

Renewing Places for People:

Training Human-Centered Designers and Planners to Foster Inclusive Cities

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Abstract— Over four decades ago, Jan Gehl pioneered a theory of public space observation, yet a human-centered approach to urban design and planning is still not the norm today. Given unprecedented challenges in the 21st century due to rapid urbanization and demographic shifts, designers need new strategies for cities that support cultural pluralism, incorporate a multitude of voices and histories, and promote inclusiveness and participation, particularly among youth and aging populations.

Other fields have addressed complex problems with an approach called “design thinking,” which facilitates creative problem solving and collaboration. Inspired by the legacy of Jan Gehl, William Whyte, Clare Marcus-Cooper and others who advanced public life research and practice, we created new public space curricula guided by contemporary principles for human-centered design and innovation. A notable output includes an Observation Toolkit for both practitioners and non-practitioners seeking insights on inclusive public spaces using observation and synthesis activities.

Simple tools can lead to new insights and highlight pathways for training practitioners who are versed in empathy, human-centered design, and cultural competency. Our experience developing and teaching this new curriculum suggests that design thinking practice and pedagogy can be important levers for maintaining the relevance of Gehl’s legacy for future urban challenges. We suggest ways to leverage this toolkit to create a more inclusive process of evaluation, in which practitioners work alongside community members to assess public spaces, thereby enhancing the diversity of voices and making design accessible to all.

Keywords— Urban design; placemaking; design thinking, human-centered design; public space; quality; access; urban spaces; planning education; youth; aging populations

I. A HUMAN-CENTERED APPROACH TO URBAN DESIGN

Over four decades after Jan Gehl and his successors pioneered the field of public life studies, which focuses on observing human behavior in public spaces, there is still room for urban designers to take a more human-centered approach. Beyond simply observing behavior, our rapidly urbanizing world needs methods to design *for* and *with* community members, including youth and aging populations, as we re-imagine our cities and public spaces in the 21st century.

Jan Gehl and Birgitte Svarre define public space as “streets, alleys, buildings, squares, bollards: everything that can be considered part of the built environment” [1]. They go on to assert that “public life should also be understood in the broadest sense as everything that takes place between buildings, to and from school, on balconies, seated, standing, walking, biking, etc. It is everything we can go out and observe happening—far more than just street theatre and cafe life” [2]. Using this definition, this article will discuss how designers have historically ignored a diversity of voices and experiences when planning public spaces. Despite recent advances in the design professions to reverse these trends, the need still remains to strengthen and rebuild the tenuous relationship with communities that were previously marginalized.

Drawing inspiration from the legacy of Gehl and others who contributed to the advancement of public life research and practice, we recognized the need to create new materials for practitioners and non-practitioners that yield insights for public spaces through observation and synthesis. In this article, we describe the following contributions to the field: 1) a new **human-centered curriculum** that invites designers to interact with youth and seniors and learn how to incorporate the needs of diverse stakeholders to support public life and inclusive cities; and 2) an urban **observation toolkit** that introduces novices to different ways of looking at public spaces. Our new curriculum and toolkit were part of two classes at the Stanford Hasso Plattner Institute of Design (d.school). This article details our materials, process, outcomes, and recommendations for adopting these methods as we move toward a more human-centered approach to urban design.

II. FOSTERING INCLUSION IN THE 21ST CENTURY CITY

A. 21st century urbanization challenges: the need to include youth and aging populations

The twenty-first century faces unprecedented opportunities and challenges for the development of communities in our cities. Since 2007, the majority of the world lives in urban areas, and the urban population is expected to increase to 6.1 billion people by 2030. Over 90 percent of this urban growth will take place in emerging cities in Africa and Asia [3].

These trends will disproportionately affect those at the ends of the age spectrum: youth and senior populations. Three billion people in the world are currently under the age of 25, nearly half of whom are between the ages of 12 and 24. By 2030, two in three urban dwellers will be under the age of 18, and the majority will be concentrated in rapidly-urbanizing countries characterized by informal settlements, limited access to services, and tenuous opportunities in the formal economy [4].

At the same time, highly industrialized cities in Europe, North America, and East Asia are dealing with the phenomenon of shrinking cities characterized by out-migration and low birth rates, as well as a growing population of seniors aging in place. One in five people in the United States—about 88 million people—will be 65 and older by 2050 [5]. Many cities have responded by implementing age-friendly city policies to accommodate its aging population. New York City has implemented over 59 initiatives, such as traffic street design projects that increase the length of crosswalk times and median refuges. The city also sponsors programs that offer free transportation for seniors to access services such as grocery shopping, recreational, and cultural activities [6]. Other cities—such as Philadelphia and Atlanta—have begun to acknowledge the needs of an aging population in their cities by offering targeted services or making design decisions in regards to the built environment, but much more work remains to be done in this area.

Given these trends, planners, designers, and engineers must creatively adapt and re-think strategies to accommodate the world's growing elderly and youth populations. First, practitioners will have to create new processes to empathize with and engage these populations, refining the criteria for designs that accommodate a wide range of human needs. Second, those in the profession of training future designers must develop and update curricula so that the next generation of planners, designers, and engineers can better serve the needs of the young and old.

B. A historical legacy of disrupting human communities

“You can draw any kind of pictures you like on a clean slate and indulge your every whim in the wilderness in laying out a New Delhi, Canberra and Brasilia, but when you operate in an overbuilt metropolis you have to hack your way with a meat ax.” — Robert Moses [7]

Planners and designers have historically ignored the human needs of diverse communities—and more specifically, the poor, elderly, young, women, and racial/ethnic minorities—as exemplified in the above quote attributed to New York City civil servant, Robert Moses. When surveying decades of public space studies and research, Clare Cooper-Marcus and Carolyn Francis note that, “Most of the design literature we have reviewed—if it refers to users at all—assumes that they are all able-bodied, relatively young, and male” [8]. Unfortunately, this bias was also reflected in professional practice and spatial manifestations.

In the United States, the National Industrial Recovery Act of 1933 and the Housing Act of 1937 allowed local municipalities to engage in the “eradication of slums,” thereby razing entire existing neighborhoods and destroying tens of thousands of homes without the consent of residents [9]. This legacy is perhaps what urban scholar Alexander Garvin refers to when he writes that “despite many remarkable successes, American city planning has been plagued with continuing mistakes” [10]. This “dismal record” took place in the U.S. throughout the 1950s through the 1970s, featuring urban renewal, the “wholesale slum clearance that displaced more people than it housed; high-rise public housing that ill-served the poor; cultural, sports, and government ‘centers’ that were isolated from the rest of the city; and urban expressways that severed and blighted entire neighborhoods” [11].

This historical legacy and its spatial manifestations of economic and social segregation persists to this day, with the unfortunate result of many communities remaining skeptical of urban planning and design practitioners who have failed to keep their promises or have been hostile to their interests altogether [12].

C. Benefits of inclusive cities and consequences of exclusion

Researchers have noted the benefits of youth participation in planning outcomes [13, 14]. Youth can provide valuable information and perspectives about their daily lived experiences that designers may otherwise neglect, thereby aiding in the creation of knowledge and better design outcomes [15, 16]. In addition, the youth themselves benefit from participation, in terms of citizen development, as they are encouraged to become informed decision-makers, and in terms of social development, as they gain a sense of confidence, self-efficacy, and social awareness [17].

The societal costs of ignoring young people's views on their environment are quite high. The failure to integrate youth perspectives can lead to marginalization, conflict, exclusion, and violence, as recently seen to some degree in protests in Ferguson and Baltimore [18, 19]. As Percy-Smith (2002) claims, “The ineffectiveness of communities in facilitating the engagement of young people in meaningful and self-determined ways leads to a sense of boredom, alienation, apathy and frustration for many. The extent to which young people are provided for within their neighbourhood can be seen as a reflection of the extent to which young people and their place needs are valued in the community” [20].

Offering young people the opportunity to provide input into local planning processes validates their standing in the community as equal citizens and aids the creation of successful public spaces that reflect the unique needs of this sub-group, ultimately contributing to more inclusive cities. These benefits are not only applicable to youth. All communities, including historically marginalized groups such as women, racial and ethnic minorities, and aging populations, would benefit from inclusion and opportunities to share their perspectives. Conversely, it is crucial to incorporate these perspectives to successfully achieve cities with inclusive public spaces.

D. Toward a human-centered and pluralist planning process

Given this historical legacy, scholars and practitioners in the built environment fields have acknowledged the need to create inclusive processes that recognize and incorporate a multitude of voices and histories. In response to decades of marginalizing entire neighborhoods and communities, Marcus and Francis assert, “Finally, we realize that to use human behavior or social activities to inform and shape the designed environment is not the approach of some designers or the approach of most studio teachers. But we feel strongly that this needs to be the approach. An approach based almost exclusively on visual form leads either to the reproduction of previously used ‘solutions’ or to the proliferation of artistic statements that pertain more to current design fashion than to the needs of the public” [21].

Among planners, Paul Davidoff (1965), in his seminal work, was among the first to use the term “advocacy planning” and to acknowledge the practice of “plural planning” in which planners have an ethical obligation to work in a collaborative fashion to gather the voices of community members and to advocate for these diversity of voices on their behalf [22]. Today, this approach and recognition of pluralist voices is codified in the American Institute of Certified Planners Code of Ethics and Professional Conduct, which explicitly states that planners shall “give people the opportunity to have a meaningful impact on the development of plans and programs that may affect them” and, in particular, they should strive to broaden participation “to include those who lack formal organization or influence” [23]. While stating intent in a written manifesto is in itself insufficient recourse to negate previous decades of discrimination, it is certainly a step in a positive direction for the profession to acknowledge the flawed processes of the past fifty years.

Increasingly, planners and designers recognize the need to serve diverse communities, but perhaps more importantly, to do so by breaking down silos across disciplines and creating multi-sector alliances. As Cynthia Smith, the curator of the Smithsonian Cooper-Hewitt exhibit *Design With the Other 99%*, writes:

Professional designers have traditionally focused on the 10% of the world’s population that can afford their goods and services, but that has dramatically changed in this new millennium. This new wave of designers, architects, engineers, NGOs, and philanthropists is working directly with people with limited resources, collaborating across

sectors to find solutions, and utilizing emerging technology that ‘leapfrogs’ poorer communities into the twenty-first century. They are proving that design can play a significant role in solving the world’s most critical problems. [24]

Given the great challenges facing cities in the 21st century, those in the field increasingly recognize that successful design draws from local stores of knowledge and that the profession must evolve toward a practice of “inclusive urbanism” that is adaptive and responsive to local culture and needs [25].

E. Integrating multidisciplinary perspectives through design thinking

“Design thinking,” as it is taught at the Stanford d.school, emphasizes a *human-centered* process for innovation [26]. The approach includes mindsets and methods that empower interdisciplinary teams to understand problems by making use of empathy-cultivating interviews and observations of users in the field, synthesizing insights, facilitating brainstorming and ideation, and testing ideas through prototypes. Professionals, practitioners, teachers, and students across diverse fields are increasingly adopting design thinking as a way to solve problems and scaffold teamwork on projects as diverse as large corporate reorganization, the undergraduate college experience, water transport and storage in developing countries, and re-imagining the school cafeteria [27].

Though its benefits are now being applied in a variety of contexts, including individual schools, hospitals, companies, and NGOs, design thinking has not yet taken hold in the fields of urban design and planning. We posit that urban designers have an ethical obligation to practice empathy, address human needs, and make a concerted effort to include diverse perspectives. If applied to the built environment, design thinking is a tool that can enable urban designers to better understand how community stakeholders perceive, use, and value public space in order to achieve thriving public spaces and inclusive cities. We present two case studies that illustrate new ways to apply design thinking methods to urban design and elicit diverse community participation.

III. CASE STUDY - PARKS, PLAZAS, PUBLIC SPACES: DESIGNING FOR COMMUNITIES AT PLAY

The authors created new curricula and a toolkit for two workshops offered through the Stanford University Hasso Plattner Institute of Design, broadly known as the “d.school.” The d.school offers opportunities for students to learn and apply design thinking to real-world problems. Each class at the d.school is led by an interdisciplinary teaching team and attracts students from across Stanford’s seven schools. Working together in teams, students apply design thinking to real-world projects, often in association with partner organizations and institutions. Focusing on learning processes rather than project outcomes, the ultimate goal of d.school courses is to develop creative confidence and collaboration skills to prepare future innovators to engage in the world.

In 2013, the d.school initiated a program of short courses called “pop-ups” that allow teaching teams to prototype new course topics. Our case studies below describe two such pop-ups, including curriculum and outcomes. In the first case, students conducted observations at Portsmouth Square park in San Francisco’s Chinatown and in the surrounding neighborhood, and used rapid prototyping to test interventions that enhance play. In the second case, students used a newly-crafted toolkit to observe the Market Street Prototyping Festival in San Francisco and serve as a launching point for discussions about public spaces. This paper describes the curricula and toolkit, as well as workshop insights and deliverables.

A. Description of Activities

“Parks, Plazas, Public Spaces: Designing for Communities at Play” took place over four sessions from April-May 2014 and was co-taught by Stanford instructors, a post-doctoral researcher in public health from the University of California at San Diego, and two youth organizers from the Chinatown Community Development Center (CCDC) in San Francisco. CCDC is a non-profit affordable housing developer and advocacy organization that builds community capacity on quality of life issues such as land use, transportation, and public health.

In total, the class directly involved twenty Stanford students from interdisciplinary backgrounds, ranging from product design to education to business; twenty youth volunteers from CCDC; and sixty senior residents, including residents of the CCDC-owned and managed International Hotel, or the I-Hotel. For Stanford students, the d.school course on “Communities at Play” was an opportunity to step outside campus boundaries, engage in a real-world context in San Francisco, and experience how to design *with*, not just *for*, communities.

The learning objectives were:

- Examine how different social groups define “play” and engage their surroundings
- Collect instances of spatial appropriation for play; identify factors (social, demographic, environmental, architectural, and aesthetic) that facilitate these activities
- Engage and collaborate with community stakeholders to propose an opportunity for outdoor or indoor play
- Build and test rapid prototypes that enhance existing spaces, or offer new ways for citizens to play and recreate

B. Methods

For the first workshop, students were introduced to new ways of observing public spaces in a familiar context: the Stanford campus. Activities included improvising interactions in different imagined physical spaces; silent walks focused on a single sense (sight, sound, smell, touch, taste); and observing campus sites while adopting different assigned personae with

discrete needs (e.g. a young child, a married adult couple with a stroller and baby, older adults with limited mobility, etc.) The workshop also delved into users’ distinct needs and experiences in public spaces, taking into account the physical aspects of the site, programs intended to take place there, and the purpose of the space. These skills primed students for more detailed observations in San Francisco.

The remaining class sessions took place in San Francisco’s Chinatown. Recognized as the oldest Chinatown in the United States, it is the densest neighborhood west of Manhattan, with nearly 15,000 people living in 20 square blocks and the lowest per capita of open space in San Francisco [28]. The Chinatown Community Development Center, a local non-profit, aimed to make future improvements to Portsmouth Square Park, one of the few large, available public spaces in the neighborhood. It is informally known as “Chinatown’s living room” [29].

Students first journeyed to San Francisco and walked the neighborhoods, guided by local Chinatown youth who regularly operate a Chinatown Alleyways Tour. This tour revealed community history, geography, demographics, unique features and major landmarks. Students then conducted their own observations in Portsmouth Square, practicing some of the techniques learned on Stanford campus. They were encouraged to adopt various personae and observe the behavior of different demographics, including youth, seniors, tourists, and local residents using the tools from the earlier session. They noted how public spaces were appropriated by diverse users—sometimes in unexpected ways—and some problems with the park’s current design, such as overcrowded and unsanitary public restrooms.

The following Saturday, students again traveled to San Francisco, where they conducted two focus groups at the I-Hotel: the first with area youth and the second with senior residents. It is worth noting the historical and community significance of the original I-Hotel, which once housed 196 elderly Chinese and Filipino men before the building was slated for demolition under the city’s redevelopment plans. Despite 5,000 protesters who showed up *en masse* to form a human barrier between the police and property entrance, residents were forcibly evicted on August 4, 1977 [30]. An entire generation of advocates came of age following this ordeal, and many are now the leaders of place-based advocacy organizations such as CCDC that work to create more inclusive planning processes, after witnessing failed attempts to the contrary. Since that time, a new I-Hotel was reconstructed in 2005 to serve the needs of aging seniors.

The Stanford students led a cognitive mapping activity where they interviewed Chinatown youth about how they arrived on site that day, working with the youth to draw maps showing start/end points and pathways, and illustrating key features of the neighborhood. Stanford students and Chinatown youth then co-facilitated the same cognitive mapping activity with seniors from the San Francisco Bay Area. Since many of the Stanford students do not speak the Mandarin or Cantonese dialects of the Chinese language, partnering with the youth was critical in communicating with the seniors and gathering insights about how they navigated and used public spaces in their neighborhood. These interactions informed an interactive

brainstorming session a few days later at the d.school, where students discussed community needs and the different preferences, capacities, and contributions of Chinatown's youth and seniors.

In the fourth and final session, Stanford students gathered at Portsmouth Square to synthesize what they had learned about Chinatown residents' use of public spaces. Their mission was to create a rapid prototype that enhanced play and joy. Students made their initial prototypes on site, using only a rolling suitcase filled with basic prototyping supplies, including construction paper, string, markers, and tape. They observed how members of the public interacted with the prototype; then, after an hour of experimentation, students refined their initial ideas and created a second rapid prototype to engage the public. Examples of prototypes included ground tiles with gaming functions to make the experience of waiting in line for the bathroom more playful, and inviting residents to create colorful flags to decorate the park, on which they wrote their dreams. Engagement occurred with a range of Chinatown citizens, from young children through senior citizens, and there were many enthusiastic smiles as people were lifted out of the ordinary use of the park and saw it become an interactive space. Following these interventions, students discussed the experience of *in situ* prototyping and shared insights about how their interventions were embraced and used by the community, and how these might shed light on public spaces.

C. Key Lessons

Outcomes from the *Parks, Plazas, Public Spaces* course suggest the following:

Build observation skills. Honing students' senses and prompting them to take into account varied human perspectives enhances their ability to read public spaces. Observation skills can be trained in familiar environs, giving students an opportunity to practice seeing ordinary scenes in new ways, and can then be transferred to a site-specific project, yielding rich observational detail that might otherwise be overlooked.

Involve local users, such as youth and seniors. Both demographics provided valuable insights on Chinatown through conversations and focus groups. The youth gained a sense of agency and pride when leading tours and helping to translate conversations for the Stanford students.

Recognize historical and social context. Learning the history of Chinatown, particularly through the voices of the residents and their advocates, helped to situate the design challenge and highlight local priorities. It also created a sense of empathy with, and commitment to, the residents of Chinatown and their daily lived experiences.

Prototype *in situ*. The park itself proved a useful design laboratory. Using only basic supplies, students could quickly and informally test public space concepts, make additional observations, and gain feedback from users. The nature of the experience forced participants to be creative, flexible and adaptable to new and changing conditions in the park throughout the day. Students gained more creative confidence and greater appreciation for the neighborhood by interacting

with residents, many who were happy to engage with the Stanford students and the prototypes that enlivened the park setting.

IV. CASE STUDY – STREETS, SQUARES, AND ROUNDABOUTS: CREATIVE TOOLS FOR URBAN SPACES

A. Description of Activities

"Streets, Squares & Roundabouts: Creative Tools for Urban Spaces" comprised a daylong workshop at the Yerba Buena Center for the Arts (YBCA), coinciding with San Francisco's first Market Street Prototyping Festival (MPSF), followed by an evening of synthesis and debriefing at the d.school. The focus was on observational tools for understanding how human beings interact with public spaces. In total, 17 participants took part, including fourteen graduate and undergraduates students from various Stanford programs (such as mechanical engineering, business, political science, etc.), as well as five adults from general public.

B. Methods

Students convened in San Francisco during the city-sponsored Prototyping Festival, a design competition that invited teams of artists to create interactive public exhibits along Market Street to be visited by citizens and tourists. The d.school course kicked off with a brief introduction to design thinking and an improv game exploring the impact of physical space and human interaction on users. Improvisational games are often used by the d.school to stoke a more open mindset that leads to creative thinking [31]. Next, the teaching team provided an overview of traditional research methods in the field of urban design and a history of Market Street in San Francisco. The session wrapped up with two talks by researchers from Gehl Studios and MKThink who described their own methods for researching the Prototyping Festival.

At midday, students paired up and received an observation toolkit booklet, which included ten activities derived from urban design research methods, but with an explicit focus on user experience and human-centered design.¹ Student pairs were assigned to one of five segments along Market Street, and they were free to choose any or all tools from the toolkit for their observations. After two hours of observations, students returned to the classroom at the YBCA for another improv warm-up, followed by activities to compile insights gleaned from their observations of the festival.

Referencing printed maps of Market Street's segments, students created outlines and visualizations to parse their street observations and share their reflections on what made for a successful installation. They used techniques such as crafting mind maps, drawing axes and placing data points into four quadrants. After sharing observations, students voted on which of the observational activities they had found "useful", "delightful", or particularly generative of a "breakthrough"

¹ See the Urban Observation Toolkit at www.humancities.org/creativetools

insight. Students responded most positively to activities with a specific observational lens (e.g. focusing on one sensory input such as smell, taste, sound); activities that require noticing discrete behaviors that are often overlooked in everyday life, such as physical postures and the ways individuals engaged in conversation; and activities that highlight social norms surrounding use of public spaces. The group discussed why some tools were more useful or effective than others.

The second session, which took place three days later at the d.school, provided an opportunity for students to revisit concepts of public space, and to revamp and re-imagine the urban Observation Toolkit. Students first shared their hometowns and described their favorite public spaces. Combining these new ideas with their observations in San Francisco, they drew out key features common to “good” public spaces and created rubrics for differentiating types of spaces from one another. Some students focused on typologies of purpose, whereas others highlighted clusters of important public space features.

After debating features of public spaces, the class also engaged in critical discussion of the Prototyping Festival experience and their role as observers. Pairs of students then chose one of the activities in the Observation Toolkit to refashion, in accordance with their newfound definitions of public space. The goal was to make the toolkit more personalized and thereby helpful to students’ future observations. The workshop concluded with students drafting short “manifestos” on public space design, crystallizing what the participants learned through this experience with the intent of applying to future design projects.

C. Key Lessons

Outcomes from the *Streets, Squares, and Roundabouts* course suggest the following:

Use multiple observation methods and follow up with critical reflection. Different modes of observation allowed students to appreciate new ways of looking and create numerous launching points for conversations about public space. Students reported experiencing a shift in how they see and understand human interaction in public space following the first day’s activities. As a consequence of scheduling the second workshop a few days later, students had more time to digest observations in the interim. Reflecting on and revisiting the meaning, typologies, and qualities of public space also sparked rich discourse.

Create design thinking (human-centered) tools that focus and prompt. The Observation Toolkit was a physical manifestation of human-centered observation techniques, reminding users that “Streets, Squares & Roundabouts” go far beyond engineered physical spaces. It focused student observations within a given timeframe and gave urban design novices a convenient channel to think outside their everyday experiences and try on diverse user perspectives. Presenting tools in a booklet with space for drawings and notes made the logistics of observation easier and created a readily-referenced set of prompts while in the field. Structuring the toolkit as a series of “activities” made observation itself an act of play,

retaining student interest and provoking a more playful and open mindset.

Use observation tools as malleable opportunities for learning, not dogma. Allowing students to evaluate and re-imagine aspects of the toolkit served dual purposes: it focuses the conversation around important features of public spaces that we wish to observe and capture, and it can yield personalized or improved tools for observing public spaces in the future. It enhances students’ design education by highlighting process, recognizing that the creation of useful tools is part of the designers’ remit, as much as the creation of a final design.

Think positively, but think critically. The Prototyping Festival was an opportunity to see many people traversing public spaces in San Francisco, with more interactions than typical. It afforded a greater number of observations in a light-hearted and festive atmosphere, and illustrated the utility of observing real-world sites. At the same time, observing the Festival spurred conversations about inclusion, demographics, and municipal vision. There are both objective and normative questions embedded in conversations about public space that are worthwhile to confront.

V. DISCUSSION: IMPLICATIONS OF APPLYING HUMAN-CENTERED DESIGN PRINCIPLES IN URBAN CONTEXTS

The design thinking curricula and observation toolkit developed for these two courses demonstrated the benefits of applying human-centered design principles to urban contexts. The courses successfully transmitted new knowledge, design skills, and points of view to students, who demonstrated critical thinking about the purpose and qualities of public spaces and users. We see potential for expanding these initiatives while exploring additional questions that remain.

In Chinatown, a natural extension of the Case 1 outcomes would determine how insights gained from observations and rapid prototypes could inform advocacy by the local non-profit CCDC as it seeks to improve Portsmouth Square and other neighborhood spaces. We could also study the impact of temporary enhancements to public places and whether any lasting benefits to the population might accrue, ranging from mental and physical health, to sense of inclusion, to the probability of successful longer-term capital improvements.

In Case 2, the Observation Toolkit was an effective means to introduce novices to urban design using a design thinking lens. The most beneficial exercises provoked students to view spaces differently by encouraging them to adopt perspectives of diverse users and to pay attention to explicit behaviors and implicit norms governing public spaces. Student observations were linked with extensive discussions about the purpose of public spaces and goals such as identity and inclusion.

In the interest of promoting more participatory forms of design, we see an opportunity in which students could use the Observation Toolkit to work alongside community stakeholders to collaboratively assess and understand public spaces. At one point, we asked students to suggest ideas for

customizing toolkit activities in accordance with their own evolving design values. How might representatives from different local neighborhoods similarly adapt and localize the Observation Toolkit for their own communities to capture special insights about those places?

In the long-term, we envision that these activities could be implemented with Chinatown youth themselves as the trainees. CCDC youth organizers have expressed interest in adapting the curriculum and leading future design workshops entirely in their native language with the purpose of gathering stakeholder feedback. The simplicity and playfulness of exercises in the Observation Toolkit lower the barrier of entry when inviting citizens from groups such as youth and seniors to take on the role of urban designer.

We also see meaningful opportunities to improve design pedagogy. Given the concentrated nature of these particular design experiences, it would be worthwhile to explore in greater depth the impact of repeated observations over longer time frames and track the development of student understanding, which already showed promising change in only a few days. Longer experimental timeframes could also help identify optimal combinations of observation, discussion, and synthesis activities. In the immediate future, we plan to offer a full quarter-long course in which we will leverage this curricula and toolkit as part of an extended period for students and community stakeholders to engage with these tools.

Finally, a constant question in education concerns the balance of structure and freedom. Making the task of observation a playful experience supports a more creative and open mindset. Identifying the benefits of open-ended “play” where no single answer is “correct,” setting the proper level of instructional scaffolding, and determining the ultimate impact of different combinations of structure and freedom would also inform other design pedagogy efforts. This collaborative approach, co-creation strategies with community stakeholders, and a human-centered framework could prove useful to train designers in other contexts.

VI. CONCLUSION: FUTURE PATHWAYS FOR INTEGRATING HUMAN-CENTERED METHODS INTO URBAN DESIGN

Drawing on the principles of design thinking, this article explores the possibilities and offers concrete examples of integrating human-centered methods into the practice of urban design. We tested this curriculum and associated tools through two Stanford d.school courses that brought students out into the field to directly engage in observations and *in situ* prototyping.

Students came into workshops with little or no urban design experience, but learned new strategies for looking at, understanding, and conversing about public space. The curricula primed them to be more effective observers and designers of urban spaces by encouraging them to focus on human beings as users and incorporate a multitude of diverse voices. By growing their sense of empathy and practicing perspective-taking, this approach promoted a more inclusive vision of public space design.

ACKNOWLEDGMENT

The authors would like to thank Stanford University Program on Urban Studies, Stanford d.school, Chinatown Community Development Center, Yerba Buena Center for the Arts, Gehl Studio, and MKThink for their support.

REFERENCES

- [1] Jan Gehl and Birgitte Svarre, *How to Study Public Life* (Washington, DC: Island Press, 2013), 2.
- [2] *Ibid.*, 2.
- [3] *World Urbanization Prospects: The 2014 Revision, Highlights* (New York: United Nations, Department of Economic and Social Affairs, Population Division, 2014), 1.
- [4] *State of Urban Youth Report 2012-2013: Youth in the Prosperity of Cities* (Nairobi, Kenya: United Nations Human Settlements Program, 2013), xii.
- [5] Barbara Lipman, Jeffrey Lubell, and Emily Salomon, “Housing an Aging Population: Are we prepared?,” *Center for Housing Policy*, April 2012, www.nhc.org/media/files/AgingReport2012.pdf
- [6] Abrahms, Sally, “Towns and cities prepare for aging populations.” *AARP*, March 14, 2011, www.aarp.org/home-garden/housing/info-03-2011/towns-cities-prepare-for-aging-populations.4.html
- [7] Robert Caro, *The Power Broker: Robert Moses at the Fall of New York* (New York: Alfred A. Knopf, 1974), 849.
- [8] Clare Cooper Marcus and Carolyn Francis, eds., *People places: Design guidelines for urban open space*. 2nd edition. (New York: John Wiley & Sons, 1997), 6.
- [9] Alexander Garvin, *The American City: What Works, What Doesn't* (New York: McGraw-Hill, 2004), 291.
- [10] *Ibid.*, 2
- [11] Witold Rybczynski, *Makeshift Metropolis: Ideas About Cities* (New York: Simon and Schuster, 2010), 80.
- [12] Alexander Garvin, *The American City: What Works, What Doesn't* (New York: McGraw-Hill, 2004), 2.
- [13] Barry Checkoway & Katie Richards-Schuster, “Youth participation in community evaluation research” *American Journal of Evaluation* 24, no. 1 (2002): 21-33.
- [14] Kathryn Frank, “The potential of youth participation in planning” *Journal of Planning Literature* 20, no. 4 (2006): 351-371.
- [15] Patralekha Chatterjee, “How a generation of young leaders is emerging from India’s slums,” *Citiscopes*, February 5, 2015, <http://citiscopes.org/story/2015/how-generation-young-leaders-emerging-indias-slums>
- [16] Sam Sturgis, “Kids in India Are Sparking Urban Planning Changes by Mapping Slums,” *Atlantic Citylab*, February 19, 2015, www.citylab.com/tech/2015/02/kids-are-sparking-urban-planning-changes-by-mapping-their-slums/385636
- [17] Barry Checkoway & Katie Richards-Schuster, “Youth participation in community evaluation research” *American Journal of Evaluation* 24, no. 1 (2002): 23.
- [18] Michael Fletcher, “What you really need to know about Baltimore.” *Washington Post*, April 28, 2015, www.washingtonpost.com/blogs/wonkblog/wp/2015/04/28/what-you-really-need-to-know-about-baltimore-from-a-reporter-who-lived-there-for-30-years
- [19] William Powell, “The roots of violence in Ferguson,” *The Atlantic*, August 16, 2014, www.theatlantic.com/national/archive/2014/08/racial-tension-in-ferguson-isnt-over/378625
- [20] Barry Percy-Smith, “Contested Worlds” in *Growing Up in An Urbanising World*, Ed. Louise Chawla (London: Earthscan Publications, 2002), 76.
- [21] Clare Cooper Marcus and Carolyn Francis, eds., *People Places: Design Guidelines for Urban Open Space*. 2nd edition (New York: John Wiley & Sons, 1997), x.

- [22] Paul Davidoff, "Advocacy and pluralism in planning" *Journal of the American Institute of Planners* 31, no. 4 (1965): 331-338.
- [23] Code of Ethics and Professional Conduct, *American Institute of Certified Planners*, Revised October 3, 2009, www.planning.org/ethics/ethicscode.htm
- [24] Cynthia Smith, *Design With the Other 99%: Cities* (Washington, DC: Cooper Hewitt, Smithsonian Design Museum, 2011), 14.
- [25] *Ibid.*, 16-19.
- [26] George Kembel, "Awakening creativity," August 2009. Presentation at the Chautauqua Institution, http://fora.tv/2009/08/14/George_Kembel_Awakening_Creativity.
- [27] Peter Miller, "Is 'Design Thinking' the New Liberal Arts?," *The Chronicle of Higher Education*, March 2015, <http://chronicle.com/article/Is-Design-Thinking-the-New/228779>
- [28] San Francisco Planning Department, "Chinatown Broadway Street Design." February 2013, www.sf-planning.org/ftp/files/plans-and-programs/in-your-neighborhood/chinatown_broadway_110217/ChinatownBroadwayStreetDesignFinalDocument_REV.pdf
- [29] Ryan Kim, "Chinatown Reopens Portsmouth Square," *The San Francisco Chronicle*, January 31, 2001, www.sfgate.com/news/article/Chinatown-Reopens-Portsmouth-Square-Community-2957564.php
- [30] Cicero A. Estrella, "The I-Hotel rises again," *The San Francisco Chronicle*, July 22, 2005, www.sfgate.com/bayarea/article/CITYWIDE-The-I-Hotel-rises-again-Nearly-26-2653520.php
- [31] "Stoke", *Stanford d.school*, July 2, 2010, <https://dschool.stanford.edu/groups/k12/wiki/87d99/Stoke.html>