Tooling Justice: Articulating Equity Work Through Design Toolkits

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Abstract

Design equity toolkits are increasingly being invoked to address the ethical and political consequences of technology design, yet they are criticized for being either too generic or too narrow to address the complex realities of equity in design. To examine the intended purpose of these toolkits from creators' perspectives and explore how designers envision using them in practice, we conducted a two-phase study: interviews with toolkit creators and a walkthrough demonstration workshop with early-career UX designers. Our findings highlight divergent values around toolkit functionality: while creators emphasize flexibility and reflection, early-career designers express a need for actionable pathways to help mediate design equity work within corporate hierarchies. We show how toolkits act as supports for articulation work in design equity, their role as boundary objects for values translation, and conclude by framing how design equity toolkits can be re-conceptualized as legitimacy-building artefacts with capacites to help early-designers advocate for more equitable futures.

CCS Concepts

• **Human-centered computing** → **Empirical studies in HCI**; **Interaction design process and methods**; *Participatory design.*

Keywords

Design, Equity, Justice, Boundary Objects, Toolkits, Inclusive Design, Participatory Design, Value Sensitive Design, Articulation Work

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1 Introduction

As technology continues to shape every aspect of contemporary life, addressing equity in design has become increasingly critical. With growing demands to integrate equity and justice into design practices [10, 20, 26, 39], design equity toolkits have emerged as resources aimed at guiding equitable design processes. Design equity toolkits are *intentionally organized sets of "tools or methods to approach [issues of systemic oppression in design], as well as an explicit suggestion of how to use those tools or methods"* [68]. While these toolkits address a well-documented need, they often face criticism for being either too generalized to address the nuances of equity or too narrowly focused to account for the broader complexities involved [55, 62, 68, 87, 91].

Most existing literature on toolkits in HCI has focused on discussing new toolkits created in the academic space or critiquing the limitations of toolkits [68, 91], the need for experts to contextualize their contents for them to be effective [60], or the work necessary to expand upon toolkits to make them relevant in a variety of contexts [62]. However, as equity issues in design become increasingly impactful, it is important to acknowledge the needs of designers when working to redistribute power relations in design [90]. UX designers have the difficult task of coordinating between a variety of stakeholders and contexts [34, 38]. Therefore, they must tactfully navigate a variety of challenges to argue for values of equity in their work [89]. Toolkits, as artifacts which convey complex ideas and actions in an easy to parse format, are able to span various contexts due to their framing of expertise for a general audience [61]. They also present a particular ontology of expertise, suggesting a best practice to address a problem (ibid) and lending authority to the toolkit wielder. Therefore, toolkits can translate expertise to align diverse stakeholders towards a common understanding around equity in design [46].

Prior work by Petterson et al. [68] has shown that design equity toolkits are generally directed towards UX designers, leveraging common design logics which work alongside basic UX designer training. The oversimplification of complex ideas — particularly in the realm of equity — leads to toolkits becoming an imperfect implement to address issues of oppression in design. However, they continue to serve as a learning tool for UX designers to perform the work of design equity. Early-career designers face steep learning curves and diminished authority within organizations, which means understanding and navigating equity issues in their work

may be particularly challenging. Therefore, in this study we ask: *how do toolkit creators and early-career designers align and differ in their desired attributes for design equity toolkits and their envisioned applications in practice?*

To address this question, we conducted a two-phase study to explore the attributes design equity toolkit creators incorporate into their toolkits, and how these align — or differ — from the preferences and desires of early-career designers (in this study we focus on UX students with experience in industry). Based on interviews with toolkit creators and workshops featuring walkthrough demonstrations [55] with early-career designers, we found that while both groups desired similar attributes for equity toolkits, they differed in how they prioritized and understood those attributes. The divergence in priorities highlighted parallel layers of equity work in design: to advance issues of equity in design, designers must work to shift *product/process* equity, which identifies whether the product and how it is arrived at are equitable, and *workplace/organizational* equity, which determines who is empowered to do equity work and if they are appropriately resourced to do so. Both groups perceived toolkits as a valuable resource to support design equity work within the challenges of the UX industry but envisioned different strategies for toolkit usage at the *workplace/organizational* equity level.

Our findings present a novel perspective on toolkits as resources for facilitating and making visible the work involved in advancing design equity. Based on these findings, we assert that toolkits can serve as a kind of articulation work — the often invisible labour of aligning diverse expertise and coordinating tasks across stakeholders in a given project or work environment [82]. Prior work [60] has identified that articulation work is necessary to use toolkits. In contrast, we argue that toolkits can also support and facilitate the articulation work of design equity. Articulation work is still required to contextualize toolkits into the diverse array of possible design contexts. However, by aligning stakeholders around equity values and translating design and equity principles into actionable practices, toolkits help facilitate the conditions for meaningful equity work. Additionally, toolkits offer potential as tools for securing organizational resources and support for equity initiatives.

We conclude by providing recommendations for the future of design equity toolkits. We suggest a reframing of the role of toolkits in design equity work by emphasizing their role in supporting and revealing the critical articulation work necessary in advancing design equity.

2 Background

2.1 Design Equity

2.1.1 How We Understand Design Equity. Equity issues span a broad spectrum, encompassing race, coloniality, gender, sexuality, and economic dimensions, which interact in a matrix of domination [23, 24]. Design justice critiques practices in technology for their tendency to prioritize a cis-hetero-patriarchal vision of the future [26], one that favours profit over sustainability and human well-being [33, 58]. Simultaneously, the potential harms of inequitable technology design have intensified as technology permeates every aspect of life, shaping everything from global economies to individual experiences.

Issues of equity in HCI are receiving increasing attention [20], alongside a rising interest in marginalized approaches to justice in design [12, 67, 84]. Similarly, previous work on design equity toolkits has drawn from justice scholarship [68], reflecting broader trends in HCI and acknowledging roots of equity in justice movements [40]. In line with this, we adopt Petterson et al.'s [68] definition of design equity, grounded in Nancy Fraser's [35] pillars of justice:

> Design equity recognizes the oppression that emerges from social systems, and designs to address oppression by recognizing marginalized communities' perspectives and redistributing the power to design via partnerships, resource sharing, and relinquishing privileged power [68].

In this paper, we focus specifically on *design equity* rather than *design ethics* more broadly. Equity can be understood as a particular orientation within design ethics that requires engaging with questions of power, oppression, and justice that go beyond individual or collective ethical decision-making. While design ethics could focus on moral conduct and avoiding harm within existing systems, design equity explicitly confronts systemic oppression and emphasizes redistributing power to marginalized communities. A designer can follow ethical principles without addressing equity if they do not recognize and challenge the oppressive systems within which their work operates or actively redistribute power in the design process.

As awareness of equity issues in design increases, new approaches to design have been proposed to attempt to shift the discipline toward more equitable practices. Historically, dominant approaches such as human centred design and design thinking originally had the goal of centring human interests in the design process, rather than requiring people to adjust to technologies [4]. 'Design thinking' as a stepwise design method emerged as a way to demonstrate the different thought processes employed by designers within human centred design, but was formalized and simplified to be more marketable [52, 53]. As a single, capital focused approach, design thinking has been critiqued for reinforcing harmful design outcomes and undermining equity by homogenizing whose voices are heard in the design process and positioning the designer as a decisive authority figure [49, 51]. These critiques highlight the need for design equity approaches that explicitly grapple with power and redistribution rather than simply extending existing human-centred design logics. These include, but are not limited to, Indigenous design, [65, 67, 71], post/decolonial design [7, 71], feminist design [8, 32, 47, 77], and queer design [57, 78, 83].

2.1.2 Design Equity in User Experience. User experience designers are often tasked with advocating for users in their work and expanding the user base of the technologies they design [43]. However, industry constraints and the prioritization of profit by the companies that employ them often limit their ability to prioritize equity [89]. Designers are typically not trained to consider the broader impact of their work on non-users or the ecosystemic consequences of the technologies they create [39]. Indeed, the design industry has garnered critique for viewing lower-resource groups as subjects *of* design, rather than as designers and decision-makers themselves [26, 41].

Within dominant design thinking approaches, designers are frequently encouraged to begin by employing *empathy*, which can involve making speculative or harmful assumptions about the experiences and needs of those they are designing for [9], while devaluing the inclusion of those communities' perspectives in the design process. Additionally, design equity efforts that focus primarily on closing digital divides — by increasing access to technology for lower-resource groups — have faced criticism for not supporting sustainable, long-term changes in digital oppression [66] or distributing the power to influence technology's future beyond a privileged few [76]. In response, there have been calls to reframe what constitutes design and whose knowledge is recognized as expertise in design contexts [26, 33].

Despite calls to incorporate non-homogeneous knowledge in design, capital-focused industry contexts remain resistant to expanding design approaches beyond the most popular design thinking methods. Equity-focused design approaches therefore constitute a divergence from the design approaches taught and practised in industry settings, and require a perspective shift for those occupying the position of 'designer' as an authority figure. To communicate these alternative worldviews as actionable guidance, toolkits can serve as a translation support [45]. In the next section, we outline the definition of toolkits adopted in this paper, framing them as epistemological and ontological touch-points that build common language and facilitate the inclusion of diverse expertise in problem solving.

2.2 Toolkit Approaches to Design Equity

Toolkits serve as both collections of resources and as epistemological framings of expertise, as well as ontological orientations for how users relate to the tools enclosed [61]. Mattern [61] describes how toolkits suggest a "best practice" for how to approach a particular need through their aesthetic presentation and organization. For example, the contents of a first aid kit not only suggest the proper protocol for dealing with a wound, including disinfectant, bandages, and pain medication, but also delineate what counts as a medical emergency in this framing. In this case, the contents of a first aid kit suggest that a medical emergency generally consists of physical harm, but not a mental health crisis. Toolkits thus operate as "aesthetic objects that order and arrange things" [61], encoding the worldview of their creators in terms of which needs are recognized and which responses are legitimized as appropriate. However, the impact of toolkit creators' assumptions about what constitutes a "problem" and a "best practice" is often overlooked.

Toolkits have also been discussed as boundary objects [93], i.e., artifacts that are flexible and interpretable by different actors, facilitating collaboration across the boundaries of different workers' domains [80]. Particularly in contexts where diverse expertise is essential to the understanding of a multifaceted issue, translation between different types of expertise is essential. As boundary objects, toolkits play a key role in this process by facilitating the alignment of diverse perspectives and creating opportunities to advocate for more socially just design practices (for e.g., those emerging in the context of responsible AI [93]).

Increasingly, toolkits are being recognized as artifacts that provide a shared ontology for coordinating the knowledge and efforts of workers across different environments and contexts [61, 87, 94]. The combination of immutability and flexibility in toolkits allows them to address political and ethical concerns while navigating tensions between local specificity and broader audiences [87]. This flexibility allows toolkits to 'tone down' or make palatable complex ideas around issues of justice for stakeholders who may be resistant to such considerations by framing them as 'easy' or routine aspects of design work [46]. However, prior work has shown that toolkits require professionals to perform articulation work to contextualize their use. Madaio et al. [60] highlight that the generalizability of toolkits necessitates such articulation work to ensure that they fit specific professional contexts. For example, Wong et al. [91] note that responsible AI toolkits offer little guidance on bridging disciplinary gaps, particularly between technical and non-technical stakeholders, while Sadek et al. [73] emphasize that toolkit users often need experts to contextualize the technical and ethical content to their specific cases, underscoring the role of human mediation in implementing toolkits. Furthermore, many toolkits fail to offer differential tools to diverse groups who occupy significantly different positions [69]. More complex issues like design equity amplify these challenges of translation across social worlds.

In HCI, growing numbers of toolkits have served as a way to address social justice challenges and introduce novel ways of attending to systems of oppression, including toolkits for Afrofuturist design [16, 17], culturally sensitive design [1], rural communities [56], and community empowerment [50, 88]. Work in HCI has critiqued the way toolkits offer generalized guidance and do not provide sufficient guidance for more complex social issues that demand equity-based approaches [68, 87]. Furthermore, a focus on toolkits alone as an orientation to address social justice challenges can fall into traps of technological solutionism: that ethical outcomes can be achieved merely by choosing and following the guidance of the "right" toolkit for the problem at hand [63]. HCI research has described how this orientation towards toolkits (alone) as a solution to social justice issues (which is sometimes further promoted in the design and language of the toolkits themselves) ignores the political and organizational work required of the designers who attempt to use these toolkits [91]. Attempts to create tools that can scale and work in many contexts can fall into "abstraction traps," where their advice is divorced from the complexities of local situated contexts [75]. Furthermore, prior work has critiqued the limited follow-up on how toolkits are used in situated design practice: toolkit creators are unaware of how people currently use their kits, and usability evaluations may fail to report on the actual work of using the toolkit for real-world problems [55]. Therefore, in this paper, we aim to demonstrate how the work of using toolkits occurs, and how design equity toolkits, in particular, embody the intentions of their creators and users.

Within this landscape, design equity toolkits pose specific challenges. One of the key demands of design equity is the greater involvement of marginalized community members, particularly non-designers, in the design process [26]. Many design equity toolkits advocate for the inclusion of diverse communities, but Petterson et al. [68] argue that most still focus on "access-based equity," which ensures that marginalized communities can access technology but requires extensive negotiation and alignment of other stakeholders. In contrast, "world-building equity" seeks to empower these

communities to take on decision-making roles in technology development (ibid). Such an approach necessitates broader collaboration to advance design equity, requiring toolkits to effectively translate and facilitate the participation of marginalized groups in the design process (e.g., [42, 65]). Additionally, specific and localized approaches may be needed for design efforts that address particular marginalized communities. Noe et al. [65] discuss this in the context of Indigenous communities, highlighting the vast diversity within these groups and the necessity of tailoring guidelines to their specific needs. Given the intersection of technology with issues such as racism, sexism, colonialism, homophobia, and other forms of systemic oppression, a generalized approach to design equity is often insufficient.

In this context, toolkits have the potential to offer step-by-step processes that provide an industry-relevant approach to equity issues. They function not only as collections of supportive artifacts, but also as scripts that communicate expertise and serve as common resources for accessing alternative theoretical approaches to design. Toolkits can distill and convey expertise in these approaches in a concise, easily incorporated format, which is particularly valuable for new designers who are simultaneously learning their professional roles and grappling with their responsibilities regarding the equity impacts of design as they learn to navigate workplaces as UX professionals. However, within the variable and complex context of many UX projects, toolkits may also risk oversimplifying design equity, and UX professionals may then not be able to shift their work practices and products towards more equitable futures despite engaging with equity work. In the next section, we discuss the challenges of navigating the workplace as UX professionals and how equity issues are neglected, making the "convenience" of surface-level engagement with toolkits tempting [46].

2.3 Navigating Workplaces as UX Professionals

The role of UX professionals in workplace settings is inherently social and political. UX designers must align their work with organizational priorities while advocating for design practices that support both user needs and ethical considerations [36, 72]. Wong [90] defines this as 'values work': "the work practices conducted by UX professionals in the name of values and ethics, towards what they see as good, proper, important, or desirable social worlds." Successful alignment involves balancing the interests of various stakeholders, including colleagues from different departments, organizational leadership, and external collaborators [34, 38]. UX professionals employ a variety of practices to coordinate with others, such as scheduling design reviews, sending design feedback, and organizing ad-hoc meetings to get input on decisions [34].

Translating broad ethical principles into situated design contexts demands additional effort, often performed individually and outside formal job descriptions [2, 86, 89]. Indeed, equity issues such as representation and power distribution are often left to last or entirely out of design processes [39]. UX designers are then left to take personal responsibility, expend emotional energy, and become vulnerable to burnout [70]. Therefore, equity work in UX is rendered invisible and left out of formalized roles without worker supports. This is frequently under-addressed across the broader category of design ethics — for e.g., related analyses on AI toolkits [46] note that many resources reduce equity work to box-ticking and underplay the political labour of coordinating across stakeholders.

In practice, this introduces two intertwined (and often conflated) layers of equity work that designers must navigate: (1) *workplace/organizational equity* (i.e., who is empowered and resourced to pursue equity work), and (2) *product/process equity* (i.e., how methods, partnerships, and outcomes redistribute power and mitigate harm in situated projects). While design equity toolkits often focus on providing guidance about considering how product design decisions are political and values laden, they have been critiqued for not acknowledging these multiple layers of political work that are required of designers to use and implement these toolkits in organizational contexts [60, 91]. Toolkits may offer guidance on how to do a design project more equitably, but they generally do not advise on how to resource that project or motivate the organization as a whole to prioritize equity in a way that makes that work possible.

Many UX professionals, especially those in early-career roles, have limited decision-making power within organizations, particularly at the level of workplace/organizational equity. For novice designers, these constraints are amplified by the challenge of having to actively learn how to navigate value-based conflicts. Research has shown that early-career designers coping with such tensions is both common and formative — novices move from emotional reactions towards perspective-taking and boundary-spanning strategies [85]. This research also shows that values like equity are personally meaningful to early-career designers, reinforcing their motivation to engage in equity-related efforts. Broader workforce data (e.g., Pew Research [18]) corroborate this — younger workers are among the most supportive of DEI initiatives. However, early-career designers are more likely to be responsible for conducting the design process than for making decisions about how the organization or company operates, and those in decision-making roles are less likely to be invested in DEI, as they likely have been privileged by the extant structure of the organization to be in their role [2, 46].

Acknowledging the challenges to design equity toolkits as generalized artifacts intended to be used in highly complex use-cases and organizational contexts [60], alongside a growing interest in how designers can practice values and produce more equitable design outcomes in their work [90], and calls to investigate how toolkit users might interact with design equity toolkits [68], we investigate the perspectives of both toolkit creators and prospective users. Specifically, we investigate how toolkit creators and early career designers align and differ in the attributes they desire in design equity toolkits. This study investigates how design equity toolkits can support UX professionals in addressing workplace challenges, and by comparing perspectives, aim to understand how toolkits can enable UX professionals to integrate equity into their work and navigate with and around the complexities of organizational environments.

3 Methods

To investigate the value of design equity toolkits, we gathered insights from both toolkit creators and early-career designers. Our study involved interviewing six creators of four different toolkits and conducting a workshop with 15 second-year Masters' degree

students who were involved in student equity initiatives from a user experience (UX) design program. While enrolled as students at the time of this study, the majority of the participants had professional experience through either full-time or part-time design work as well as co-ops[1] and practicums[2]. Therefore, our workshop participants were simultaneously emerging professionals in the design space and students engaging with more critical perspectives of design. In our interviews, the toolkit creators expressed that they thought our approach of using design students with equity advocacy experience was an appropriate and exciting way to test their toolkits.

This dual approach of talking with the toolkit creators and running workshops with early-career designers allowed us to explore how the intended attributes of toolkits (as stated by toolkit creators) align with or differ from the perspectives of potential toolkit users. We detail in subsequent sections the inductive-deductive progression of our analysis: we first coded interview data inductively to understand how creators conceptualized their toolkits, and then applied these insights deductively to the workshop data to assess whether creator intentions were affirmed, extended, or challenged by participants. Our research design received approval from the University of Toronto ethics board.

3.1 Interviews with Toolkit Creators

To identify and shortlist relevant toolkits, we applied the inclusion criteria outlined by [68]:

(1) It must be a "toolkit" in that it has multiple tools or methods to approach a given situation, as well as an explicit suggestion of how to use those tools or methods.
(2) It must mention design as a key focus of the toolkit.
(3) It must address one or more of: Equity, Inclusion, Diversity, Ethics, Accessibility.

Using these criteria, we shortlisted 21 potential toolkits to assess. We recruited six toolkit creators representing four different toolkits from this list through direct email, using their publicly available contact information. The toolkit creators were selected based on their interest in receiving design student feedback about their toolkits. All creators consented to be named in the publication, preferring to receive acknowledgement of their work. Toolkit creator names and associated toolkits are listed in Table 1.

The interviews were conducted via Zoom by Researcher 1 (R1) and lasted between one and two hours. These sessions focused on the creators' motivations for making the toolkit, their design methods, their perceptions of how their toolkits might be used, and their expectations for the workshop outcomes. A full list of questions used in the interviews can be found in Appendix A.

The interviews were then recorded and transcribed through Zoom, with transcripts edited for accuracy by R1 and Researcher 4 (R4).

3.1.1 Analysis of Toolkit Creator Interviews. We conducted an inductive thematic analysis of the interviews [21]. Using qualitative coding software, R1 began by familiarizing themselves with the data and conducting open coding across the interview transcripts. These initial codes formed the basis of a coding framework that was iteratively refined as additional interview data were coded and compared. R2 and R3 collaboratively reviewed the coded transcripts and engaged in reflexive discussions with R1 to review and refine the constructed themes, ensuring they captured meaningful patterns in relation to what creators sought to convey about the purpose and value of their toolkits.

We assigned each analytical theme a single-word label to serve as an accessible index for cross-dataset comparison, referring to these as 'attributes' of design equity toolkits. Each attribute encompasses related patterns in the data: for example, under the attribute *plurality*, themes focused on supporting diverse stakeholder and toolkit user backgrounds. Under *flexibility*, associated themes emphasized malleability so that toolkits could be applied across different contexts. Through this process, we identified eight total initial attributes: *flexibility, simplicity, reflection, usability, officiality, independent value, plurality,* and *scalability*. Because some attributes had significant conceptual overlap based on our iterative discussions, we merged *independent value* into *plurality*, and *scalability* into *flexibility*. These attributes are defined in Section 4.1. After the analysis was completed and a draft of the paper was prepared, all toolkit creators were sent a summary document of the research findings and the draft for their review and approval.

3.2 Toolkit Evaluation Using a Walkthrough Demonstration Workshop

According to Ledo et al. [55], demonstration methods are particularly effective for assessing the utility of toolkits. Therefore, we engaged the workshop participants in a walkthrough demonstration. In walkthrough demonstrations, a facilitator guided participants through the toolkits' workflow, explaining its functionality, examples, and limitations. This approach shifts the focus from usability to evaluating the toolkit's broader conceptual value (ibid) and aligns with our research question. Based on our interviews with toolkit creators, we designed a structured walkthrough demonstration process for the workshop participants.

3.2.1 Walkthrough Demonstration Workshop. We conducted a three-hour workshop with 15 early-career UX designers from the Masters' of Information program. Participants were recruited through campus posters and announcements in design courses. Eligibility criteria included enrolment in second-year design courses, involvement in student advocacy, and an existing interest in design equity issues. Workshop participants were given a week to review the toolkits in advance and to come prepared with a real-world student advocacy issue they were passionate about that could be addressed during the workshop using the toolkits.

As noted, when asked to participate in this study, the toolkit creators were informed of our plan to conduct workshops with early-career designers in a design degree program and expressed enthusiasm for this approach. The concept of prompting design students to engage with the toolkits with a real-life advocacy issue was particularly interesting for the toolkit creators. They also expressed that this group aligned with their toolkit target audiences — people who are newer to concepts of equity and/or design who want to be advocates in their work. In the case of emerging design professionals in a UX masters program, our participants fulfilled the target audience by being newer to *both* the design profession

[1] A co-op is a program that combines classroom learning with paid work experience
[2] Practicums combine classroom learning with unpaid work experience

Toolkit Creator	Toolkit Name
Colin Clark & Sepideh Shahi	Community-Led Co-Design [5]
Tom Malarkey & Victor Carey	Liberatory Design [3]
Ann Light	Creatures Framework [44]
Raina Kumra	Ethical OS [54]

Table 1: Toolkits and creator participants (all toolkit creators consented to be named in this publication)

and to equity issues in the context of design. Further, as emerging professionals who were currently defining their design careers and thinking about their role in the industry, we believe they represented an important user base whose perspective needed to be included.

The workshop, held over Zoom using a FigJam [3] whiteboard tool, was audio and video recorded with participants' consent. R1 began with an introduction defining key terms such as equity, outlining the project goals, and establishing community guidelines for respectful listening and consideration of different viewpoints. Participants were divided into breakout rooms led by R2, R3, and R4. Each room had five participants and a dedicated FigJam board. The groups designated roles among themselves: note-taker, timekeeper, and screen-sharer, to facilitate their work.

Each group began by spending 10 minutes deciding on a student advocacy issue to focus on, based on the issues brought by participants. The groups then discussed the issue by identifying what the problem was, who was impacted, what has been done to address the issue thus far, and why it hasn't been solved before. Following this, the groups, guided by their research facilitators (R2, R3, and R4), evaluated the pros and cons of using each toolkit to address their selected issue. They then selected two toolkits for more in-depth testing, spending 40 minutes on each toolkit. The participants applied the toolkits to their student advocacy issue and took notes on their steps and feelings during its use. Notably, the workshop participants were not told any outcomes from the toolkit creator interviews, nor were they given the six attributes that were constructed based on the interviews. During these activities, researcher facilitators provided prompts to keep the focus on the toolkit's attributes and content rather than usability, consistent with the walkthrough demonstration method [55]. Researcher facilitators in each room also took detailed notes of the participants' interactions with the toolkits throughout the workshop.

The chosen issues, toolkits selected by groups for in-depth use, and the research facilitator in each room are explained in Table 2.

3.2.2 Analysis of Walkthrough Demonstration Workshop. Because our broader research question is focused on how toolkit creators' intentions align or diverge from the perceptions of early-career designers, we used the attributes that were derived from our interview insights as sensitizing concepts to guide a deductive analysis of the workshop data, while remaining open to new patterns emerging from participants' perspectives. After the workshop, R1 coded across the transcripts, video recordings, facilitator notes, and FigJam board content from each breakout room, mapping codes to the predefined attributes based on their conceptual alignment with existing themes.

R1, R2, and R3 iteratively refined the coding through collaborative discussion. Importantly, new themes emerged from the workshop data that had not been salient to toolkit creators — most notably, participants immediately focused on toolkit aesthetics and visual design, which creators had not discussed as a priority in interviews. The research team engaged in reflexive discussion to refine attribute definitions in light of these workshop insights, ensuring the attributes captured both creator intentions and participant perspectives. The final analysis examined how the attributes identified by toolkit creators aligned with or diverged from participant impressions. Insights from both phases were then synthesized to provide the basis for the results presented in the following sections.

3.3 Limitations

It should be noted that this study has several limitations. First, all participants were UX design students. While the students came from diverse racial and gender identities as well as professional backgrounds, their shared training as UX designers means that our workshop findings present one type of potential user of design equity toolkits. Future work should gather perspectives from other potential users, particularly designers in a variety of fields and organizational structures (Non-Government Organizations, corporations, government), as well as non-designers.

Furthermore, our workshop participants were only given 40 minutes to test each toolkit. While workshop participants were provided toolkit materials a week in advance with detailed instructions to review, the use of each toolkit was limited to the 40 minutes during the workshop. Richer insights about the toolkits could emerge through longer and deeper engagement in workshop sessions, by allowing iterative refinement of design outputs as is typical in design industry practice. However, this limited timeframe reflects real-world constraints, where time for equity work is often undervalued.

3.3.1 Positionality Statement. This study was conducted by a team of researchers at a large North American post-secondary institution. All researchers received higher education degrees from North American institutions. Perspectives on equity issues that are taught in one regional context can differ from others, and therefore particular equity issues prioritized by both the researchers and the participants were informed by the North American context. Furthermore, all toolkits were in English and readily available to the researchers. Many other languages and regions have robust selections of equity toolkits that were not represented in the search results gathered by the research team.

[3] FigJam is a whiteboarding tool from the Figma design software company.

Room #	Advocacy Issue	Toolkit 1	Toolkit 2	Facilitator
1	Retaining hybrid course structures to support remote students.	Community-Led Co-Design	Ethical OS	R3
2	Increasing Black, Indigenous, and People of Colour (BIPOC) representation in design courses.	Creatures	Liberatory Design	R4
3	Creating spaces for commuter students to rest and study within the Faculty of Information building.	Liberatory Design	Community-Led Co-Design	R2

Table 2: Workshop rooms, advocacy issues, toolkit selection, and research facilitator.

4 Findings

We found that toolkit creators and our workshop participants prioritized similar attributes in design toolkits, but diverged in their expectations for how those attributes should be implemented. As noted in section 3.2.1, toolkit creators noted that their target audiences were diverse, but typically people who were new to either design methods or equity issues in design. This highlights a key challenge in design equity: aligning desired attributes across diverse actors who occupy different positions in design practice and have varying familiarity with equity work. The needs and interests of diverse communities, ecosystems, and worlds need to be considered in order to make them usable by diverse audiences.

Our workshop participants, who were early-career UX designers, enrolled in a professional UX program, fit the target audience well, as they came from diverse professional backgrounds, were relatively new to design as a formal practice, and were in the process of learning about issues of design equity. This positionality shaped how they evaluated the toolkit. However, despite being well within the toolkits' target audience, priorities of workshop participants and toolkit creators diverged.

In general, workshop participants were more interested in how to actually use the toolkit, i.e., having clear guidance on how to apply the toolkit to their anticipated workplace settings. In contrast, toolkit creators focused on providing novel conceptual frameworks to shift the understanding of designers rather than prescribing procedural steps.

Below, we first detail insights from our interviews with toolkit creators, elaborating the attributes they sought to embed in their toolkits. Next, we analyze the workshop outcomes, examining how early-career designers took up, reinterpreted, and at times challenged these attributes in practice, identifying points of alignment and then unpacking the tensions that emerged.

4.1 Toolkit Attributes

Drawing from the interviews with creators across the four equity-oriented toolkits, we synthesized their perspectives into six attributes that creators prioritized: simplicity, usability, flexibility, plurality, reflection, and officiality. Below we define each attribute as articulated by the creators and clarify the intentions they sought to encode in their toolkits.

Simplicity: The toolkit should be easily understood and require minimal additional knowledge beyond what users already possess. Creators emphasized clear, precise language while preserving conceptual integrity. As one creator, Light, explained, the goal was for toolkits to be "not patronizingly simple, but only as difficult as they need to be." Simplicity, here, functioned as an invitation into equity work, lowering the barrier to entry.

Usability: The toolkit should be intuitive and easy to navigate in practice. Creators stressed the importance of developing toolkits that are not just easy to comprehend but also straightforward to use. As another creator, Clark, noted that when creating the toolkit they were always considering, "is there a different way to package it, to make it more accessible for a practitioner in the field?" Usability, for creators, concerned both its organization (how the toolkit is structured and presented) and the workflow (how it can be incorporated into ongoing projects).

Flexibility: The toolkit should be adaptable across different contexts of design work. Even when a toolkit has a focal domain — for example, Liberatory Design's emphasis on racial diversity in education, the Community-Led Co-Design toolkit's focus on designing with disabled users, or the Creatures toolkit's support for environmental projects — creators intentionally aimed to make the toolkits broad and versatile so that teams could reinterpret or extend them. As Clark observed, "If it's open enough, if it's flexible enough, if it's leaving room for interpretation and creating other variations," then it can travel beyond its original context without restricting users.

Plurality: The toolkit must be relevant and accessible to diverse audiences and forms of expertise. Light cautioned that a toolkit cannot be "one size fits all because it's about meaning-making and effective change, and that comes from a different place in different people, and they're going to respond to different aspects of it." Shahi similarly described the intended function as "a container in which you can make some sense together no matter where you're starting from." Plurality here concerns both who can use the toolkit (e.g., designers, community organizers, etc.) and what counts as knowledge within its practices. This inclusivity is essential, as many toolkits use phrases like "everyone is a designer," highlighting the importance of resonating with a wide range of users.

Reflection: The toolkit should prompt critical reflection on design decisions and their equity implications. Creators emphasized a shift in perspective over just procedures. Light described the desired arc as a "process [that] starts before you encounter something and it ends well after a change in the belief patterns or actions." Creators sought long-term shifts in how designers approach their work, regardless of whether the toolkit was used consistently after the initial encounter — as Kumra put it, "this little reminder that's like

oh you know I did learn, I did — we as a team talked about that once and now it's part of the team culture."

Officiality: The toolkit must serve as a credible artifact that legitimizes equity work within organizations by supporting designers in justifying the importance of equity-focused design to their supervisors or stakeholders. Creators intended their toolkits to support designers' efforts to argue for time, resources, and community involvement, providing common language that could circulate between stakeholders and leadership.

4.2 Alignments and Tensions from the Walkthrough Workshop

Workshop participants largely aligned with the six attributes prioritized by creators and reacted positively to the toolkits as resources for equity work. One participant summarized this enthusiasm when they reflected, "one million percent agreed like it would be great to have this in class like I'm bookmarking every single one of these" (room 3).

Across rooms, participants particularly valued *simplicity* and *usability* once they began applying the toolkits to their chosen advocacy issue. Clear steps, concise language, and concrete examples lowered the barrier to trying a toolkit on real world design problems. For example, as a participant described during their second toolkit walkthrough, "[Liberatory Design] is easy to understand the way it was presented, with visuals and very concise and simple language" (room 2). Case-based illustrations in Community-Led Co-Design helped translate abstract concepts into actionable moves and supported participants in envisioning applications of the toolkit in practice.

During our walkthrough demonstration, the usability of the toolkits remained the central focus for workshop participants. Participants emphasized that designers — as mediators for a variety of interests — should be able to pick-up, interpret, and adapt toolkits to fit the needs of product teams and business stakeholders. Workshop participants also appreciated when a toolkit incorporated familiar concepts or aligned with ideas they had previously encountered in their professional practice or design coursework. This familiarity reinforced participant understandings and allowed them to begin quickly working with the toolkits. By providing a common vocabulary to persuade others, the toolkits help justify equity work. For example, participants in Room 3 noted that one benefit of the Liberatory Design toolkit was its use of familiar concepts such as "collaborating with" rather than "collaborating for," which reminded them of principles from inclusive design [22] — a course taught in their professional program. This familiarity enabled participants to not only quickly adopt practices of the toolkit within the limited workshop time, but also engage with equity concepts more effectively.

Participants also aligned with creators on *flexibility* and *plurality* as necessary qualities for artifacts that must travel across organizations, domains, and stakeholder groups. Despite these alignments, the workshops manifested tensions regarding how creators and designers prioritized those attributes and the ongoing tensions around how they could be mobilized within practical constraints.

4.2.1 Tensions between Practical Use and Conceptual Intention. While toolkit creators emphasized the importance of *reflection* in making toolkits truly impactful, many participants wanted clear, stepwise guidance they could apply to problems under real organizational constraints and time pressures, which they felt was relevant to their professional futures as early-career designers. Toolkit creators acknowledged that their understanding of *how* the toolkits were being used was limited, a concern highlighted in prior research [87]. Balancing *simplicity* with deeper reflective engagement prompted a division of priorities: immediate applicability to concrete projects versus the overarching goal of shifting designers' perspectives and fostering long-term critical thinking, which requires engaging with friction in the design process. The abstract and general nature of some toolkits presented challenges for workshop participants. Participants praised toolkits that were "more specific" with respect to steps and cases (e.g., Community-led Co-Design) and described other toolkits as offering "broad tips" rather than scaffolding for process (rooms 1 and 2).

Both the toolkit creators and workshop participants acknowledged that reflective friction is a crucial element of toolkits, as it helps shift perspectives on design equity by creating time to think critically. Malarkey characterized this aim as "helping people to understand the phenomena of oppression," while Light framed it as sparking "a change in the belief patterns or actions or something, and that is something that people are able to help." As such, rather than a step-by-step linear guide to design equity, toolkits were conceptualized by creators as a collection of ontological prompts designed to shape how designers approach their work over time with a more equitable mindset.

While workshop participants acknowledged the importance of reflection when using the toolkits, they did not prioritize it as highly as the creators. This could partly be a consequence of our participants' existing commitment to equity in design and their active involvement in advocacy efforts (shaped by the recruitment criteria of the study), and thus experiencing reflection as familiar rather than novel. However, they appreciated that the toolkits could make the reflection process more explicit and visible — an element often overlooked in standard design processes — helping them create more equitable designs. They did note that it may come into conflict with ease of use. In particular, when examining the Creatures toolkit, they warned that designers newer to equity work might struggle because "it is not easy to implement. I don't think any of these toolkits should necessarily be, like, plug-and-play. I think critical reflection is important with them, but some designers might find it to be a little much" (room 2). Critically, for our participants, the tension wasn't between the simplicity and complexity of concepts within the toolkits; rather, they worried about open-ended reflection and the difficulty of enacting the toolkits in their constrained work settings with overly diffuse instructions.

Notably, even though the workshop participants did not express an explicit shift in their perspectives due to the toolkits, we observed a subtle shift in their approaches during the workshops. For example, in Rooms 1 and 2, participants shifted from simply proposing solutions to focusing on more inclusive design processes, such as including more voices. In both rooms, participants engaged with the first toolkit by selecting elements of the toolkits and outlining a plan to apply them. However, our field notes show that as participants continued to apply the toolkit, they focused more on the sociopolitical implications of their design scenario, which carried

over to the second toolkit. This subtle shift suggests that reflective prompts can influence practice without being experienced as such in the moment.

4.2.2 Plurality Without Power Redistribution. Both toolkit creators and workshop participants emphasized that *flexibility* and *plurality* are essential, yet they are difficult to realize in practice. Carey described toolkits as "a habit of mind and practice that you can ideally co-create together, particularly in dominant culture spaces — so it's an enactment of what we've learned about complexity and equity and how to put it in play to create and innovate." Building on the creators' emphasis on reflection and shifting perspectives through the use of toolkits, participants agreed that the toolkits should represent diverse worldviews and be usable by marginalized non-designer communities, not only professional design teams. However, they noted that the toolkits generally lacked guidance on how to involve diverse community members in ways that changed who held decision-making power. As one participant put it, "there's a difference between listening and acknowledging and actually being true agents of change" (room 3).

Participants framed this friction as centred on the challenges of incorporating diverse perspectives in their workplace, particularly across design teams with varying levels of interest in design equity: "Can you give this to any design team or can you only give this to a certain kind of design team?" (room 3). This paradox was clear to both the creators and workshop participants; pursuing universal applicability can erode practical utility in design projects. As static artifacts, toolkits cannot simultaneously address the full spectrum of user needs, audience expectations, and cultural worldviews without becoming unwieldy and impractical.

Participants also grappled with mixed messages about expertise and the role of non-designers. While the toolkits aimed to highlight the value of non-designers' expertise, participants found this message unclear. The claim that "everyone can be a designer" sat uneasily alongside reminders that professional designers are not necessarily the experts. As one participant observed, "Saying like, designers are not the experts, but then in this case anyone is that designer… so they kind of contradicted what they said" (room 2). For our participants, this ambiguity was not just a semantic one, it complicated their efforts to understand their own roles as designers in relation to community members. This confusion also led participants to question how the toolkits truly valued and integrated different forms of expertise. However, attempts to clarify roles sometimes introduced new issues: the Creatures Framework's role taxonomy (e.g., researcher, policymaker, creative practitioner, funder) risked reading as "atomized positions," especially for novice designers (room 3). Instead, they argued that all roles in the toolkits should be articulated as interconnected. However, this was in tension with the toolkit's intention of surfacing distinct forms of expertise brought to a project.

While the toolkits included advocacy for *plurality* and the inclusion of non-designers, participants questioned for whom plurality was being enacted. They noted that the toolkits often lacked mechanisms for empowering non-designers to hold real influence. Across the toolkits, Community-Led Co-Design stood out for explicitly calling for non-designers' involvement throughout the entire process; as Shahi noted, its intended audience included "people from the community, like leaders in the community who want to engage their members, their neighbours, their different groups." In contrast, other toolkits primarily addressed designers as intermediaries responsible for translating content for non-designers involved in the project. Participants worried that, despite the pluralistic rhetoric of equal access and participation, the decision-making power remained with the designers, leading to the persistence of gatekeeping mechanisms through the toolkit format itself.

This tension illuminates a broader challenge in democratizing design practice — plurality without mechanisms for actually redistributing power, particularly in the industry context [10], risks validating diverse perspectives rhetorically without changing existing structures of authority. For our participants, this was experienced as a layered problem. At the level of product/process, toolkits helped them imagine more inclusive design practices and expanded whose perspectives could be invited in. At the level of workplace and organizational equity, however, they anticipated that future supervisors or managers would still retain substantial decision-making power. The toolkits thus supported plurality in voice but offered limited guidance on how to shift control.

4.2.3 Aesthetics for Designerly Appeal. Although toolkit creators generally did not identify aesthetics as a core attribute for their toolkits, workshop participants began commenting on the aesthetics of the toolkits as soon as they opened them together, commenting on visual layout, tone, imagery, and format. For toolkit creators, the aesthetics of the toolkit — its visual design, medium, language, and tone — were a way to make it appealing to prospective users and signal the toolkit's (and creator's) intent. In contrast, toolkit aesthetics also shaped the workshop participants' engagement with, trust in, and strategizing for use of the toolkits.

The workshop participants were particularly sensitive to the aesthetics (such as visual and rhetorical cues) of the toolkits based on their training in design, and experienced these choices as consequential. Attractive visual elements contributed to positive first impressions and aligned with the expectations of workshop participants based on other design materials they had encountered. Playful tones and illustrations were welcomed. For example, a participant appreciated the "cute" aesthetic in the Liberatory Design illustrations (room 3), while another noted that Ethical OS was "humorous," making the text easier to engage with during earlier critique stages of the walkthrough.

Across rooms, participants preferred visuals that reinforced key concepts and practices (Rooms 2 and 3) rather than decorative graphics. As they moved from initial critique into applying specific tools, they asked for "meaningful images" that create "visual cues." Participants appreciated simple language as opposed to a more academic tone, such as that in the Creatures toolkit, which was perceived as a barrier to engagement (room 2). For instance, a participant (room 2) admitted to being "completely biased" towards toolkits with greater visual content, finding it challenging to engage with the Liberatory Design and Creatures toolkits due to their abundance of text. The medium and overall format also affected participants' willingness to engage with the content and practices. Notably, toolkits in text-heavy PDF format were found to be off-putting. Several participants admitted to not fully reading or

engaging with these documents (Rooms 1, 2, and 3), despite receiving them in advance. For example, one participant remarked that the Ethical OS toolkit had "too many pages" when asked about their initial impressions (room 1). Others (room 2) questioned whether large downloadable PDFs such as the Ethical OS and Liberatory Design toolkits were being maintained, raising concerns about whether they had been updated recently and leading them to question their contemporary relevance (room 2). These aesthetic preferences were not merely personal — for example, a participant (room 3) raised concerns about the Ethical OS toolkit's ability to engage non-designers, suggesting that its important messaging could get lost amid the dense text.

Importantly, some aesthetics actively invoked distrust in participants. Participants observed that many toolkits adopted visual and rhetorical designs and language that aligned with mainstream design tropes and "Silicon Valley" styling. For example, the design frameworks popularized by the Stanford d.school [29] were singled out by participants as being at odds with the attributes of equity-focused toolkits. One participant expressed an initial sense of distrust towards the Ethical OS toolkit, stating, "when I saw the name of this toolkit, I asked why it was an operating system. It reminds me of Apple, so it is very Silicon Valley. Not necessarily a criticism, but it was an interesting choice compared to the other layouts" (room 3). For these participants, corporate aesthetics conveyed the authority and familiarity of pre-established design approaches within big-tech companies, and risked legitimizing these approaches even when at odds with the ethos of equity.

Still, workshop participants acknowledged that such aesthetics might strategically appeal to future supervisors and organizational gatekeepers, given their novice position in institutional hierarchies. They anticipated that such conventional professional toolkits would be more likely to be read and taken seriously by future supervisors or management. In this sense, aesthetics could act as a practical mediator of *usability* and *officiality* — shaping who will read, trust, and act on a toolkit — while also surfacing tensions between designerly appeal and commitments to redistributing power. For our participants, then, aesthetic judgements were related to questions about how toolkits might function as advocacy supports, rather than as neutral matters of style.

4.3 Toolkits as Mediators

Workshop participants consistently framed toolkits as mediating artifacts for workplace advocacy — a priority that creators mentioned less explicitly. While creators imagined their artifacts to be used by designers to think critically about issues of equity in their work, workshop participants highlighted the need to use toolkits as supports they could use to discuss and advocate for issues of equity with their colleagues and superiors, secure time and resources, and legitimize equity practices in organizational settings. This need meant the toolkits had to be clear (*simplicity*), aesthetically credible (*officiality*), and portable between teams (*plurality*) — functioning as artifacts for coordination as much as prompts for deep reflexive work.

Nonetheless, both toolkit creators and workshop participants imagined toolkits as resources for bringing together various stakeholders on a project around shared aims. One participant remarked that Liberatory Design "provides like a beginning step for conversations within different people who have different expertise" (room 3). The intentionally generalizable nature of the toolkits, while critiqued by participants elsewhere, helped provide a common space for a plurality of stakeholders to approach design. As Malarkey noted, "everybody had a different understanding about what [equity by design] meant" and there was "not nearly enough common ground." For participants, this generality affirmed toolkits' role as boundary objects that could mediate alignment work in practice [87].

While participants felt personally ready to take on equity work themselves, they worried that superiors might not share their commitments. They thus turned to toolkits as a means to communicate why those most affected by designs must be involved — ensuring "they are listened to and that they can impart to a design team their lived experiences" — while avoiding harm to collaborators (room 3). Participants thus emphasized using toolkits as supports to shift the perspectives of supervisors and managers. As a participant in room 3 explained, "my view on like design equity is that you have to... make sure that the people in power that you're trying to get to help you enact the change, right?"

Thus, while creators aimed to cultivate long-term shifts in how designers understand systemic oppression, participants were more interested in how toolkits could validate equity work in professional settings. As one participant noted, "If I'm talking to someone in a position of power or in a larger company, I would want them to have an understanding of approaching a problem from various perspectives" (room 2). In short, participants sought direct, legible ways to discuss equity that would be considered "official" within their professional spheres. This perspective aligns with Light's view that the Creatures toolkit helped designers and artists demonstrate method and rigour to potential funding bodies: "we were talking to people who needed to understand that they didn't just go into a room and it's sort of like magic, [there] is a lot of thinking that the artists were doing and then they were calibrating and then changing what they did based on the feedback in a very designerly way."

Taken together, these findings reveal both agreement and productive tension between creators and participants regarding toolkit attributes. Creators prioritized frameworks that invite reflection and reorientation; participants sought practical guidance and clear steps for application, and as early-career designers with limited formal authority, envisioned using toolkits to coordinate with others and to advocate for equity under organizational constraints. Reflecting the emphases of both groups, we argue that design equity toolkits should be understood as mediators that support — and make visible — the articulation work required to advance design equity.

5 Discussion

In this study, we asked: *how do toolkit creators and prospective users align and differ in their desired attributes and envisioned applications of design equity toolkits?* The six identified attributes — *simplicity, usability, flexibility, plurality, reflection*, and *officiality* — reflect both groups' intentions and needs for design equity, but their prioritization of the attributes differed. On one hand, toolkit creators

emphasized the introduction of frameworks that encouraged reflection around design equity. On the other hand, workshop participants sought practical guidance on applying these frameworks in their design work and for toolkits to lend legitimacy to design equity efforts. This duality highlights the multi-layered nature of design equity work: creating more equitable design products requires workplaces that welcome diverse perspectives and allocate resources to equity efforts. While toolkit creators envisioned their toolkits as educational supports prompting reflection on equity issues, workshop participants also saw them as persuasive artifacts for securing organizational buy-in and resources.

Based on these findings, we argue that design equity toolkits are best understood as mediating artifacts that a) support and structure the articulation work of design equity by translating ethical commitments across various roles and contexts, and b) render that work more visible in organizational contexts, supporting efforts to gain legitimacy in persuading stakeholders and negotiating for resources. We subsequently offer considerations for future design equity toolkits to better support the needs and values of early-career designers, offering not only education but also legitimacy to advocate for design equity in the workplace.

5.1 Articulation Work of Design Equity Toolkits

We argue that design equity toolkits support articulation work, as well as require it. Their key contribution lies in their capacity to scaffold the often invisible work — what Strauss [81] calls articulation work — that is necessary to advance design equity. Articulation work involves coordinating distributed tasks, aligning worker efforts, and meshing activities across organizational boundaries, often supported by mechanisms like schedules and boundary objects [48, 74, 79–81]. Aligning understanding with intentions is a critical aspect of UX design work, especially when addressing complex challenges like design equity. Design equity tools offer practical means for designers, particularly early-career designers, to understand and design more equitably.

Our analysis, thus, highlights multiple forms of articulation work that occur at different layers of design practice: equity work at the *product/process* level and at the *workplace/organizational* level, locally situated within workplace politics. We depart from Madaio et al. [60], who show that articulation work is required to translate toolkits' abstract principles into local contexts, including specific products and team dynamics. Instead, participants in our workshop envisioned using the design equity toolkits to align stakeholders within their organizations. Hence, they valued simplicity and usability precisely because coordination across roles, teams, and priorities is already complex, and they may lack professional experience and organizational authority. Designers rarely work in isolation and must negotiate with developers, fellow designers, participants, and business stakeholders [34, 37, 38] within heterogeneous environments, in addition to advocating for the involvement of non-designer community members. As such, design equity traces *both* the process and output of design. Our study therefore emphasizes the potential of toolkits to imbue a culture of design equity into the workplace, providing shared frames and language for coordinating values, constraints, and responsibilities across multiple actors.

Additionally, our analysis contributes a novel perspective on design equity toolkits: they use their aesthetic and rhetorical forms to subversively support design equity, advancing critical work from within. Although creators primarily imagined their kits as pedagogical supports, as noted, participants found that the toolkits were well-equipped to perform this kind of articulation work that focuses on navigating organizational politics. While Wong et al.'s evaluation of AI ethics toolkits critiqued their design for embodying technosolutionist logics of Silicon Valley [91], our analysis suggests a potential complementary interpretation of this design approach that intentionally makes use of dominant logics to perform translation work. Several toolkits in our study intentionally mimicked familiar aesthetics and formats to encourage widespread adoption and recognition from stakeholders, thereby fulfilling the attribute of *officiality*. This could be argued as a form of 'soft resistance' [89]: by appropriating a 'Silicon Valley' aesthetic, the toolkits reflected dominant industry discourse at the level of appearance while also embedding more critical orientations in their guidance to perform translation work.

Altogether, the different application of toolkits to facilitate articulation work reveals a broader tension: workshop participants expressed a desire for more prescriptive and structured guidance, while both creators and participants recognized that equity-related matters were too complex and dynamic to be fully represented as static recommendations. Creators deliberately avoided overly prescriptive instructions to ensure that their concepts can be adapted to a range of design contexts and align with equitable design approaches (e.g. for inclusive design [22], feminist design [8], etc.). However, design projects require context-specific solutions, even as the underlying articulation work — coordination, negotiation, and alignment — follows similar conventions. Instead, as suggested by the priorities of workshop participants, design equity toolkits might be better understood as supports for the articulation work necessary for understanding and reconciling diverse worldviews, rather than as the particularization of a toolkit to a specific product. The specific contours of equity would be unique but toolkits can structure how designers surface and negotiate them.

5.2 Visibility and Legitimacy

Equity work in design requires negotiations across diverse stakeholders to advocate for the resources, time, and legitimacy needed to embed equity as an organizational value, while also bringing heterogeneous knowledge and design approaches into the design process. Design equity toolkits support the articulation work of navigating workplace politics, helping early-career designers advance design equity efforts. Crucially, these efforts often engage or reference marginalized communities, whose needs and voices are themselves frequently overlooked or rendered invisible in both societal structures and design processes [26]. This has been documented in prior work capturing the invisible labour of DEI work, where aligning varying institutional practices with commitments to equity often falls to individuals whose efforts remain unacknowledged [2, 92]. Particularly, as design equity work (like other ethics-related design work) is often considered outside of 'normal design' [59], toolkits can be a vital resource for designers to make visible and

promote equitable practices within the workplace as legitimate work.

As boundary objects, toolkits highlight the often-invisible negotiation and coordination supporting equity work across diverse organizational contexts, roles, and lived realities [87] — an opportunity we identify to bridge between designers and marginalized communities. By emphasizing equity and making it a deliberate part of the design process, toolkits can shift this work from implicit behind-the-scenes activities into explicit structures [80] toward actionable pathways. Toolkit creators prioritized *reflection* and community consultation to make designers aware of the often-hidden aspects of equity work and their role as non-neutral actors in design work with communities [7]. Workshop participants, in turn, valued toolkit capacities to make visible the work of design equity in two ways: first, to incorporate equity practices into dominant design processes, and second, to negotiate for additional resources and time. In both cases, toolkits can formalize and make explicit the work required for design equity.

A central goal of equity work is to privilege the voices of marginalized communities [71], yet participants noted that many toolkits lacked guidance on building and sustaining relationships with marginalized groups, leading them to question whether the primary audience was only designers or also the broader community. However, by legitimizing the involvement of non-designers and marginalized communities as part of "recommended" design practice, toolkits can help influence the power dynamics around decision-making by providing world-building power to marginalized groups — power that industry professionals grasp tightly [49]. Through formalizing the need for including communities that often lack voice, and establishing their involvement as a fundamental part of design practice, a toolkit can support designers when encountering resistance from stakeholders [92]. This shift towards greater visibility and official recognition could make it easier for design practitioners and the communities they work with to perform the interactional processes [82] of advocating for resources for their work (such as time or funding).

Beyond stakeholders within the professional design space, toolkits could further function as alignment mechanisms with diverse communities, supporting "many worlds" design approaches that seek to expand the possibilities of future worlds by translating visions from diverse communities into design practice [33]. However, as Petterson et al. [68] and participatory design scholars [6, 11, 13, 15, 42] note, there is a risk of consolidating world-building power within the hands of designers, even when diverse participants are included [7]. Workshop participants echoed this concern, questioning the adequacy of toolkit guidance on working collaboratively with community members in ways that alter who makes decisions. In this vein, while several design equity toolkits claim to translate design methods for marginalized communities to apply to their own contexts, we propose reversing the directionality of that translation and suggest that toolkits, as boundary objects, can also be used to translate expertise from diverse communities and de-homogenize what design approaches are viewed as legitimate. Relocating the seat of designerly authority into community could shift decision-making power — "world-building power" [68] — towards a shared, and indeed differed where appropriate, approach.

While toolkits are not a universal solution to design equity challenges, they face limitations and cannot redistribute structural power to communities marginalized by technologies. However, they offer tactical supports as boundary objects that legitimize equity labour and translate diverse knowledge into design work. In the following section, we explore how future design equity toolkits might be reimagined to better support both the visibility and the redistribution of power in design practice.

5.3 Recommendations for Future Design Equity Toolkits

In this section, we discuss how future toolkits might better respond to the situated needs of practitioners, building upon our analysis of design equity toolkits as both supports for articulation work and as artifacts that surface and legitimize invisible equity labour. We advocate for stronger support of these forms of articulation work, which typically involve navigating power relations within heterogeneous workplace environments. We call for future toolkits to better clarify the roles and contributions of diverse expertise while adapting to the evolving field of design. We also advocate for attending to long-term engagement with power relations to work towards more equitable futures. Here, we outline implications for facilitating articulation work, embracing many worlds, and legitimizing efforts to redistribute power with diverse communities.

Facilitating Articulation Work: By supporting articulation work and other similar interactional processes, toolkits can help designers perform essential value work and advocate for equity effectively [89, 90]. As design scholarship increasingly addresses equity and justice [20], the language of design equity is likely to become more commonplace. Thus, beyond focusing on educating designers about the importance of equity, toolkits should also empower them to navigate the dynamics of their own evolving organizational contexts. Indeed, prior work has recommended creating collections of tools to translate complex concepts in research outputs for industry contexts [1, 19, 25]. Rather than functioning only as knowledge-transfer tools, design equity toolkits operate as tactical legitimacy instruments that enable practitioners to navigate institutional power structures.

To this end, we recommend incorporating tools that are explicitly oriented toward organizational articulation work, i.e., that translate design equity principles into the language and priorities of industry settings. For example, to address insufficient time allocated to equity work, toolkits could provide timeline templates that use familiar workplace terminology such as "sprints" to make visible the time required for meaningful community engagement and facilitate its integration into project plans. To make invisible equity work more visible and accountable, toolkits might include resources like KPI-reframing worksheets that help designers document equity considerations within existing performance metrics — for instance, reframing a user acquisition KPI to include user exclusion rates, which often require sustained effort but go undocumented. Such tools would be particularly valuable for early-career designers, who are often motivated to address equity issues but lack organizational authority, by helping them formally incorporate equity into design workflows and frame it in terms of organizational priorities rather than as optional "extra" work.

Embracing many worlds: We emphasize *flexibility* and *plurality* as practical ways of translating diverse worldviews into situated design practice. In order for toolkits to be flexible enough to be applicable beyond specific workplaces and bring light to a plurality of worldviews, specific and localized approaches will be needed to address differences within and across marginalized communities and subgroups, often necessitating customization of toolkits [65]. Other research has similarly critiqued universal toolkits for homogenizing the needs of marginalized groups [62, 65, 69]. This highlights a double bind: while formats and the aesthetic forms of the toolkits resemble established design approaches — appearing 'legitimate' to stakeholders — they may also inadvertently reproduce the harms of dominant paradigms, collapsing *plurality*. On the other hand, aesthetic alignment with extant design practices can also enhance their *officiality*, making the embedded ideas recognizable and credible to other designers, thereby potentially supporting *plurality* or the integration of alternative design approaches into conversation with existing methods.

This orientation aligns with Ellcessor's [31] vision of toolkits as collections of tools that serve a purpose; but rather than being confined by rigid frameworks, they retain flexibility for a range of uses. Designing for such *flexibility* remains crucial for the enactment of equity at both the product/process and workplace/organizational levels. This is because designers address varying scales of both specific and broader community needs in their advocacy for the resources necessary to enact design equity work. With greater visibility, communities can assume decision-making capacities within technology development contexts alongside design and business teams. This aligns with social justice scholarship in HCI that advocates for the redistribution of power relations beyond designers and researchers [7, 8, 32, 47, 57, 65, 67, 71, 77, 78, 83].

As pedagogical tools, toolkits must also be able to take multiple complex ideas across *plural* worldviews and contextualize them into actionable steps. Previous research [57, 62, 68, 91] has called for embracing 'messiness' in HCI and design research, standing in contrast to homogeneous formal design methods; especially in addressing equity issues. While toolkit creators highlighted the versatility of equity design toolkits, workshop participants expressed concerns that the toolkits were not always suitable for their specific problems or contexts, emphasizing the lack of stepwise guidance for navigating equity issues in the workplace. As discussed earlier, the desire for more specific guidance around equity work comes into conflict with calls for messiness. Furthermore, toolkits can leverage dominant design practices and open designers to non-homogeneous knowledge systems by virtue of their *simplicity* of implementation [46].

Therefore, we call for the design of future toolkits to incorporate guidance that clarifies which principles or tools are meant to travel across settings, and which should be rewritten alongside communities to adapt to their local contexts, thereby imbuing community knowledge into dominant design processes. Michelson et al. [64] give the example of tarot cards as a tool that spans frameworks while maintaining a static base form, due to their interpretive, reflective, and time-spanning nature. Toolkits, while presenting a static ontology of practice, could take a similar approach, ceding the interpretation of that ontology to contextual relevance across many worlds. This mixed approach to messiness allows for structured supports that align colleagues and supervisors around issues of design equity, but retains the *flexibility* and *plurality* necessary for equity work to be situated and negotiated in practice.

Legitimizing to Empower Diverse Communities: This reconceptualization reasserts the limitations of toolkit-only approaches to design equity [68, 91]. While toolkits can facilitate individual practitioners' legitimacy-building efforts, they cannot by themselves address the structural power imbalances that necessitate such tactical manoeuvring. The persistent centralization of decision-making power among professionally trained designers, despite rhetoric of democratization, indicates that meaningful equity work requires interventions beyond artefact design [14, 27]. Toolkits, as static artifacts meant to traverse diverse contexts, risk "flattening" contextual differences [60], while potentially reinforcing existing hierarchies through their emphasis on professional legitimacy.

Therefore, we recommend shifting focus in toolkit design towards practice-based implications that acknowledge both the tactical value and structural limitations of these artifacts. First, organizations must recognize that toolkit adoption alone does not constitute meaningful equity work — it represents only an initial step in securing permission to engage with more substantive power redistribution efforts. Second, toolkit creators should explicitly include sustainment steps to avoid limiting power shifts to the context of the design project. This may include providing clear guidance on subsequent steps that involve meaningful community participation and power sharing, and scaffolding for the organization to document commitments to concrete follow-on practices to maintain power distribution. In this framing, toolkits can serve as advocacy supports for complementary approaches that address the institutional conditions requiring tactical legitimacy work, and can contribute to structural changes that reduce practitioners' dependence on such mediating artifacts. This reorientation prioritizes world-building-based equity, which invites marginalized populations to shape the future of technology, over access-based equity, which merely ensures inclusion as users of technology [68]. Such an approach requires explicit acknowledgement that meaningful democratization extends beyond toolkit distribution to encompass fundamental redistributions of decision-making authority within design processes [28, 30].

6 Conclusion

In this paper, we delineate how toolkits support and structure the articulation work required to advance design equity. We conducted interviews with six design equity toolkit creators and facilitated a walkthrough demonstration workshop with fifteen early-career designers to explore the 'attributes' creators envision for their toolkits, and how these compare to workshop participant preferences and motivations. While creators emphasize flexibility and reflection, early-career designers require prescriptive guidance. We argue that toolkits support articulation work by holding interpretive flexibility to align stakeholders, while also providing shared structure for coordinating the translation of values into design practice. As boundary objects, toolkits also have the capacity to surface and legitimize invisible labour toward equitable futures. Our work contributes to

the expanding space of toolkits for supporting political and ethical values in HCI. We call for future toolkits to better support the needs and values of designers, beyond educational capacities and towards the legitimacy of advocacy for design equity.

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A Toolkit Creator Interview Questions

(1) **Motive behind toolkit**
  (a) What inspired you to design a toolkit?
    (i) What prior experiences did you have that influenced you?
    (ii) What needs did you observe that you wanted the toolkit to fill?

(b) Did your intentions behind the toolkit change in your making process?

(2) **Toolkit making**
   (a) Who was involved in making the toolkit?
      (i) What was the positionality of the toolkit makers?
   (b) What process did you follow to create the toolkit?
   (c) Were there any practical constraints/limitations you considered when designing the toolkit?

(3) **Toolkit content**
   (a) Where did you gather inspiration for the design of your toolkit?
   (b) Did you talk to anyone in your design process?
   (c) Are there any design traditions that you used to guide your process?
   (d) What unique values do you think your toolkit brings?
   (e) What values do you think your toolkit promotes?

(4) **Toolkit intended use**
   (a) Who do you envision using your toolkit? OR
   (b) You mentioned xyz person as the target audience for your toolkit on your website. Does that feel accurate?
   (c) How did you promote the toolkit? Did you seek any strategic partnerships to promote the tool adoption?
   (d) What background knowledge do you think someone needs to use your toolkit?
   (e) Do you have stories of your toolkit being used that are not documented on your website?
   (f) Has anyone used your toolkit in unexpected ways?
   (g) Have you used the toolkit? What did you use it for?

(5) **Toolkit evaluation**
   (a) How would you measure success in how your toolkit is used?
   (b) How did you evaluate your toolkit?
   (c) Are there any dangers of misuse

(6) **Future plans**
   (a) Are you planning to work further on the toolkit?
   (b) Based on feedback you've already received, are you planning on making any changes to your toolkits?
   (c) If you do not plan to continue working on the toolkit, would you recommend anyone to do so?

(7) **Closing**
   (a) Do you have any advice for how we should go about teaching your toolkit?
   (b) Are there any questions you wish we had asked?