnected nature of the support. As an activist, P5 was an accessibility panelist for the disability club that P3 leads. P13 also worked as an executive of the club run by P3 and as an advisor for accessibility services, like the peer-to-peer writing group which P6 used. P2 led a disability-related union that previously supported P5 in their lawsuit against the department. These examples show how participants were part of an intimate network of various clubs, associations, campus services, and unions — individuals assumed roles as recipients of care and leaders of various student-led initiatives.

Evolution from Self-advocacy to Student Advocacy. Across participants, we observed a shift in advocacy from individual to collective — while participants who identified as disabled initially focused on advocating for themselves, they later became engaged in collective practices. P4, a student club leader, began a professional development program for students because they felt that there was a lack of support for disabled students in their transition to the workforce:

"*It was sort of a transition from self-advocacy to student advocacy... a lot more people don't know how to advocate for themselves than it was necessarily just the resources not existing.*" (P4, Student Club Leader)

Through networks with prominent professionals, clubs later received recognition and funding from the university, which was previously unsuccessful due to its small scale and outreach. P4 shared that they were initially part of various university professional associations, but found that they were among the only members that advocated for disability-related representation and support. This is a recurring theme between participants.

The transition toward collective advocacy and mutual aid networks indicates that participants shift away from hierarchical and institutionalized forms of authority and toward community-based practices. Power that is typically concentrated in formal leadership roles within bureaucratic environments is decentralized, which reinforces lateral and dynamic power structures. Students collectively took on the responsibility of advocating for access needs by redistributing them across networks rather than placing them on individuals.

5.3.2 Digital Networks. Embedded within the fabric of human networks are digital technologies that students can leverage to expand the capacities of their access work beyond infrastructural boundaries. We explore how participants used platforms like LinkedIn, Facebook, Slack, Zoom, and Google Drive, and the official university website — shifting between informal and formal channels — to strategically bypass and collectively address access barriers outlined in Section 5.1.

Internal Planning & Coordination. In their equity-related union, P8 mentioned that conversations with their faculty supervisor were held in person, but internal discussions took place on Discord and Instagram because they were faster and more convenient. Participants often defaulted to digital tools for internal planning and coordination: they were more accessible, allowing for synchronous and asynchronous collaboration. For instance, students used Slack and Discord to coordinate asynchronous communications, and Zoom and Microsoft Teams for hosting live meetings. Notably, P7's club set up structured workflows within Discord to support collaboration on petition efforts:

> "*We use Slack, which is Discord for business… We have a general announcement channel. I would say there's a lot of collaboration and independent work happening at the same time. The number of general volunteers in each subgroup is very different...So it's very much divided in such a way that each person gets about the same amount of work.*" (P7, Student Club Leader)

Disabled students cited these communication tools as more accessible, especially when physical bodies cannot be present in events, meetings, and classrooms. Several participants highlighted the importance of offering "*alternative modes of participation*" (P1, Student Club Leader), including access through online attendance. Interestingly, even though remote technologies were often resisted by faculty and administrators, they were seen as default accessible tools for students outside of classroom environments. This was due to their affordances, such as remote access from anywhere with internet connection and access via personal devices.

Maintaining Historical Records for Continuity. In moments of sudden transition, participants used Instagram posts and Google Drive documents as a repository of historical initiatives and events. Digital platforms were crucial in maintaining continuity and collective memory. P8 recalled having to step-up as union president and found documentation of established workflows helpful for continuing advocacy efforts:

> "*We all have access to a Google Drive, which dates back to the beginning of [the Union], so everyone on there can view everything. And I think it's very helpful when you can see what this person has done when they were in my seat.*" (P8, Student Union Executive)

Several participants mentioned the importance of carrying on a tradition of recurring events with an established reputation of success. P2, a student union executive, admitted that it was difficult to "*start from scratch*" (P2, Student Union Executive) and opted to pick up past projects instead. P2 explained that it was important to develop internal mechanisms that support advocacy resilience, emphasizing the need for continuity — especially when fellow members can no longer keep up with advocacy efforts due to feeling "*burnt out*" (P2, Student Union Executive). Anecdotes from participants highlight that leadership in student organizing was often transient, but digital documentation helped preserve institutional memory that could be passed down. Therefore, digital platforms, such as Instagram and Google Drive, offer students a way to maintain momentum, especially when organizing becomes difficult.

Sharing News & Institutional Knowledge. When salient institutional information — pertaining to accessibility policies, social causes, and disability-related news — was not widely recognized by the broader student community, participants leveraged social media to raise awareness. We recall P11's account (see Section 5.3.1) of writing a student-newspaper article to clarify complicated exam policies for disabled students. To drive online traffic to articles hosted on the university website, P11 relied on the influence of other members with larger social media followings:

> "*[Redacted name] ends up doing a lot of call-outs on Reddit and Twitter and Instagram. I don't have as much of a following on those platforms, but she's able to utilize that very well…*" (P11, Campus Volunteer)

In addition to Reddit and Twitter, participants leveraged other social media platforms, such as Instagram and TikTok to demystify complex institutional knowledge that would otherwise remain inaccessible or overlooked on the university website. As a content-rich and widely-used medium, social media platforms were used by participants to keep students informed on disability-related news. Participants expressed that such practices were used to ultimately help students understand and assert their rights through the democratization of information.

Recruitment & Community Outreach. After the university refused to fund the professional development club (see Section 5.3.1), P4 sought external support by cold-messaging and connecting with disabled professionals on LinkedIn. P4's efforts jump-started a professional mentorship program specifically for disabled students. With the growing membership of both students and professionals, the university began to recognize P4's club, opening the door for formal collaborations.

Other participants identified Instagram, Facebook, Tiktok, and Discord as key platforms for informal community outreach and relationship-building. Students fostered relationships in which care is anticipated and shared, generating a sense of emotional ease through peer-to-peer interactions. P3, as a leader of a disability club, mentioned that the promotion of mutual aid events supported recruitment efforts:

> "*Social media, we use that pretty heavily — so we build connections online with other student groups and promote each other's events. That has been pretty successful but overall, it's not our main form of recruitment of members. We also email relevant opportunities to different departments and to inform our members of course. We try to stay up-to-date with our blog on our website and we use Microsoft Teams and well… to host our events — hybrid to ensure students have the opportunity to come.*" (P3, Student Club Leader)

Through platforms like LinkedIn, Instagram, and Facebook student groups advertised and hosted welcoming, intimate, and informal environments to create conditions that enable intimacy and trust — promoting disability-related resources, articles, and events. Based on our social media analysis and interviews, student groups reposted content and tagged accounts of other organizations, demonstrating online solidarity. Digital networks — formed by content sharing and tagging — strengthened community ties between

student groups and the broader disability community through social media.

Formalizing Disability Concerns. Through sustained efforts, student groups make access barriers legible by formalizing concerns that become difficult for the university to ignore. In Section 5.2, we note that campus services, unions, and clubs developed different types of intake mechanisms for students to participate, without bureaucratic red tape involved in the proof of disability. P5, a disability activist and student, sought support from a student union after they filed a lawsuit against the university. Their faculty allegedly refused to provide P5 with accommodations to attend their classes remotely online during the COVID-19 pandemic. The university's faculty of law website contained a section dedicated to the promotion of various student-led groups. The promotional text for a disabled students' law union read the following:

> "*We also support students seeking short-term or long-term accommodations. Membership is not required to seek support and advice from the [redacted] association. Any information shared with us will be kept confidential. If you would like to connect with us, please email [redacted].*"

We learned from P5's account that this union covertly assisted their hearing submission to the Human Rights Tribunal via Facebook Messenger, rather than through the official email address listed on the university website. The disabled members of the union carved a path for P5 to successfully escalate their case to the Human Rights Tribunal, which reduced legal fees without retainment of a lawyer. As a result, P5 attended an online hearing, where their dispute with the university was mediated over an online Zoom call. Informal social media practices demonstrated that student unions prioritized access needs of students, as they were willing to evade faculty supervision, potential gatekeepers of access. Additionally, P5 acknowledged the imperative role other student clubs have played in providing a public forum to collectively amplify student concerns:

> "*I think just creating a space where people can share their experiences is inherently very subversive in an institution that is not catered for students with disabilities because there's a lot of privacy around accommodations and it's almost this very hidden thing.*" (P5, Student Activist)

Student groups recognized that when institutions acknowledged collective concerns, it strengthened their negotiating power through escalating pressures. Before the hearing, P5's legal case had received national news coverage, which caused the law program to eventually reform its accommodation policies. In response, the same law union that provided furtive legal support to P5 instituted a requirement for the involvement of disabled students in faculty discussions about accommodation assignments.

All together, student groups networks do not rely on a central institutional authority figure to dictate support and care; decentralized use of digital tools by network actors further subvert top-down power structures.

6 Discussion

We advance three major observations from our findings to understand the sociotechnical practices of student groups in responding to access barriers from university infrastructure. First, students learn about the politics of academic rigour from everyday encounters with access frictions — emerging from exclusionary university systems, bureaucratic procedures, and authority figures that dictate the legitimacy of their access needs. Second, students navigate the constraints within the formal configurations of their assumed roles as campus volunteers, union executives, and club leaders. As formally sanctioned entities, student groups leverage the university resources at their disposal to advocate for equitable access and participation. Third, within and beyond their intimate circles, student groups mobilize across the university landscape through technologically mediated community practices, forming mutual aid networks that build resilient mechanisms and resist institutional barriers.

These observations draw attention to the behind-the-scenes access labour through which student groups build resilient mechanisms of care and access work using technology. Drawing on Semaan's [49] concept of routine infrastructuring and Hamraie's [21] framing of access frictions as political praxis, we examine how students navigate accessibility barriers produced through interactions with university infrastructures. These practices involve infrastructuring [40, 49] to re-imagine and reconfigure futures for themselves.

Our contribution to HCI scholarship is twofold. First, we enrich understandings of access labour by reframing it as collective community infrastructuring [49, 62] by (in)formal care infrastructure; a relational and sustained practice rather than an individualized responsibility. Second, we argue that frictions are not solely disruptions to be managed but also generative sites of resistance. Student collectives strategically produce frictions that challenge dominant constructions of academic success, expose infrastructural limitations, and negotiate alternative futures.

In alignment with recent HCI scholarship that draws on Critical Disability Studies [3, 23, 59, 60, 63, 64], we position disabled people not only as recipients of care but also as infrastructural experts whose knowing-making practices [20] demonstrate the political potential of friction [27, 51].

We trace the following dimensions of friction: first, as a relational breakdown within bureaucratic systems; second, as a strategically produced force mobilized by student groups as a form of political praxis and resistance; and finally, we discuss the boundary conditions that make counteractive frictions possible within the university context and consider implications for future work.

6.1 Attending to Frictions: Access Work as Routine Infrastructuring

Our analysis demonstrates that access frictions surface the relational barriers disabled students encounter when navigating university bureaucracy, particularly with respect to classification systems [56] that determine eligibility for accommodations. These barriers are a consequence of processes and standards that fail to anticipate relational, dynamic, and unfolding aspects of disability [41, 61]. As students move through these systems, they encounter delays, rigid

documentation requirements, and resistant university staff [11]. In line with Bowker and Star [5], these breakdowns function as moments of infrastructural inversion that make visible the institutional exclusions which otherwise remain imperceptible to those not directly affected [11, 42, 56].

We identify disabled students' responses to these conditions as instances of what Semaan calls *routine infrastructuring* [49]: the continual reconfiguration of sociotechnical arrangements to sustain everyday life under persistent disruption. Student groups are critical intermediaries that respond to access frictions raised by members that disrupt everyday university life. Together with the digital technologies they leverage, these groups operate as what we call an *(in)formal care infrastructure*, building alternative services, adapting to institutional constraints, and negotiating with bureaucratic systems. For example, peer writing groups reconfigure institutional norms by removing the burden of proving disability, enabling hybrid forms of participation, and offering strategies that align with neurodivergent ways of learning and being. Similarly, in response to the lack of disability representation, a student developed a professional mentorship program by recruiting disabled professionals through LinkedIn.

Prior work [49, 52, 62] has examined routine infrastructuring primarily within dispersed or loosely institutionalized networks. Simpson et al. [52] frame the routine infrastructuring of accessibility as an unintentional consequence of distributed online practices. Our study situates routine infrastructuring within a centralized, bureaucratically governed institution where access claims are tightly regulated. In this context, access labour is deliberate, collective, and politically situated. In doing so, we extend HCI scholarship by reframing access labour as routine infrastructuring: sustained, collaborative, and resistant to the reactive, ad hoc model of accommodations offered by institutions [20, 42, 49, 61].

6.2 Infrastructuring as Collective Resistance: Counteractive Frictions

Next, we discuss how student groups directly challenge authority; by not only attending to issues caused by access frictions but generating counteractive frictions of their own as visible demonstrations of resistance to confront university decision-makers. We established that access labour is a form of infrastructuring to sustain everyday life through disruption [49]. These practices are not limited to routinely adapting, maintaining, and repairing institutional systems; they can also include behind-the-scene practices of disabled students towards the enactment of disruption to institutional infrastructure.

We propose the concept of *counteractive frictions* to describe intentional, strategically produced frictions through which marginalized communities contest hegemonic infrastructures. Our study reveals that frictions are produced bilaterally: university infrastructures generate harmful frictions that emerge relationally from access barriers caused by university infrastructure, but student-led community infrastructure also strategically appropriates and redirects these frictions to disrupt institutional routines and demand change as a form of resistance.

We define the following properties of counteractive frictions produced by community-built infrastructure:

(1) **They materialize and contest politics.** Counteractive frictions expose political values encoded in institutional infrastructure — such as rigour, merit, and self-sufficiency — while asserting alternative community values around access, care and collectivism;

(2) **They accumulate through mobilization.** They accumulate metaphorically through collective mobilization and the knowledge-making expertise of community infrastructures that adopt (in)formal practices;

(3) **They are latent relational and temporal forces**. They represent the ongoing situated negotiation of access because disability has political/social dimensions [24] that are always unfolding;

(4) **They strategically disrupt.** Counteractive frictions are strategic interventions produced by (in)formal care infrastructure to provoke, re-shift, and unsettle dominant norms and power relations of exclusionary systems;

(5) **They lead to reconfiguration.** Counteractive frictions do not merely expose barriers — they have the power to imbue community values, practices, and norms into existing institutional infrastructure through acts of resistance;

(6) **They are of natural consequence**. They emerge as a natural part of democracy, embodying the collective will of marginalized communities.

Building on Bowker and Star's concept of infrastructural inversion [4], we shift attention from frictions as symptoms of breakdown to frictions as deliberate interventions [51] — counteractive frictions interrupt the pursuit of "frictionlessness" access in both the design [50] and ongoing evolution of infrastructure [20]. While infrastructures typically fade into the background of everyday lives, becoming invisible and therefore "frictionless" through processes of stabilization, normalization, and routinization, this frictionless state is accomplished through sustained and continuous forces that stabilize institutional norms, classification structures, and procedures [55, 56].

However, disabled students do not simply encounter and endure frictions produced by the university; they draw on their expertise within institutional configurations (see Section 5.2) to actively mobilize, using breakdowns as openings to build or maintain (in)formal care infrastructures and cultural norms that strategically generate new counteractive frictions. These acts of infrastructural disruption resist stabilization itself, unsettling the policies, classifications, and procedural logics that enforce compliance and define whose needs are recognized as legitimate. They leverage the political visibility created through breakdown [55] to reconfigure power relations, contest hegemonic definitions of access, and reconfigure the conditions under which participation, care, and re-imaginations are made possible [62].

6.2.1 Counteractive Frictions as Political Praxis. Resistance, in our account, is enacted through the creation of collective care infrastructures that re-imagine what access can mean, who it is for, and how it must be sustained. Student groups directly challenge authority; by both attending to issues caused by access frictions but also generating counteractive frictions of their own as visible demonstrations of resistance to confront university decision-makers. Our study advances HCI scholarship [27, 36, 50] about "generative frictions"

that open up space for interrogation and political criticism through their potential to provoke and re-imagine futures. We argue that counteractive frictions promote healthy political practice. Rather than making infrastructures and the design of services "frictionless" or "adaptive" for disabled communities — which is not possible nor desirable because disability is an ongoing negotiation of access [21, 42, 61] in which frictions will emerge [20] — student groups strategically leverage points of disruption to confront authority, compel negotiations, and demand systemic change.

We expand Korn and Voida's work [27] framing the intentional and generative production of frictions via *infrastructuring* as design practice, which enable democratic discussion through contention. Part of a growing scholarship in HCI and design, "designing with friction" [27, 36, 50] has been argued as a deliberate tactic to surface politics and prompt reflection across domains. Our study aligns with this turn but shifts the locus of agency: frictions here are not primarily introduced by external designers, but generated by disabled students themselves. We depart from this narrative of friction-as-design that implicitly assumes a relatively "apolitical" or unaware public needing to be provoked into engagement [27]. Our participants are already aware of institutional politics as marginalized members of university infrastructure. We understand attempts to render infrastructure 'frictionless' or endlessly adaptive as efforts that risk depoliticizing disability and obscuring encoded power relations. In this context, counteractive frictions become a form of political praxis through which disabled students renegotiate the terms under which participation and access are defined to resist university infrastructure that would otherwise overlook or exclude them.

Our theorization is grounded in the relational/political model of disability [24], which frames disability as a political identity embedded in contested infrastructural futures rather than a personal or social construct. Encounters with institutional access frictions thus become inherently political: they reveal the futures the university imagines for disabled students (and those it rules out). Individuals who directly encounter access frictions possess the situated knowledge [1, 21, 64] required to subvert and reactivate them as counteractive forces that confront university decision-makers [20].

For example, when a student was denied a request for online accommodations, they drew on support from disabled members of the law student union. Although the union advertised its legal advisory services on formal university webpages, correspondence occurred over Facebook Messenger to avoid faculty surveillance. The subsequent hearing with the Human Rights Tribunal was conducted via Zoom, symbolically forcing the university to confront access needs in a digital environment previously denied as an accommodation, and publicizing these struggles through student-run channels. Eventually, the faculty reformed its accommodation policies after support from the same union. Through these practices, we demonstrate the ingenuity of (in)formal care infrastructures to appropriate resources across formal and informal domains, reflecting the enduring maker culture central to disability resistance movements [20]. These interventions do more than secure individual remedies: they reconfigure power relations by forcing institutional actors to negotiate on terrain partially defined by disabled students' own infrastructural choices, thereby enacting resistance as an ongoing, infrastructural practice rather than a singular event. This has

important implications for the design of infrastructure for disability justice, positioning frictions as not always markers of precarity to be addressed but also leverage through which disabled communities reconfigure power relations.

6.3 Mobilization Through Care & Mutual Aid Networks

Care is not static nor an end state but an ongoing relational practice. HCI scholars describe infrastructure as continuously evolving [4] and remade through everyday action [49]; care operates the same way because it is co-constitutive of infrastructure and inseparable from resistance. Through mutual aid networks, students practice care in ways that cultivate relationships, redistribute support, and lay the groundwork for mobilization — conditions that make counteractive frictions discussed in Section 6.2 possible. Prior HCI scholarship has largely examined mutual aid in contexts of crisis informatics, focusing on assembled networks that respond to disruptions [16, 26, 43, 46, 53, 67]. Our study extends this work by situating mutual aid within routine infrastructuring: mutual aid is part of everyday political practice [32, 54], sustaining access work over time.

Further, our analysis advances care not only as sustaining practice, but also as a substrate for mobilization and counteractive frictions. Counteractive frictions challenge institutional barriers while opening new possibilities for care — with care and counteractive frictions co-producing one another as students continually reconfigure the conditions through which disability imaginations can be materialized, enabling new forms of care to emerge. In doing so, our work aligns with critical disability scholarship in HCI that calls for the inclusion of disabled people as contributors to their own care [3, 23, 59, 60, 64, 66].

We further highlight the importance of (in)formal configurations of student groups to resistance. Students wove between formal and informal channels to work with, within, and around institutional constraints — shifting between formal university websites, personal collaborative tools, official email accounts, and semi-private messaging channels. Instead of working in isolation, campus services, unions, and student clubs formed a network of care, where individuals assumed roles as both care recipients and leaders of various student-led accessibility initiatives — laterally redistributing the responsibility of accessibility. The institutional configurations of the student groups did not limit action, but rather expanded the repertoire of resistance through mutual aid. For example, to organize a university-wide disability panel, student clubs, unions, and campus services collaborated to provide resources, such as funding, physical space, and people, creating a space where students could directly address accessibility concerns with institutional decision-makers.

Overall, these strategies reveal that resistance is not bound to a single mode of action or organizational form. Instead, it unfolds across care webs [38] through the dynamic interplay between formal and informal practices to collectively serve the broader student community. Mutual aid [54] empowers students to champion access not only for themselves but also on behalf of others, subverting reliance on formal institutional systems. Through mutual aid, students resist neoliberal ideals of self-sufficiency by privileging collectivism.

These care webs operate as a connective thread within community-built infrastructures, affirming interdependent relationships and emotionally meaningful practices [31, 38] that sustain access work over time.

6.4 Boundary Conditions for Counteractive Frictions

The practice of infrastructuring to produce counteractive frictions in our study is enabled by conditions that are specific, but not unique, to the university context. We articulate these boundary conditions here. First, the university is organized through multiple centres of authority — including staff members, faculties, departments, accommodation offices, and administrators — each of which exercises discretion over how accessibility is interpreted and enacted. This polycentric structure means that access decisions are not fully standardized but instead remain uneven and negotiable. Second, the university is publicly supportive of accessibility despite being procedurally resistant, represented by the inclusion of student-led accessibility initiatives (while carefully screened) on formal websites, even as differing interpretations of fairness and academic rigour produce inconsistent responses to accommodation requests. Finally, the university has established and tolerated community-built mechanisms that allow for mutual aid and thus provide a base for mobilization. These specific conditions often consist of contradictory entanglements that create openings for resistance, as students appropriate and navigate institutional ambiguities to instantiate frictions that disrupt dominant logics and expose infrastructural limitations of access. Students and groups turn to digital technology as a relatively accessible medium that also helps evade institutional surveillance through private and semi-private social media and messenger accounts.

We argue that contexts with similar characteristics — bureaucratic with multiple centres of power, rhetorically inclusive that allow for community-based care practices to thrive, and with partial surveillance of digital tools — are likely to support counteractive frictions. For instance, workplaces with strong affinity groups (such as for women engineers or LGBTQ+ people) [13] may have the combination of distributed authority and permeability that enable marginalized groups to mobilize and instantiate counteractive frictions.

In Wilcox et al.'s [62] work on trans wellness and care, community-driven infrastructures sometimes supplant institutional systems altogether, minimizing reliance on hostile institutions. However, in Semaan's account of infrastructuring [49] under conditions of military conflict and state occupation, participants operated within contexts where violence did not present desirable nor safe openings for frictional resistance. The context we studied occupies a unique position along this spectrum — disabled students cannot abandon university infrastructures that govern their academic degrees (and their future job prospects) nor are they fully constrained.

Our articulation of boundary conditions thus extends HCI and CSCW work on infrastructuring, care, and resistance by specifying the kinds of configurations in which counteractive frictions are feasible and perhaps necessary. Future research should examine how counteractive frictions can be produced in other sites and further refine the conditions that enable or constrain these infrastructural practices of resistance.

7 Conclusion

This study has examined how disabled students mobilize to negotiate and transform access within the university. By tracing the collective practices of student groups across organizational, digital, and social contexts, we show that infrastructuring is not an ad-hoc or occasional act, but an ongoing act of resistance through which disabled students sustain access, care, and mutual support in the face of institutional exclusions.

We argue that community infrastructures, composed of human actors, technologies, and practices, do not simply encounter access frictions as disruptions to be managed in daily life. As agents of resistance, they also deliberately generate 'counteractive frictions' that push back against exclusionary infrastructure. In doing so, they subversively create disruptions that compel universities to address and repair them.

Our contribution to HCI is to call on scholars and designers to rethink infrastructuring. We call on scholars and designers not to see infrastructuring as merely adapting or maintaining systems to make them "frictionless" — a stance that consequently masks the politics of access — but as a practice that also invites disruption. Community infrastructures adapt when necessary, but they also strategically confront, unsettle, and provoke. These acts of disruption are not incidental; they are generative provocations that open space for shaping disability futures.

Acknowledgments

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A Interview Protocol

We developed a semi-structured interview protocol organized into five thematic sections that guided discussions on participants' experiences with accessibility, advocacy, care practices, and relevant technological practices at the university. The protocol included an opening script to establish rapport, ensure informed consent, and situate participants within the broader goals of the study. Personal questions were only asked if participants explicitly consented and any off-record remarks were respected and excluded from analysis.

A.0.1 Introduction.
(1) What is your role at the University and what accessibility or advocacy groups are you involved in?
(2) How did you begin your accessibility advocacy work?
(3) What accessibility systems, services, or structures exist at the university that you are aware of?
(4) How would you describe the broader accessibility advocacy landscape at UofT?

A.0.2 Practical Experiences.
(1) Can you describe memorable positive or negative experiences with accessibility on campus?
(2) How has accessibility affected your experiences in courses, buildings, residence, or online learning?
(3) How accessible have teaching practices and course designs been (e.g., UDL, TA support)?

A.0.3 Ideology & Beliefs.
(1) Where should the line be drawn between fairness and accessibility?
(2) How do you view the university's role in providing accessibility services?
(3) What systemic changes would you like to see?

A.0.4 Organizing & Advocacy Work.
(1) What advocacy strategies have been most effective?
(2) What technologies do you use to organize and promote accessibility?
(3) How has the university responded to your efforts?
(4) What challenges does your group face in using technology or accessing resources?
(5) Who do you collaborate with inside the university, and how does this shape your work?

A.0.5 Personal Experiences.
(1) Have you registered for accessibility services? Why or why not?
(2) How supported do you feel by the university and your community?

(3) When formal services fail, what informal strategies or care networks do you rely on?

B   Social Media Analysis Template

Platform (*e.g., Instagram*)	
URL (if applicable)	
Account Name (if not the student's personal account)	
Associated Research Participant (*e.g., P1*)	

B.0.1   Content Analysis.

(1) Who is posting? (e.g., role, relationship to student group)
(2) What types of posts are shared? (e.g., informational, promotional, interactive; list in order of frequency)
(3) What is the posting frequency and diversity of content? (e.g., events, resources, stories)
(4) What external accounts or resources are promoted?
(5) What content appears in the link tree, if applicable?
(6) What information is shared through highlight reels, if applicable?
(7) What is the date of the oldest post?
(8) How has the content evolved over time?

B.0.2   Engagement.

(1) Who appears to be the primary audience? (e.g., students, members, staff)
(2) Who engages with posts (likes/comments)? Are there recurring organizations or student groups?
(3) Which university-affiliated or student-led organizations does the account follow?
(4) Which organizations follow this account?
(5) What types of discussions, inquiries, or responses appear in the comments?

B.0.3   Community.

(1) Are promoted initiatives advertised elsewhere (e.g., university websites, email lists)
(2) Do they promote ways to get involved? What types of roles or participation opportunities are highlighted?

B.0.4   Other Observations.

(1) How does the account use accessibility features? (e.g., alt-text, captions, audio descriptions)
(2) Any additional notable observations?
(3) How do these observations inform or contextualize the participant interview?