

Kris Gutiérrez: designing with and for diversity in the learning sciences

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Received: 30 July 2014 / Accepted: 30 July 2014 / Published online: 8 October 2014
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Abstract This article reviews the significance of the theoretical and practical contributions of Kris Gutiérrez to research on science education. Gutierrez’s ideas about design and equity have inspired scholars to investigate how to leverage learners’ everyday practices to make meaningful connections to disciplinary-based knowledge and skills. Her work has provided valuable direction on how to engage the challenges of organizing for more equitable futures through critical understanding of cultural diversity as a resource for transformative learning.

Keywords Diversity · Social design experiments · Learning

Kris Gutiérrez began her career as an educational researcher, first as an undergraduate at Arizona State where she focused on English and Reading Education and then at the University of Colorado at Boulder where she was a graduate student in English and Education. From these early days, one could see the seeds of the equity-oriented work for which she has now become well known. At Boulder, she was active in re-organizing programs for university students who were provisionally accepted at the university and put on a “remedial” track. Her designs created ways for the students to build on their assets and to learn in more powerful and expansive ways with each other. At the same time, as a graduate student she was developing her expertise in literacy studies, research evaluation methods, and the study of learning. From Boulder, she took her first tenure-track position at the University of California, Los Angeles where she cemented her reputation as a scholar, teacher, and activist. A former president of the American Educational Research

L. D. Dierking and J. H. Falk, Editors for Special Issue, 2020 Vision: Envisioning A New Generation of STEM Learning Research

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Association, a member of the National Academy of Education and the National Board for the Institute of Education Sciences, she then returned to the university where she began. For all of these accomplishments, Gutiérrez was made the inaugural Provost's Chair at the University of Colorado Boulder.

I have crossed paths with Kris multiple times. When I was a postdoctoral scholar at UCLA, Kris invited me to teach the course that was connected to *Las Redes*, the Fifth Dimension afterschool program she designed to serve Latino elementary students in the port of entry city of Los Angeles. This class was critical as a space for undergraduates to make sense of theories of learning and their connections to children's lives. I barely had a moment to feel anxious about teaching the course before Kris handed me a box filled with years' worth of carefully developed activities and lecture notes. She suggested strategies to jump start conversations and to help undergraduates question their assumptions about language and cultural difference. Kris also told me that I was free to teach in whatever way I thought best and to please add my ideas to the course box. In this early interaction, I experienced the generosity, hands-on mentoring, and commitment to cultivating theoretically informed practice that mark Kris as a scholar and teacher.

Fast-forward 10 years. Kris and I are now colleagues at the School of Education at Boulder. In this context, I have been able to see close up how she translates her commitment to collaboration and diversity into an inclusive leadership style. Kris has high expectations for the academy and, daily, I am impressed by the fact that she never seems to tire in her work toward making the university a better place for students and faculty to learn.

When one meets Kris Gutiérrez, it may take a minute to grasp that the funny and utterly chic person in front of you is also one of the nation's most influential researchers on learning. Drawing on insights and methods from fields including anthropology, psychology, linguistics, education, sociology, and Critical Race Theory, Gutiérrez has pushed the boundaries of thinking in terms of who can learn, where, when, and how. In the following pages, I discuss some of the interrelated areas in which Gutiérrez has made significant impacts on the field of education broadly and the study of learning specifically.

Uncovering the cultural practices of non-dominant communities

Researchers of learning, particularly those coming out of the sociocultural and social practice traditions, have productively critiqued a sole focus on cognition inside of the head because of the negative consequences it has for learners who have not been viewed traditionally as "smart." Such perspectives ignore the situations in which people participate, the tools they use, and the reasons why they pursue particular goals and not others. In other words, these theories of learning disregard the cultural contexts of social action. With Barbara Rogoff, Gutiérrez further developed this critique of reductive views of learning by positing that culture should not be thought of as a variable separate from cognition. Cultural practices, the day-to-day activities in which we routinely engage using talk, tools, and interactions with others in our communities, should be understood as mediating human activity. Further, these practices are not static, but develop, and continue to change, in historical context. In this discussion of cultural practices, Gutiérrez and colleagues effectively link local actions in which individuals engage to broader social issues, underscoring that these practices do not exist outside of power, positioning, and ideology. As Gutiérrez and Rogoff (2003, p. 21) explain:

"We are not arguing that group membership defined by ethnicity, race, and language use is irrelevant. These categories have long-standing influences on the cultural

practices in which people have the opportunity to participate, often yielding shared circumstances, practices, and beliefs that play important and varied roles for group members. People do not just *choose* to move in and out of different practices, taking on new and equal participation in cultural communities.”

To be able to see these practices and their consequences on access and opportunity, we need to study communities’ histories of engagement in cultural practices. However, this does not mean, that researchers should ignore the individual experiences of people. Taking a humanist approach to the study of learning, Gutiérrez also urges us to understand who people are, their stories, and the unique experiences and resources that have shaped their worldviews. As she emphasizes with what she calls the “100 % piñata rule,” 100 % of Mexicans do not hit piñatas 100 % of the time; individuals may belong to a particular racial or ethnic group, but this membership does not define their every action. In fact, there is greater variance within communities than across. For this reason, educational researchers should view people and their communities with a bifocal lens, which can enable us to see both the regularity and variance in their practices.

A cultural practices perspective requires researchers to put individual action into historical, economic, social, cultural, and personal contexts. Although this approach has general value for studying any community, it is particularly powerful for unveiling the ways in which what Gutiérrez refers to as “non-dominant” groups (to emphasize their positioning in relation to power) have been systematically discriminated against. The approach for which she advocates requires shifting our focus from their presumed deficits to their strengths.

Leveraging everyday forms of knowledge for transformative learning

When we take the view that people are complex beings who engage in multiple kinds of social practices as part of different communities, we are confronted by the vast heterogeneity of our experiences. We know and value a variety of things in our everyday lives, but in traditional school settings especially, it is often only our academic learning that counts. From the cultural historical perspective that informs Gutiérrez’s view, this would be described as the privileging of “vertical” forms of learning over “horizontal” forms of knowing and doing (Engeström 1987). Gutiérrez pushes against this narrow conception of what it means to be intellectually competent not only because it penalizes large numbers of people who have not been traditionally successful in schools, but also because this view does not present a complete view of what people do know and are capable of doing. In an effort to remedy this myopia, she recommends that researchers consider the extensive repertoires of practice that people develop in the multiple contexts in which they participate. This can be accomplished through following people as they navigate in and across activity settings as part of their daily routines or by investigating how social practices travel through settings. In this way, it can become possible to capture “learning as movement,” the possibility for people’s capacities and identities to shift as they engage in diverse social practices across a range of contexts.

Gutiérrez’s long-term research on the Migrant Student Leadership Institute (MSLI) which she directed at UCLA, provides a powerful example of how leveraging everyday knowledge in academic settings can lead to transformative education. The MSLI was designed to facilitate the participation of students from migrant farm-working backgrounds in college. Unlike traditional instruction in which students from non-dominant

communities are often not allowed to display their full intellectual capacities, the MSLI model challenges this deficit orientation. As part of the learning ecology of the MSLI, students are encouraged to “locate and re-locate” their experiences in relation to the social theory, broad historical texts, and the local history of their communities that they study. Rather than focus on their deficiencies as readers and writers, for instance, the students took courses in which they read Paulo Freire’s (2000) *Pedagogy of the Oppressed* in order to understand oppression and its impact on literacy practices. They developed scientific literacy by investigating the health issues of their own communities. In these ways, the students gained facility in high status, academic reading and writing genres as well as the explicit development of socio-critical literacy skills. The program thus helped the students to see themselves in a different way, not as members of a struggling class, but as young agentic people who can successfully compete for admission to elite institutions of higher education. Gutiérrez provides a glimpse into how this happens through the routine practices of the program:

“...on any given day of the month-long program, if you were to drop into a social science or writing classroom or listen in on conversations across the range of practices that constitute life in the MSLI, the topics you would hear, the people discussed, the issues raised, would usually be presented in a way that makes clear how they are located in a history. You would begin to understand how a historicized view of the educational and sociopolitical reality of migrant and immigrant communities helps to incite a reframing of education, of oneself, and of one’s future actions” (Gutiérrez 2008, p. 154).

Gutiérrez describes what happens at the MSLI as creating a “collective zone of proximal development” in which the migrant students engage with the tools of the program and their instructors to craft understandings of themselves as empowered, historical actors. In this extension of Vygotsky’s original concept, Gutiérrez underscores a focus on historicity and collective social dreaming about “the world as it is” and the “world as it could be” (Gutiérrez 2005).

Designing robust ecologies for learning

Understanding how activity settings, tools, and social theory can be drawn together purposefully to create sites for expansive learning directly shapes Gutiérrez’s work on the MSLI. She describes the intention behind such interventions as “social design experiments,” an approach to doing design research that values the use of ethnographic research that is oriented towards creating sustainable forms of social change. Unlike other approaches to educational design, social design experiments, start with a historicized understanding of the phenomena under consideration, collaboration with members of the target community to understand problems of practice, and from there, introduce new mediating tools, social relations, and practices that aim to provoke transformation in the organization of learning in an activity system.

An example of a social design experiment focused on expansive learning for children and adults is Gutiérrez’s afterschool clubs. Modeled after the Fifth Dimension clubs developed by Michael Cole (2006), Gutiérrez uses her clubs, *Las Redes* (in California) and *El Pueblo Mágico* (in Colorado) to develop powerful pedagogical arrangements for engaging children from non-dominant communities.

As a direct challenge to the deficit orientations that predominate U.S. schools, the afterschool clubs are built on a foundation of diversity and inclusion. Children and adults are encouraged to draw on multiple languages, genres, and cultural resources as they engage in club activities; in fact, this polylingualism is privileged in this space. Code-switching between Spanish and English, the blending of everyday and academic reasoning to understand concepts, and the blurring of distinctions between play and work are routine features of participants' interactions.

This intentional hybridity is meant to facilitate the emergence of expansive learning opportunities in which participants can develop new ways of understanding content as well as themselves as learners. Gutiérrez has called these powerful meaning making moments "third spaces," where alternative or competing types of discourses intersect so that their differences do not divide them, but rather come together to transform conflict into sites for joint inquiry. Hybridity is an essential component of Gutiérrez's design for the clubs, but it is not sufficient.

Similar to the MSLI, the afterschool clubs invite learners to engage in tasks that are challenging and rigorous, that ratchet up what children can do while providing a variety of kinds of assistance. For example, the tasks at *El Pueblo Mágico* include designing video games using computational modeling software, creating digital stories that integrate video, music, and narrative, and writing and sending electronic letters to a cyber Wizard. These activities demand higher-order thinking skills like planning, reasoning, and reflection while simultaneously inviting children to use their creativity and imagination. The undergraduates who attend the site as part of the associated course on learning theory help the children by asking questions, suggesting ideas, and re-organizing the tasks to be done, and they approach the activities as co-problem solvers rather than teachers. Through this shifting of the usual social organization of learning between adults and children, the participants are on a more equal footing than they would more typically be in classrooms. This shifting of ordinary power relations between children and the participating undergraduates, facilitates new ways of imagining how to be a learner and a teacher.

Both Gutiérrez's afterschool clubs and the MSLI are oriented toward trajectories that do not yet exist, but that are being developed through careful and collaborative designs. It is here where social design experiments have their greatest potential. In their attention to how contexts of development have been produced and can be re-organized for more equitable outcomes, this approach offers an empowering and ecologically valid method for analyzing and promoting learning.

Cultivating a new imagination for education policy

Gutiérrez's research findings on learning and literacy in formal academic and out of school settings are consequential for students and teachers, especially those who serve learners from non-dominant communities. Three main categories of policy implications derive from her work.

The first relates to the need for educators to develop multidimensional representations of non-dominant communities, their practices, and the contexts that contribute to the challenges they face. By creating portraits of communities that capture their dynamism, while simultaneously taking into account their histories, we can better understand the near and distal factors that shape current situations. Further, for policy makers, school administrators, researchers, and educators to understand the situations that children and youth face, they need to appreciate their everyday, lived experiences rather than working off of

stereotypes and static views of ethnic, racial or linguistic groups. Following Gutiérrez as a model, educational researchers would be wise to draw upon the insights and methods of multiple disciplines to investigate and design potential solutions for the complex problems that face communities. A challenge is sharing these stories in ways that capture nuances without seeming overly complicated (or academic) so that they can be used to guide action and equity-minded transformation. As Gutiérrez has explained, educators should be the go-to people for policy makers, but this is not currently the case. One way we can do this is to write in ways that are both theoretically grounded and practically oriented. Another is to work closely in communities so that we are not doing research *on* them, but *with* them. This can make our research meaningful to communities and relevant to the problems with which they struggle.

A second implication for policy that comes from Gutiérrez's research relates to how we design learning situations to ensure that everyone has the opportunity to be "smart." Building on her view of the complexity of communities, we need to create solutions that consider problems holistically—that is, as products of history, economy, language hierarchies, immigration patterns, race and gender inequities (to name but a few contexts of potential relevance). Towards this end, Gutiérrez advocates for the "re-mediation" of functional systems. By this she means that we must attend to how situations are socially and culturally organized to produce particular outcomes (e.g., smart/incompetent students) and how we might re-organize them by introducing new practices, tools, and forms of assistance. The term *re-mediation* (Griffin and Cole 1984), which Gutiérrez uses to describe this process, draws upon the central concept in sociohistorical theory of "mediation," which is the idea that all human action is social and is shaped by the use, creation, and interpretation of cultural tools. Locating her views on how to improve education within this framework, Gutiérrez pushes against the limiting views of "remediation" that inform approaches to education that center on correcting students as if they are in need of repair. Re-mediation emphasizes the potential inherent in re-organizing situations so as to re-organize thinking and action.

Examples of what this might look like can be found in Gutiérrez's social design work with the MSLI and her Fifth Dimension clubs. It is also evident in the work of scholars including Megan Bang and the Cheche Konnen research team.

The third implication of Gutiérrez's research encompasses the first two: learning must be at the center of policy making. Learning, as Gutiérrez has argued and demonstrated in her research, is more than what schools commonly emphasize. Abstract thinking and decontextualized reasoning often associated with disciplinary knowledge are an important part of learning, but they are not all there is. For policies to make a positive impact on children's learning, policy makers must be aware of the new science of learning and its key tenets (Meltzoff, Kuhl Movellan and Sejnowski 2009). To put it succinctly, in addition to happening in classrooms, learning takes place in and across the multiple practices in which people participate—as family members at home, as farmworkers, as players on sports teams, as parishioners at church. These different forms of identity and engagement shape what people know, value, and come to desire for themselves and their communities. Ignoring these practices puts learners, particularly those from non-dominant communities, at a disadvantage in schools. It disallows opportunities for personal and community histories to become meaningfully intertwined with ideas studied in classrooms. As Gutiérrez has articulated in the design of her afterschool club in Colorado (*El Pueblo Mágico*), this is how deep learning is facilitated: when horizontal forms of knowledge (e.g., what one knows from everyday life) "grow into" vertical forms of knowledge (e.g., disciplinary knowledge).

Comprehensive and empirically grounded perspectives on learning must guide how policy makers develop decisions about valid forms of student/learner assessment, funding, curriculum, and out of school programming. With her roles on numerous national panels and committees including President Obama's Transition Education team, Gutiérrez has positioned herself to ensure that policy makers attend to the complexities of learning and the requirements for creating a more equity-minded society.

Developing new researchers of learning

In the previous pages, I have presented Gutiérrez as an outstanding scholar, attuned to the need for research to address the current demands of society as well as to speak to its future. Part of that visioning requires developing researchers who have the skills, dispositions, and imagination to help us make the world in which we want our children to thrive. With that in mind, Gutiérrez takes the work of teaching and mentoring—of undergraduates, graduate students, and junior faculty—very seriously. She is an award-winning instructor who continuously revises her courses and classroom practices to engage students in the authentic activities of research, design, and teaching. She is also a distinguished mentor, who has served as an official mentor through the Spencer Foundation and the American Educational Research Association among other organizations, to help students and faculty to hone their research skills while also crafting their research identities.

Gutiérrez's commitment to diversity and equity shines through in the inclusive manner in which she identifies and nurtures talent. As her research agenda implies, the problems of education require researchers with varied disciplinary backgrounds, theoretical orientations, and methodological approaches (Erickson and Gutiérrez 2002). With a more expanded toolkit to guide our inquiries, we have a greater capacity for seeing individuals' repertoires of practice as assets for their learning. Gutiérrez would also argue that the academy should strive to include excellent faculty and students from different cultural, linguistic, racial, and socioeconomic backgrounds. Developing a diverse cadre of educational researchers can help us to appreciate alternative perspectives, collectively imagine different kinds of futures, and create more robust designs for learning.

Kris Gutiérrez's contributions to the field of education have been significant in leading researchers to think in more dynamic, theoretically grounded, and innovative ways about the nature of learning. I count myself as very lucky to have learned from Kris as a postdoctoral scholar who was just starting out as an academic and now as a tenured faculty member striving to figure out how to advance my field of the Learning Sciences in ways that best serve our increasingly diverse student populations. Kris has modeled for me how to be a faculty member who is what universities call "triple hitters"—her work blends research, teaching, and outreach in innovative, important, and meaningful ways. What is more important than this is that she has also shown me how to do this with great care and respect for those with whom she works.

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