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By Courtney Cecale

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“I think we should educate more people,” Mirela Ocampo stated when asked about how to promote water conservation in residences across Los Angeles. The 45-year-old MacArthur Park resident wasn’t alone in her sentiments: many of our study participants, as well as city workers and experts in urban planning, conservation, environmental education, and policy informers, saw education to be an important factor in solving the state’s water waste problem. But what are the results of such education efforts? What are the expected outcomes—and what are the actual outcomes? And what does this reveal about the nature of the household?

Data collected by the UCLA Center for the Study of Women’s Gender and Water team answer these questions.

ABOUT THE PROJECT:
GENDER AND EVERYDAY WATER USE IN LOS ANGELES HOUSEHOLDS

This working paper series presents preliminary results from the Gender and Everyday Water Use in Los Angeles Study. Conducted by researchers at the UCLA Center for the Study of Women with the support of a Sustainable LA Grand Challenge Grant, this project investigates the important but understudied role of gender—as it intersects with race and class—in residential water use in Los Angeles. The goal of reducing residential water use requires nuanced understanding the ways that people use, think about, and value water. In the context of international development, policymakers and researchers understand that gender shapes water, especially because women and children are disproportionately responsible for procuring water. In the United States, feminist scholars long have found that divisions of labor and decision-making are often gendered. Putting together these two bodies of knowledge, along with the fact that women have led many American water struggles, from Standing Rock to Flint to Compton, it is surprising that gender remains largely absent from water management and water research in the U.S. This study found that women disproportionately are responsible for the household management of water and for its use in households. It connects everyday life to the large-scale questions of water scarcity and management that face our world in the twenty-first century.

1. Pseudonyms are used throughout to protect the identities of study participants.
questions and reveal how water education ripples through residences in sometimes unexpected ways. By examining participant diaries and interviews and conducting home visits, the data collected by the team of researchers uncover how water education produces a certain type of responsible water citizenship, predicated on values of expertise, self and community policing, and taking individual responsibility for state-wide water crises.

In addition to highlighting education’s effects on water conservation practices and ideologies, our data further brings to light the porous nature of the residence (Hardill 1997; Seekings 2008) as accessed through children who attend school. Tracing the entrance and impacts of education on households articulates residents’ larger connections to the social structures that constitute the state, including economic behemoths such as banks, political nonprofits, and media foundations. All of these entities have been actively involved in the development, production, and implementation of water education curricula, designed to transform household water orientations into those of individually responsible citizens.

**Arrival of Formal Water Education**

As our research team analyzed data from 2017-2019, we encountered dozens of stories from residents who were trying to be more ethical and responsible water conservers. Many families reported already trying their best to use as little water as possible by taking shorter showers, transforming their residential landscaping, buying conserving technologies (such as eco-conscious washing machines), and changing water practices in the kitchen. They pointed to sites where they learned these behaviors, including within their families, through news reporting on California’s dire drought situation, and via the cost of rising utilities bills. Yet one incentive that emerged from our research surprised us: children. Participants with children, grandchildren, and young neighbors told our interviewers about the not-so-subtle forms of policing from young people in their lives who had been exposed to water education in their school curriculum and had come home ready to implement what they had learned.

One of the primary ways that children learn about water is through a program started in schools in the 2000s. In 2003, the passing of bill AB1548, sponsored by the Heal the Bay Foundation, required the launch of the Education and the Environment Initiative (EEI) Curriculum. This required the development and implementation of a set of statewide academic content standards, featuring an entire curriculum on water conservation. The programming was developed in partnership with Heal the Bay, the National Geographic Society, State Education and Environment Roundtable (SEER), the David and Lucile Packard Foundation, various other nonprofits, First Republic Bank, State Farm, Wells Fargo, Whole Food Market, university faculty, and later, agriculturalists and natural resource managers. These partners were selected to reflect the interests of a broad range of stakeholders. The diverse group generated early drafts of materials, conducted professional and peer reviews, and field- and pilot-tested the materials with the help of teachers. After a public comment period and further reviews, the curricular materials passed with unanimous approval.

The programs that exist today grew out of the optional water education programs that some school districts implemented beginning in the 1970s. Basic introductions to ecosystems and water cycles had been addressed in educational programming that emerged even earlier in the 1940s and 1950s, designed not just to transmit knowledge about the world to students, but to transform them into good citizens, by imparting concrete skills such as household management, interpersonal skills, and civics training. Since then, these programs have expanded from brief exposure classes to pedagogically scaffolded materials that span from K-12, designed to transform students into a particular type of water citizen. Students learn the technicalities of the California Delta and aqueduct systems, broad knowledge on the connections between human behavior and ecosystem health, information on how much water it takes to produce consumer goods (such as food), impacts of climate change and drought on water storage in California, and most importantly for our study, morally valanced practices geared towards using water more responsibly in household residences and getting others to do the same.

One participant in our study whose residence we analyzed, Steven Ward, explained that, in his job, he’s noticed a pattern of schools “pushing environmentally friendly things a lot.” A sixty-two-year-old midwestern white man with a wife
and dog, Ward works as a private school teacher in Santa Monica, which he told us helped him be a more aware water user in his own residence: “Since I teach Environmental Science, I’m real conscious.” As part of his classroom curriculum, Ward teaches water education in his classroom to his students, with varying degrees of success which he attributed to students’ lives at home. He explained how, beyond the state-wide curriculum, many educators were taking water education even further by involving outside organizations to motivate students to become responsible water users. He described how groups like TreePeople planned compelling in-class educational activities to reach young people, and public organizations such as the Hyperion Water Treatment Facility were actually paying for the buses to transport children on educational field-trips.

Parents in our study were surprised by the informational depth at which children were being exposed to water issues at such young ages, since they did not experience these educational initiatives themselves. Jaehyun, the father of the inter-generational Park family of four in Koreatown, joked that his son knew more about water usage and conservation than he did, and the son was only in kindergarten! Although it makes for a charming anecdote, it is likely not entirely true that the young household resident knows more than the parents, even if he was officially trained by expert education professionals. Other members of the Park family had informative experiences with water growing up: the household grandmother grew up in Korea during the war and learned to live through intense water shortages, while the mother of the bright and eager young water expert grew up in Los Angeles, through multiple droughts. However, the arrival of water education initiatives through formal education spheres marked a different type of water knowledge than modeled, informal, residential, knowledge dissemination about responsible water practices: education programming was direct, intentional, and expert-driven.

When prompted to imagine Los Angeles’ future in terms of water, Jaehyun Park suggested that early education would prepare their children to start thinking about how to be responsible water users earlier, and to become better solvers of complex problems over time. He explained that he and his wife feel “more optimistic that all this teaching [is happening] in school,” and that the long-term impacts would be valuable to their children.

**Changing Habits**

The primary goal of water education isn’t to just inform students about the inner workings of water across the state; rather, in large part, it is to encourage an ethic of responsible water use and diligent conservation in a region regularly impacted by sparse rain and a history of water dispossession. Parents and grandparents throughout our study reported children in their households coming home from school and encouraging them to change the way the households are run in terms of water. Families reported their children not only instructing their new behaviors but yelling at their family members to “Save water!”

In the Park household, Jaehyun treated the resource problem through the lens of his engineering background, and explained the habits derived from water education as *psychological infrastructure*, or the habits the culture puts in place in the mind of children, with the goal that those children will carry those habits throughout their lifetime. He explained, “If it’s hard, they’re not going to do it unless they’ve been habitualized to do it…A psychological infrastructure’s for people who grow up.”

Like Jaehyun Park, Steven Ward argued that families that have experienced financial hardship were naturally good conservers: once the mental infrastructure for resilience is in place, the practices are second nature. He argued, “We need to conserve resources and water and stuff, but rich kids [for] whose parents it’s a drop in the bucket, but they’re probably not [conserving]. That’s the dichotomy…you need to make the pain point equally painful for everybody.” Ward explains further that children from wealthy families, in particular, come to school without this type of training or awareness. They “didn’t have a need for conservation,” he argues, so they didn’t grow up with it.

Conversely, ideologies about children from low-resource households also impacted perceptions of students’ natural abilities to practice conservation. Steven joked about children knowing that they should turn the lights out when they leave a room and take five minute instead of fifteen minute showers because necessity demanded it from them. Their parents couldn’t afford the discretionary income to be used on something as silly as a forgotten light, or a left-
open, leaky sink tap. Children learned at home, and they brought this knowledge to the classroom with them. Yet he insisted that in-class education was still important: “I think school is doing a good job, or at least in our school they’re doing a good job of getting the message out and about conservation and water, and they talk about the drought…so in that sense like [his son]’s getting his mentality.” It is important to note that this is also the logic of punitive conservation methods enacted through financial means by public goods companies, charging more for utilities to discourage use while also providing information to, theoretically, enable households to make informed decisions.

The Classroom Brought Home

In looking through the proposed school activities from the State of California and resource management organizations, students are expected to get into the habit of watching, analyzing, and assessing whether the people in their lives and homes need to change something about their behaviors. There were image search puzzles encouraging children to be a “water detective” by spying on a neighborhood and circling all of the water infractions the neighbors committed.

In the activity above, water-wasters were the children playing in the open fire hydrant and people washing their cars, while the water-savers were the person putting an empty gallon in the back of their toilets and fixing leaky pipes. The behaviors children were asked to recognize were not solely the public actions of neighbors, but also the incredibly private rituals of hygiene, home maintenance and food preparation.

Through this activity, children were encouraged to become water detectives, young water cops, throughout their own communities.

In addition to such activities, students were asked to sign contracts confirming their pledge to be responsible water citizens by using water wisely, taking shorter showers, using a broom to sweep sidewalks, turning off the hose when possible while washing the car, and using water carefully in the garden. While all of these activities are typically undertaken by adults, the contract implies children apparently spend time doing them. The pledge asks students directly to “remind [their] parents to use water wisely if they are wasting it” and to remember their water-saving habits throughout their lifetime because they know that “water is life and California does not have enough water to waste.”

In some cases, children were asked to go home, take notes on their family behaviors, and bring them back to school for analysis with their classmates and expert teachers. They would then analyze the data collected and send children home with scripts for families and activities to do together to encourage their parents to use water in particular ways. Through this process, children become participants in household management tasks, driven by fear of uncertain water futures, an ethical imperative, and, possibly for certain children, maybe a little fun in flipping household management roles. In the Flores family of MacArthur Park, married mother Valeria, explained that she had actually tried to change her children’s behavior for years, but they never listened to her. She was a busy Latinx mother going back to school and working part time, while their father worked in the landscaping industries in homes across the Los Angeles and Orange County areas, and she reported that no amount of her telling her children changed their behaviors the way exposure to water education at school did. After their classroom experiences, child detectives implemented their new roles with a sometimes bossy seriousness and a forgetful disregard for all the modeled and directed knowledge they earlier gained from their parents (coupled with a sometimes playful disregard for their own rules).²

In addition to monitoring their parents’ water use around the home, fourth grade children are asked

². In the Park family, one parent told our interviewers about her child’s charming inconsistencies: “He would tell us or remind us why you needed to turn it off. Because you’re wasting water. But then you know he’s also a kid so sometimes he’s like, ‘I gotta wash my rocks,’” and has the water running.”
to discuss replacing grass at their family home with more drought tolerant plants. They are invited by their teachers and assignments to interrogate outdoor plant watering techniques and timing and taught about water barrels to keep at home. Worksheets provide them with scripts to expand their newfound expert detection outside of their own residence by encouraging them to talk to their neighbors about wasteful habits. The newly trained little detectives learn not just how to be effective water users themselves, but also how to employ research and investigation and engagement with culture and politics to convince people in their lives to change their behaviors. They thus begin to practice and normalize forms of law (by binding themselves through contracts) that expand the role of children in regulating behavior, as well as our knowledge about the goings on in residential life.

In her 1985 book, *Pricing the Priceless Child*, Vivian Zelizer traces the transformation of children from contributing, economically useful members of the household to their new household roles as economically useless but emotionally priceless. From the 1870s-1930s, this shift occurred across ideologies and markets, enabled by state-imposed rules making education and limiting children’s participation in paid labor. Sociologist and Gender and Women’s Studies scholar Barrie Thorne (2014) interrogates how the sentimentalized image of childhood was subsequently eroded, namely through neoliberal marketing and commodification. Tobias Hecht (1998), an anthropologist working in Northeastern Brazil, builds on these ideas, arguing that the role of “useless children” has been organized through schools, where state ideologies are most effectively circulated. Our study reveals that compulsory water education has actually transformed children’s roles to encompass household management. Children are expected to monitor the behavior of their families, write about and report back on them to experts in schools, and convince their families to change their behaviors to incorporate state-sanctioned practices through pleas of logic and moral reasoning. Here, the movements of children throughout their day are another site in the porous household: a site for state resource management.

Education professional Steven Ward also recognized children’s household management power in the porous household, but to different ends. He explained to interviewers in our study that one of the major goals he had for his students was to build confidence in his students and empower them to action. As participants and consumers in their households, he argued that students were already empowered because they were already implicated in the ethical water choices made by their parents:

“They don’t realize they have power because—they’re making choices and—you’ll have someone that’ll say, “Mom always puts a water bottle in my bag at lunch.” And I’ll say, “well, leave the water bottle in there, and the next day the water bottle will be in there and she won’t add another one, and pretty soon she’ll stop buying them because you’re not drinking out of ‘em, and pretty soon the grocery store has enough moms who’s stopped buying them that they’ve stopped stocking them, stop making them, and then life will get better. And—and every time you make that choice...you’re having an impact.” And, you know, I have to have an argument every year when I say, “Don’t—don’t use it,” and they’ll say, “Well, they’re making them anyway.” I’ll say, “Well, they’re only making ‘em if they’re selling ‘em, so if you stop buying ‘em, then they’ll stop making ‘em.”

Ward’s goal isn’t just to get children and their families to make choices for themselves that inform certain types of responsible water practices, but to use the household as a site of market collapse for targeted goods. He understands the porous residence as a space that impacts industry through the movements
of children and frames it as the duty of children who now know better to choose responsibly. “We teach those things… how to make—that they’re making choices. And so it’s about teaching them that they have power.” Ward reveals textural tensions in the residence as an economic engine and prioritizes the importance of material actions over moral exertions in the transformation of children through education.

Parent Response

Most of the parents in our study reported responding positively to the reminders from their children. In the Camacho household in MacArthur Park, single mother Estefania, who lives with her adult son Justin, referred to the ways she learned from the younger people in her life as “updating her.” The Park parents welcomed the reminders from their child, as did a handful of other parents. Yet not all families were thrilled by their children coming home from school to police them and hold them accountable for the state of California’s water problem—some families pushed back on this model. Koreatown mother Maria Martinez told her interviewer, “If you look back, and this is how the city is not taking care of its duties, however it’s telling us to conserve water…” She observes that responsibilities for resources are placed on households as an individual undertaking and challenges this framing. For her, the city is not doing its part to use water responsibly, so why should she be burdened with changing her behaviors? Her critique challenges not necessarily the logic behind conserving water, but the nexus of water and governance, and the entrance of the state into the residence through the avenue of education programs.

The behavior of our study participants varied when prompted with behavior changing commands from household little ones. Some participants said they would not take shorter showers, nor would they change much about their use of water in the kitchen. Many had strong objections to letting “yellow mellow,” the practice of not flushing the toilet after urination. Some families continued to conduct non-school-sanctioned water practices, such as buying water, due to practical concerns about the maintenance of building infrastructure of their residences. A member of the Silver family laughingly pushed back on the idea of implementing more change, asking: “We need to do more? [laughs] Get everybody else to do more because we’re doing a lot already.” As it currently stands, we have yet to meet a family that has radically changed any part of their lives because of something their children learned in school, though, arguably, an awareness has been cultivated.

Informal Learning

In terms of self-reporting from children and adults, this study showed that people remember learning their conservation behaviors from alternative sources much more often than from in-school education programs. Water education through news and public education campaigns (especially around the drought) was popularly reported as a primary water education source. Popular culture, including art and films like Chinatown (1974), was also an instrumental teaching tool. One participant recalled internet memes that kept water conservation practices on her horizon of awareness. She described one particular image of someone pretending to fill a paper envelope with water to mail it to a desiccating California in order save us from the drought. Other participants experienced environmental and water education programs at their workplace. Children remembered learning about California’s aqueducts on road trips with their parents (though many of the details were lost). And television content was an important source for water education, with mention of the program Caillou and public education commercials. One show stood out with clarity to young members of the Dwyer family of Inglewood. The family used to have a home in Sierra Leone, with a system of rain barrels and water conservation techniques, yet they remembered early water education moments from the popular U.S. television show Sesame Street:

I remember there was a cartoon. James was like two and we would watch it with him and there was a rain drop that would walk around and it would sing a song about “Are you a waste-a-boo? Are you wasting water?” and so, of course, we’re singing it with him—he’s like one of our cousins—and so then it made us more conscious because we would sing it to each other… so we started turning water off, especially with brushing teeth.

The pictured still on page 2 is from the Sesame Street short and shows the angry raindrops following children after their water infractions—it’s no wonder it was both memorable and effective.

Though this paper focuses primarily on official education, the majority of participants actually
report that the lessons about water conservation that most resonated with them came from their parents. Most reported learning directly from their mothers, though, somewhat ironically, parents regularly complained their children did not listen to them. Estefania Camacho remembers this knowledge extending back generations: “Where I come from, seeing my mom and my sister, it’s about saving. And it was seven of us, to be considerate of others, it always stuck on my mind. And my mom, the water that was left she would always recycle it. That’s just what I saw.” Some parents tried to do this deliberately. Kathryn Salazar Sanchez, a thirty-two-year-old stay-at-home mom in MacArthur Park, explains how she teaches her children responsible water practices: “I try to incorporate my children into it. I learned tasks like, even when we’re cleaning the bathroom, all that—there’s certain things Cesar will do and other tasks that I will do. So we do try to share.” Moms in the study also happily reported to us that their small children started to mirror behaviors such as taking shorter showers, turning off the water when brushing teeth and washing hands, and even letting the “yellow mellow”—attributing behavior change to maternal encouragement. Yet even though women are reported to generate, refine, and pass on this knowledge to their children from generation to generation, policy experts and water education planners place their faith in formalized education techniques that center the expertise of the state and other competing interests.

Even though education programs about water conservation in schools position kids as educators who can bring home expert knowledge to ignorant households, one child corrected that narrative and explained she actually learned through modeling by following her family members and community members with her “owl” eyes. She provided an example of learning how to capture rainwater by watching garden management multiple times per week. By watching, she explained, she was able to pick up institutional patterns of water conservation (for instance, water was not used in the garden on Tuesdays), and learn how to care for plants with responsible water practices. She laughed that she’s always on the lookout, “like, ‘Oooh, what’s going on here? What’s going on there?’... I keep a schedule, you know.” She centers herself and her interpersonal, modeled experiences with water as the primary site for learning, not designed activities in the classroom or through homework assignments where she was asked to spy on her community.

A handful of parents also mentioned that they had already taught their children a lot of the information they were coming home with, though it had previously been rejected. An aunt accused her nephew of not paying attention to the many times she tried to teach him to be a more responsible water user, while he suddenly became conservationally-minded when the same practices were brought up in school. Jaehyun Park also described the same phenomenon manifesting with his child, and theorized that when children hear it from their parents it doesn’t necessarily “sink in” as much as when “you go to school yourself and you’re around other people who think that way.” The memories and successes of modeling, in partnership with the multiple rounds of information sharing framed around the idea that parents need to be taught, reproduces the school as the site of reliable expertise, whereas typically feminized spaces, such as the residence, need to adapt to let this expertise in.

What’s Missing?

Missing from the narratives of personal responsibility is a clear analysis of where the majority of California’s water actually goes: agriculture, industry and urban spaces. Although students learn about water distribution as divided percentages, water education in schools fails to include the divestment of water from Native communities, the bottling of the limited resource by private companies for profit, and the contamination of water by toxic dust and contaminants from industrial production and extraction. Instead, students are encouraged to take individual responsibility for the problem at hand, not by solving root problems, but by policing their neighbors for each tiny drop that leaks from their faucets, yelling at their parents to turn off the water while they brush their teeth. The scarcity becomes their problem and their fault, and this narrative enters residences with moral, ethical, and culturally valued expert claims to back it up.

This paper reveals the textures of how this type of expert-centric water education—entangled with broader social, political and economic systems—moves through the household, impacting the lives of residents, and transforming children into responsible
detectives. Ultimately, this information reveals new ways of considering the porous nature of the residence as an economic and state site, made accessible through the lives and movements of children.

References


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