



Latine Health and Development in the Digital Age

Assets-Based Inclusive Design as a Social Movement for Equitable Distributions of Power

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As Latina sociotechnical researchers, we live in two separate societies floating among multiple cultural domains—academia and working-class, English-speaking and Spanish-speaking, credit-card-only and cash-only businesses, technology-mediated and in-person work environments, among others. Daily transitions to and from multiple domains have made us aware of the inequitable distribution of *assets* and *power* in design and technology spaces. In response to these inequities, this article presents an elaboration of an *assets-based inclusive design* (ABID) framework (Figure 1), first proposed in our earlier work [1]. We demonstrate its use in the design of digital health tools for Latine [2] populations. The framework focuses on the ethical identification of assets across multiple ecosystems, alongside growing awareness of inequitable distributions of power. We drew on our expertise working with Latine populations to answer the question, *How can designers employ an assets-based approach that also raises*

awareness of societal inequities and promotes action through internal change or external allyship? The ABID framework is designed to meaningfully benefit research at the individual and community levels while minimizing technology-based amplifications of existing inequities.

The following is an overview of the ABID framework [1] for Latine youth digital-health approaches:

- *Evaluate the cultural competency* of individuals involved at all levels of influence of the ecological framework: Latine youth audience and users, families, community researchers, designers, and, ultimately, power-structure executives.
- *Identify assets of research and industry organizations* (beyond gift cards and minimal financial compensation) with a focus on inequitable distributions of power. Focus on the strengths of youth as pervasive users of technologies. Outline a plan for institutional changes or equity allyship efforts with the Latine community.
- *Engage in participatory appraisal* that enables Latine

Insights

- Inclusive design of digital platforms may increase equitable access to healthcare services and dismantle systemic barriers for Latine communities.
- Ethical identification of assets in the design process can promote action through internal change or external allyship.
- The ABID framework is designed to minimize technology-based amplifications of existing inequities.



Figure 1. The assets-based inclusive design (ABID) framework.

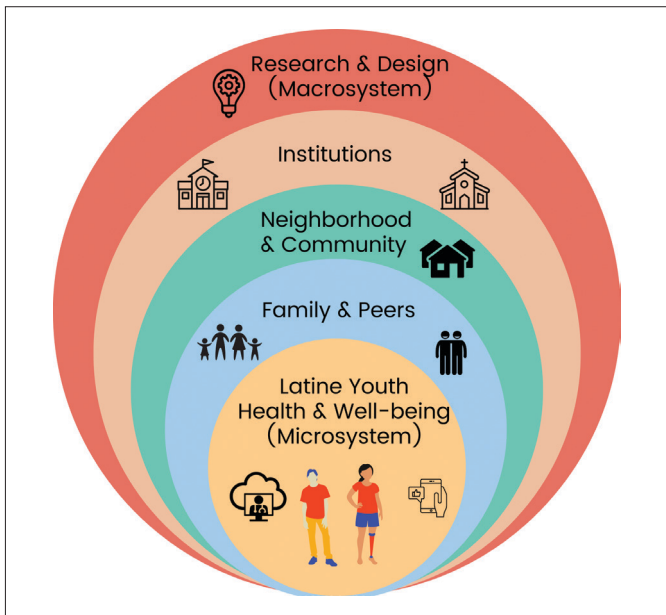


Figure 2. Social determinants of health for Latine youth.

communities to identify their priorities and make decisions about future digital health tools. The organizing agency should provide a safe space to elevate Latine voices, listen, teach, and learn.

- *Map assets jointly with communities*, which may open spaces for further examination of community perceptions of distributions of power.

- *Codesign with an assets-based approach* to create relevant, culturally appropriate digital health tools and human-technology interactions.

- *Involve communities in evaluation and testing*, and redesign collaboratively if the cocreated digital media/tools and practices do not meet the expectations of the community. Then, the assets-based design process can begin again.

PHASE 1: EVALUATING CULTURAL COMPETENCY

In the case of designing digital health tools with and for Latine youth, the framework reminds us of the importance of evaluating the cultural competency of the research and design power structures that underlie the research being conducted. In our work, we look at the role of our university in conducting research with Latine youth. Even though Latines are 40 percent of California's population, we are represented in only 3 to 4 percent of leadership professoriat and industry positions [1]. As women, our representation is even lower—Latinas are the largest group of women in the state of California but we make up less than 1 percent of these positions.

Coming together as colleagues from similar cultural backgrounds but different fields of research allowed us to take small but strategic approaches to understanding the multiple domains that influence our work. We began at the individual level, focusing on children and adolescents. As we moved on to the macro level, we explored distributions of power and the roots of inequities in institutions that develop digital tools (Figure 2).

According to the U.S. Census Bureau, Latine American youth are among the fastest-growing and largest minority ethnic groups [3]. Despite this rapid growth, inequitable access to digital healthcare services and heightened risks for online discrimination is common for Latine youth communities. This inequity was further amplified during Covid-19, when statewide efforts suddenly relied on online registrations and scheduling for Covid-19 testing and vaccinations. Our experiences assisting Spanish-speaking communities navigating online platforms for securing access to testing and vaccines highlighted several challenges with user interface design, language barriers, and economic disconnects (e.g., aligning registrations with phone numbers and email addresses when more than one person uses the same cell phone or email). In response, many people in these communities relied on younger Latine generations for help in navigating digital health tools. It is critical therefore, for design approaches in the health field to recognize and address these complex scenarios where many challenges and strengths operate.

Addressing technology-mediated youth development and health experiences is inherently interdisciplinary work, as exemplified by our experiences. Prior research has found that social determinants of health specific to social, educational, and neighborhood factors emerged as significant predictors of adolescent Latine health and well-being [4]. As a framework for understanding overlapping social environments, Figure 2 reflects the domains surrounding Latine American youth's social determinants



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Communities in which the power to advocate for their health and wellness were taken away due to histories of marginalizations [can benefit from an assets-based design approach]. ABD centers such communities in the design and development of interventions.

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[When I think of assets-based design,] I envision the assets or strengths of a community being embedded through the research and design process.

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of health adapted from Urie Bronfenbrenner's systems of child development and the World Health Organization's framework on the social determinants of health [1]. Such considerations are highly relevant in the digital age,

where digital ecosystems are increasingly influential to development and well-being.

PHASE 2: IDENTIFYING ASSETS

The first two steps in assets-based health technology design for youth are centered on foundational recognition of inequities at a macro level in order to elevate the strengths of individuals at the micro level. The second step includes *identifying industry and academic assets*. In the assets-based community development literature, the focus is on identifying the assets of community members and marginalized communities. In our case, research supports that the strengths of communities promote positive youth development even across multiple systems of oppression [5]. Theories of *navigational and social capital* can support that, with the right tools, Latine youth can leverage digital technologies to support their well-being with autonomy while making connections that dismantle historic disparities within health, education, and society [6]. Even though researchers have often viewed developmental science and technology solutions as interventions through a deficit-based lens, we cannot ignore that youth in the digital age, especially those from historically marginalized communities, display vast strengths with technologies.

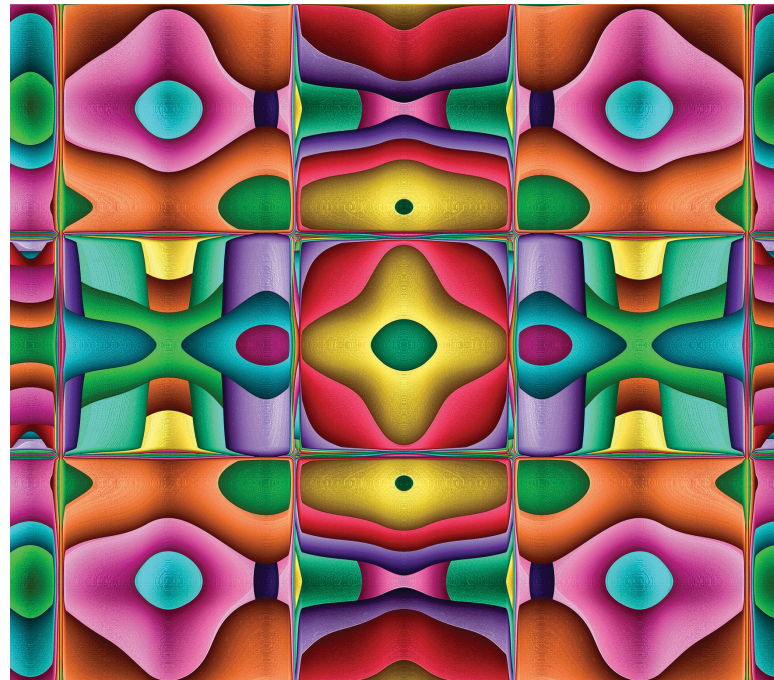
Beyond this, our framework also brings attention to the *assets that the researchers and industry partners bring to the engagement*, and challenges us to move beyond minimal financial compensation or gift cards when considering what assets can be contributed by more powerful actors in community-based work. The central focus of this action is the identification and recognition of inequitable distributions of power. In this respect, the ABID allows for the identification of organizational and community assets to play a central role in the process of research, design, and development of health technologies.

Academic and industry leaders must focus on transparency of their *consumption* and *distribution* of power. As health inequities arise from economic, environmental, and structural disparities, the above-mentioned two steps set the foundation for evaluating the role of power structures in existing health inequities.

PHASE 3: ENGAGING IN PARTICIPATORY APPRAISAL

One angle of addressing individual contributions to macro-level influences in designing health tools for Latine youth is by taking a *youth participatory action research* (YPAR) approach. In early 2021, we piloted a YPAR partnership with ListoAmerica, where we undertook a ground-up approach to

understand the risks and affordances of social technologies (i.e., social media) on mental well-being among Latine adolescents. During the five-month journey of piloting a novel virtual YPAR curriculum, we learned not only about the nuanced experiences on social media and the diverse ways in which it affects Latine adolescents but also the way in which *the process* can vastly influence the exchange of information and power. The adolescent participants became the experts and researchers in the room. We supported them in conducting research in this particular context and autonomy was built into the teen researchers' experience. This helped in gaining nuanced insights that would likely have been missed using traditional research approaches. The voices of youth were at the center of the process of identifying key issues and opportunities of social media to support the well-being of Latine and other minority youth in the U.S. This project also allowed us to further recognize and unpack the strengths of



young people in their ability to use online spaces for *social* and *navigational* capital, which can be one point of evidence for shifting toward an assets-based model.

PHASE 4: MAP ASSETS JOINTLY WITH COMMUNITIES

The process of mapping assets jointly with communities creates space for the transparent discussion of power differentials. Mapping allows us to see where power is concentrated, and where various kinds of assets are distributed. The process of mapping creates an opening for examination of community perceptions of distributions of power, by making a less confrontational entry point into discussions of power. Participants may have the opportunity to be more candid, and the activity may alleviate participants' hesitations about being critical of research and industry partners' positions of power.

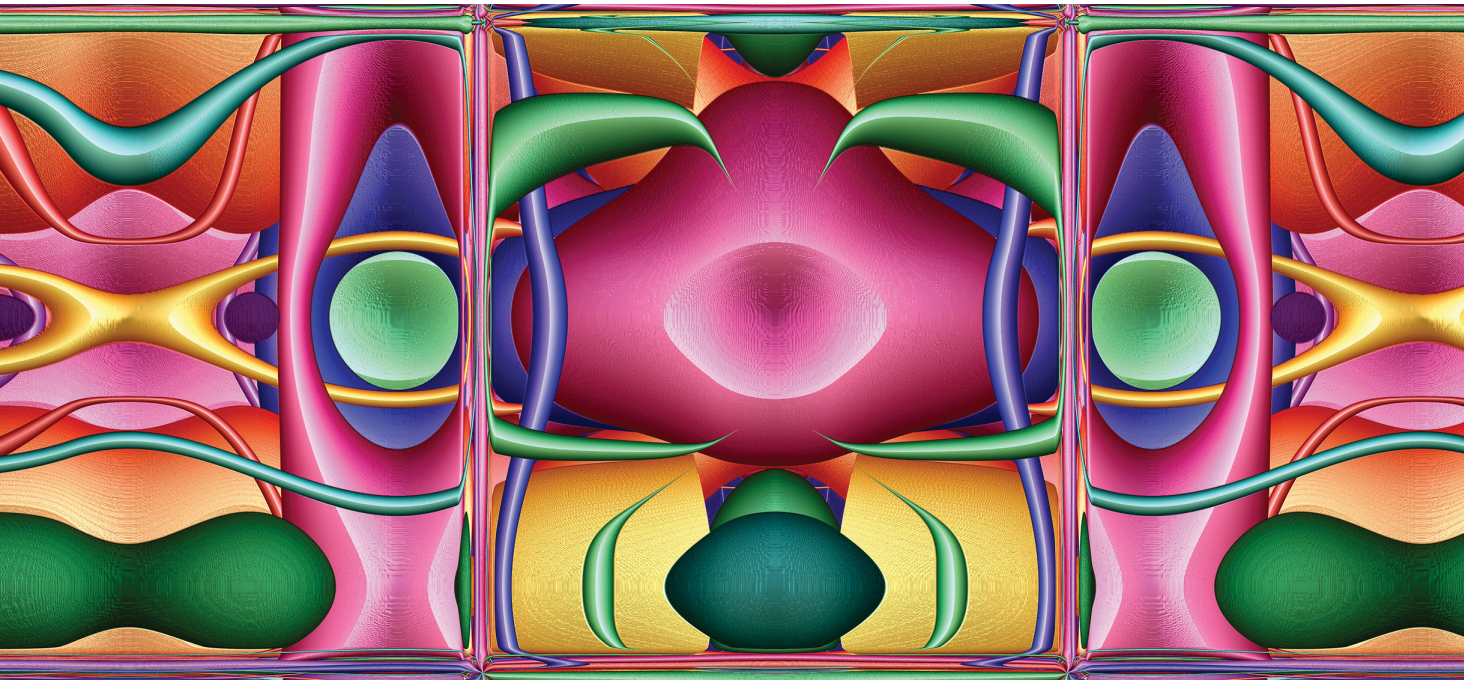
PHASE 5: CODESIGNING WITH AN ASSETS-BASED APPROACH

Our experience in helping Spanish-speaking communities

register for testing and vaccinations using online platforms from Google's Verily, OptumServe, and MyTurn provides an important case study for how an assets-based approach can mitigate the ways in which technology has amplified existing inequities. Our backgrounds in academia met a natural disaster head-on as we tried to facilitate these online spaces. In working at the micro level (i.e., helping individuals register), we were able to identify digital artifacts that created barriers to registrations. For instance, the demographic questions were problematic on all three platforms. Some Spanish-speaking individuals had difficulty navigating demographic questions that required them to identify as Hispanic/Latino and then still have to select a box identifying as White, Black, Asian, or Native American. They felt it was an error on the app, as they had already answered that question. This resulted in users going back to the first question to make sure they checked Latino or non-Latino

other waiting room is for Spanish-speaking and/or Latine/Hispanic registrants. The first question is easily answered, but the second question requires deeper awareness of the federal and state government opinions on the social constructs of race and ethnicity. When online platforms are the only means of registration, however, the burden of this social construct of "educating" often falls on Latine youth. An assets-based design approach recognizes that an asset most individuals and communities possess is strong knowledge and competence in their own identities.

As HCI researchers, we know that adding lengthy written explanations to online spaces does not usually increase access or usability—designing a digital platform must move beyond replicating paper forms in online spaces. Conceptually understanding the goal of the online interaction and facilitating the achievement of that goal through design is central to creating equitable online spaces. When the entire



and then losing their registration when they tried to move forward. Amid such difficulties, we noted that people were heavily relying on the Latine youths to help them navigate the online platforms.

We understand that these platforms were deployed during a natural disaster and did not have the opportunity to undergo thorough research and development. This example, however, serves to highlight a relevant application of assets-based design. We have a federal government structure requiring that the entire country be divided into only two ethnicities: Hispanic/Latino and non-Hispanic/Latino. This power structure directive is often diffused with in-person interactions, as there is usually a person at the doctor's office or hospital there to explain how to answer the question, decline answering the question, and complete the registration process to access healthcare services. When this power structure directive is simply translated verbatim to an online platform, the registration process creates two separate virtual "waiting rooms," one of which is for those who can easily answer "non-Latino," then "White/Black/Asian/Native American, etc."—a fairly light cognitive load. The

country is divided into two groups, one of which is forced to select identity categories that do not fit, the power structure is *creating* the data. Providing individuals the autonomy to self-select the labels that fit their identities allows for *collecting* the data. In this scenario, an assets-based design would provide all race/ethnicity categories in one column and allow registrants to select any/all boxes that are a fit, creating a more equitable experience in navigating digital health spaces. An online platform can collect data on people who identify as Hispanic/Latino plus another race/ethnicity. Data that is



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[A key question is] how to let communities and technology users in general adapt technology to their own purposes and in their own terms, so that they can be more independent from tech designers/vendors that design for specific "tasks," "needs" and "experiences"

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collected can be sorted to comply with federal and state reporting guidelines. In this scenario, the design of the online platform and data-collection tool would serve to minimize inequitable user experiences and increase equitable access to healthcare services while still complying with power-structure directives. When individuals of all backgrounds are allowed to self-identify in an equitable manner via an online platform, the design space becomes an ally in response to discriminatory external power-structure directives.



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When I hear assets-based design, I think of opportunities and unrealised potential. As a researcher in accessibility, I am aware of the importance of the knowledge contained in the community.

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PHASE 6: INVOLVE COMMUNITIES IN EVALUATION/TESTING

Part of acknowledging power inequities throughout the entire design process is involving communities in evaluation and testing, at a level where their feedback goes beyond cosmetic changes to an agenda that has already been set. While real constraints on timelines and project ends may limit researchers' ability to conduct fully participatory evaluations and redesign when outcomes do not meet the expectations of the community, it is important to make efforts to find ways to build a continuous relationship rather than abandoning projects and communities based on the researchers' timeline. Especially in the area of digital health, conditions change frequently, and codesign does not preclude the cocreation of digital media, tools, and practices that are no longer appropriate, as technology development and deployment take time. In these cases, it is important to take stock of new shifts in power relations and new assets that may be possible to utilize in the next cycle of ABID.

EXTENDING DESIGN WORK INTO COMMUNITY ACTIVISM AND ALLYSHIP

The ultimate goal of our framework is to connect design work with community activism, allyship, and the building of social movements through the transparent reflection of inequitable distributions of power throughout the design process.

Publicly recognizing inequitable distributions of power will allow the design community to either effect change in their own organization or become allies to help advocate for more-equitable power structures. As designers, we must move beyond rudimentary inclusion. It is not enough to say, "This community is marginalized; we will include them in our design work." Recognition of inequitable distributions of power and action are necessary to address or ally with social justice efforts that directly benefit communities and can promote longitudinal change for the social good.

CONCLUSION

The culmination of these practices and active evaluation of inequitable distributions of power come with unique cultural and contextual design considerations for digital health tools and online spaces. Educating ourselves and recognizing the historical and systemic barriers that have prevented Latine representation at all levels of ecosystems surrounding

individuals can be the first step in the creation of more-inclusive human-technology interactions and future assets-based design efforts. Learnings from research, public health experiences (such as Covid-19), and current design practices allow us to bring forth solutions for ethical cocreation of health technologies that promote improved technology-mediated health behaviors and societal agency for Latine youths and their communities. The ABID framework promotes a global social movement, as Latine youths are not the only

ones faced with digital health challenges—many youths around the world encounter increasing disparities in the digital age. We expect that the ABID framework may be applied wherever there are vast inequitable distributions of power, and the design community seeks a way to effect internal change or external allyship to reduce inequities. Addressing inequities from within our own institutional systems can promote the inclusion of community voices, raise awareness of inequitable power distribution, and promote progress toward an assets-based approach. An assets-based approach in research and design will drastically improve the way digital tools support health and well-being for all members of society.

ENDNOTES

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