

## Invited Symposium: Regional and Epistemic Heterogeneity in the Learning Sciences: Supporting Transnational Dialogues on Equity and Justice

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**Abstract:** The ISLS has long been focusing on innovative learning that supports inclusive socio-emotional and collaborative practices, and more recent research has taken up political and ethical dimensions of human learning as central to design, practice, partnership and research. The society is also taking concrete steps towards structural changes in its own conduct to meaningfully engage with heterogeneity – including sociohistorical, cultural, economic, geographic, political, and epistemic difference – in ways that understand the centrality of variability to learning. This symposium presents activities of the ISLS to support the spirit of such research and promote multiple perspectives on diversity, equity, and justice. It grows out of many requests to the society to support regional and research affinity group activities. It aims at strengthening the growth of regional communities of learning scientists and communities of scholars who are engaging in research that is germane and synergistic to the Learning Sciences but currently underrepresented in ISLS. Researchers present their own view on ISLS research, report on their concepts and results on community building, knowledge sharing and consolidation, collaboration and cross-pollination in this context. The symposium thus seeks to

increase mutual awareness between ISLS and scholarly and educational communities with synergistic interests and expertise, as well as perspectives that help question the presumed normative (e. g., Western) assumptions that have often shaped research within the history of the field. It thus illustrates and creates space to wrestle with the society's initiative to promote structural change and meaningful epistemic expansion.

## Overall Focus

The learning sciences (LS) investigate contexts, practices, and processes of learning, including their cognitive, social, emotional, and cultural dimensions, and the conditions that support learning. ISLS has always placed value on complex views of learning, such as those that attend to how people collaborate together (Palincsar, 1998), participate successfully in communities of practice (Lave & Wenger, 1992), and live culturally (Lee et al., 2003). Socio-technical concepts have been researched that may endorse such practices (Stahl et al., 2006), although less of this work explicitly focusses on heterogeneity as a resource (Tsovaltzi et al, 2019) and how this can contribute to attitude change for learning and development (Puhl, Tsovaltzi, & Weinberger, 2015). A general tension has been there since the early work in the LS on whether epistemic and socio-cultural diversity is seen as a challenge to overcome or an asset of human learning (Cole, 1998; Gutiérrez & Rogoff, 2003; Turkle & Papert, 1990). Research in other fields has provided evidence on how one's environment determines the way we learn, for example through emotional socialization (Curnow & Veal, 2020; De waal, 2016; Feldman Barrett & Lindquist, 2008). It is becoming evident that besides new vocabularies and ideologies, also new practices need to be adopted in which socio-cultural diversity pertains to epistemic diversity and human learning.

Critical social theorists around the world have long highlighted the relationships between education and oppression – as well as the role of education in struggles for freedom and self-determination (e.g., Ambedkar, 1935/2014; Fanon, 1952; Freire, 1970/2002; Fasheh, 1990; hooks, 1994), and concerns about the politics and ethics of learning have been discussed in western education since Dewey in the early 1900. However, these dimensions have only recently started to be included in the mainstream of the LS. ISLS scholars have increasingly positioned heterogeneity as not only a reality of life, but in fact an urgent paradigm shift to create equitable, effective, and just learning environments (Agarwal & Sengupta-Irving, 2019; Bang, et. al. 2012; Annamma & Booker, 2020; Rosebery et al., 2010; Takeuchi & Marin, 2022). Technologies may play a role in endorsing heterogeneity and justice (Hoadley & Uttamchandani, 2021; MITHOS, 2021). To fully incorporate issues of heterogeneity, equity and justice in LS research, we need to explicitly sharpen learning scientists' abilities to attune to the political and ethical dimensions of learning (Politics of Learning Writing Collective, 2017; Philip et al., 2018; Philip & Sengupta, 2021; Booker et al., 2014). This means attending to questions of power, expansiveness and constraint, ethics/axiologies, epistemic openness, and heterogeneity in our theories, methods, and designs – as well as in the structures of the LS. In this symposium, we present a series of projects undertaken or funded by the ISLS community in this spirit. These projects are united by a commitment to epistemic openness (Talero, 2008; Vossoughi, 2014), which we see as requiring (a) a contention with when, how, and why ISLS is historically and presently restricted in whose participation and perspectives are welcome, (b) a careful, non-defensive investment in broadening the people, perspectives, and practices that are seen as relevant to the community at large bany (c) listening to, and dialoguing with, people and places with a commitment to a heterogenous LS as necessary for just and sustainable research, design and practice.

This symposium advances Society's practical commitment to making equity and justice central to its organizational structure, key activities, and membership. It also reflects the expansion of local and global movements for justice (racial, economic, gender, decolonial, academic, environmental, etc.), related calls for institutional rather than symbolic or discursive change, and inquiry into how these movements are themselves key contexts of collective learning. Thus, the symposium will involve discussion from several initiatives. The first includes discussion of the relatively new ISLS Equity & Justice committee. The second includes discussion by the recipients of the ISLS membership committee's Regional & Affinity Outreach Funding Programme. The regional strain aims to open up communication paths between learning science researchers from regions of the world that are currently underrepresented in the field and society. The affinity strain aims to combine the expertise of different research fields which might see themselves as affiliated with, but not adequately represented in, the ISLS community. The third includes discussion about the newly-formed ISLS Brasil Affiliate Group.

## The significance of the contributions and how the collective presentations contribute towards the issues or points raised

Together, the presentations in this symposium cross sociohistorical, cultural, political, and geographical boundaries to support epistemic openness and heterogeneity. They address questions that have been core to the LS since its inception, but also consider if and how core assumptions of the field can be questioned in ways that

expand our view of epistemologies of learning and human variation in educational values, goals and practices (Lee et. al., 2021). Importantly, this requires taking seriously the perspectives of those who may, by exclusion or choice, not have historically participated in the LS. We therefore recognize the importance of deepening connections with justice-oriented theories and methodologies and heterogeneous perspectives, particularly from communities historically marginalized in the field (e.g. minoritized communities, Global South perspectives). The long history of research in this Society underscores that these connections are crucial to rethinking theories and methods that reproduce presumed normative conceptions of learning based on dominant populations or understand non-dominant populations only in deficit terms. Ongoing dynamics of US-centrism and Western normativity, for instance, also mean that the Society has important work to do to expand and learn from colleagues across the globe.

### Symposium Organisation

Each contribution will be presented briefly, picking out the major problem or theme they address with regard to the cross-fertilisation aim of the symposium. They will illustrate how they intend to or have already structurally engaged the problem or theme. The discussants are Jun Oshima, who was cardinally engaged in all of the structural initiatives included in this symposium, and Ayush Gupta, who has extensive experience with questions of power and transnational politics as they relate to the study of learning. They will participate in a half-hour plenary discussion after the presentations with all presenters. The panel will then answer questions from the public. The following contributions will be presented.

### Formation of the ISLS Equity and Justice Committee

Shirin Vossoughi, Kris Gutiérrez and the ISLS Equity and Justice Committee

The following statement is drawn from the charge of the ISLS Equity and Justice Committee, which began its work in January 2021. The extent to which equity and justice thrives in institutions is both a moral question, and a measure of the health and well-being of an organization as a whole. As a society focused on the improvement of learning and educational processes, we therefore understand equity as both ideal and pragmatic, and as addressing change across multiple scales—from institutions and the practices that sustain inequity to transformation in individuals and communities' agency and the kinds of knowledge that are valued and leveraged across spaces. To this end, we understand equity not as an add-on, but as requiring ongoing reflection and examination of existing norms and practices, and the development of commitments that can guide the work of the Society.

As Learning Scientists, we are invested in scholarship that contributes to thriving learning environments and communities. We understand learning as embedded in the settings of everyday life (e.g., families, schools, out-of-school settings, communities, etc.) and are committed to ensuring the dignity of learners across these environments. Given our shared emphasis on studying human learning in real-world environments, we understand that questions of equity/inequity are always present though they may take shape differently across contexts, and therefore require deep reflection on the ethics and implications of our research. This stance compels us towards ongoing reflexivity and examinations of the constructs and methodologies we use in the work of design, teaching and learning, partnership and research. We also see the need for dynamic, contextual, global and historicized views of diversity that avoid essentializing and embrace the crucial role of multiple ways of knowing in the work of our field (Warren, et. al., 2020). Sharing scholarly work across cultural and linguistic contexts, for example, is not merely a question of translation but of the epistemic modes through which knowledge is produced and made legible, and on whose terms. Our commitment to multiplicity and pluralism therefore includes fostering the space to engage with various conceptions of justice, education and learning, and to wrestle with the full complexity of social and cognitive phenomena in the conduct of our science. Addressing multifaceted and dynamic conceptions of learning and expanding the foundational interdisciplinarity of the field should be key concerns of the Learning Sciences and Computer-Supported Collaborative Learning.

In summary, here are some key principles to guide our collective thinking: (1) We see equity as historical and everyday structures and practices that help shape institutions such as ISLS, as well as disciplines and fields of study. (2) We understand equity as both ideal and pragmatic, and as addressing change across multiple scales. (3) It is crucial to rethink theories and methods that reproduce presumed normative conceptions of learning based on dominant populations, or understand non-dominant populations only in deficit terms. (4) We see the need for dynamic, contextual, global and historicized views of diversity that avoid essentializing and embrace the crucial role of multiple ways of knowing in the work of our field. (5) We recognize the need for ongoing reflexivity and examinations of the constructs and methodologies we use in the work of design, teaching and learning, partnership

and research. (6) We therefore work to mobilize the transformation of practices in our conferences, journals, mentorship, and other activities of the society in ways that substantiate the above principles in practice.

## Investing in emerging scholars to improve the learning sciences

Leema Berland, Maxine McKinney de Royston, Roberto de Roock, Rod Roscoe, Dengting Boyanton, Mmantsetsa Marope, and Victor R. Lee

The multiple global crises of our times have prompted the LS community as other academic communities to deeply consider how it can best address issues of equity of opportunities within its field, its respective institutions, and organizations. This includes developing a collective awareness about systemic challenges and adversities many scholars face in the pursuit, sustainment, and advancement of their scholarly work. Close attention to inequality of opportunities has enhanced ISLS's collective awareness of the ways in which assets marginalized scholars bring to the field are systematically and systemically overlooked or unacknowledged. As part of its efforts to address this systemic marginalization of groups of scholars, ISLS initiated the Emerging Scholar Program. It is hoped that this program will- through recruitment and mentorship efforts- encourage and empower scholars who have been traditionally marginalized to engage with, and contribute to the society. This program aims both to support emerging scholars in their own personal and professional trajectories and to support intellectual, racial, and cultural diversity in the field. This initiative will be funded by the Wallace Foundation which will provide five \$10,000 grants a year for three years, for a total of 15 funded projects. These projects must be led by junior scholars who have experienced professional marginalization and whose work (in methods or in research topic) addresses inequities in education.

The goal of expanding both *whose* work, and *what* work, is valued and elevated within ISLS presented our committee, in the inaugural year of the effort, with novel challenges. For example, addressing this goal required ensuring that individuals that research learning (broadly conceived) who are not yet part of a LS community had access to the call for proposals, and that the call was written in ways that those individuals were able to recognize themselves and their work as relevant. This goal required the committee to consider what terms like “diversity,” “equity,” and “marginalization” mean as well as what they mean in relation to ISLS and the LS specifically. This goal also required that reviewers of the proposals had expansive epistemologies such that novel theoretical and/or methodological frameworks were recognized and valued. Thus, in this presentation, we will describe the successes and discoveries we experienced, within the first year of the Emerging Scholars Program, while working towards the goal of diversifying ISLS's membership and epistemologies.

## Translating Across Disciplines: Urban/Community Planning & Learning Sciences

José W. Meléndez, Joshua Radinsky, and Katie Headrick Taylor

In recent years, there has been a good deal of interest in building a bridge between planning research and work in the field of LS, which has robust theoretical and methodological tools for studying learning (e. g. Meléndez & Parker 2018; Radinsky, et al., 2017; Taylor, 2017). This is exciting, given how learning is at the core of many urban planning processes . The list of topics that citizens have to learn about when engaging in community development or the local knowledge that those in charge learn about by engaging with communities is endless. Nevertheless, planning as a field is always wrestling with how to attend to what the disciplines refers to as *social learning* (Muro & Jeffrey, 2008) in a variety of contexts, especially in relation to issues of power, access, and social justice. Through this work, we proposed that sociocultural learning theories from the LS can help researchers align behavioral changes with cognitive learning, a challenge identified frequently in the social learning planning literature. Additionally, learning scientists have a long history of using design-based research methods to create, test, and refine tools for use in real-world settings that promote learning, and to study the learning that results . More recently, the growing body of Learning Sciences work being conducted in urban and community planning contexts (e.g., Melendez 2021; Meléndez & Martinez-Cosio, 2021; Taylor, 2020) suggests a valuable cross-pollination of concepts and methods that can expand our understanding of how people learn with tools, and the kinds of social learning processes that emerge in community development work.

The support provided by the ISLS Grant for *Regional and Affinity Outreach & Engagement Promoting the Learning Sciences* was instrumental in bringing learning scientists and urban/community planners together for the 2019 Association of Collegiate Schools of Planning (ACSP); the leading urban and community planning conference. The funds from this initiative went to support speakers for two pre-organized sessions, in addition to a culminating roundtable to discuss future opportunities for generative collaboration across disciplines. Without

a doubt, the learning scientists who were asked to present papers: Drs. Joshua Radinsky, Susan Jurow, and Katie. H. Taylor would not have attended ACSP without the financial support made possible by this grant and the organization that placed their work in conversation with efforts underway in the planning field. Additionally, the planning scholars who also presented: Drs. Camille Barchers, Daniel Milz, and Moira Zellner were able to place their understanding of learning in planning contexts in direct conversations with learning scientists. Dr. Maria Martinez-Cosio was the discussant for both sessions, which provided a unique opportunity to support the engagement of cross-disciplinary dialogue. A rare collaborative effort to translate across disciplines in disciplinary specific conferences. ISLS, through this initiative took a step towards breaking down silos that often prevent the useful applications of theories, concepts, tools, and ideas across fields.

### **Expanding views of ‘research’ in science learning as an inclusive approach to different ‘knowledges’**

Jasmine Y. Ma, Emilia A. Nhalevilo, Ananda Marin, Sarah C. Radke, Marit Dewhurst, Rishi Krishnamoorthy, and Arundhati Velamur

Globally, education research, including science education and the LS, has developed momentum in grappling with diverse epistemologies for science learning—beyond those of dominant, Western communities—honoring Indigenous ways of knowing that are relevant to the content of school science learning (e.g., Marin & Bang, 2018; Nhalevilo, 2013). Broadly, Indigenous ways of knowing are similar in that they are rooted in an ontology that unsettles the more dominant nature-culture dichotomy; but the ways in which this is emergent differs widely across the globe—often because of different sociocultural, political and historical contexts. Work in the Learning Sciences has demonstrated the value of alternative epistemologies for equitable and sustainable futures; however, this scholarship has primarily been based in the US, and with indigenous framings grounded in the Americas. Therefore, it is imperative that US-based research consider the diversity of non-dominant ways of knowing in science classrooms to ensure our developing scholarship and equitable school practices grow beyond US-centric notions but are connected globally.

In this participatory research study, education researchers, science teacher educators, and science teachers from the US and Mozambique collaboratively develop shared understandings to enhance science teachers’ and science education researchers’ perceptions on the diverse kinds of knowledges under different epistemologies, supporting a culturally inclusive science education. We plan a four-day workshop with pre- and in-service science teachers in science education and science education researchers from Mozambique, and LS researchers. During the workshop, led by program organizers, participants will share examples of local/indigenous knowledge related to science content. LS researchers will share ongoing work and findings from related scholarship in LS. Themes will be discussed, and areas of synergy (including overlapping interests in alternative ways of knowing, doing, and learning science), and continuing issues for inquiry will be developed and presented by the participants. Initial research questions, to be re-negotiated and refined with all participants, ask: 1) How might researchers and science educators bring together diverse Indigenous science knowledges; and 2) How can diverse Indigenous science knowledges inform K12 science lessons? Activities also include a post-workshop program: organizers of the workshop will conduct a survey with participants to evaluate the impact of the activity. Researchers and participants will have the opportunity to share, explore, and compare Indigenous science concepts and epistemologies, and collaboratively design lessons for K12 classroom settings. This project will contribute to education that supports the cultural diversity of today’s science classes, and theories of science learning grounded across global contexts. In addition, the workshop will lead to future work building transnational connections with Indigenous scholars globally, towards constructing curricula that value marginalized students’ ways of knowing. Currently the project team is designing the workshop, with a plan to conduct it in May of 2022.

### **Soch: Expanding Indian and Indian Diasporic Ways of Thinking in the Learning Sciences**

Deborah Dutta, Gayithri Jayathirtha, Vishesh Kumar, and Suraj Uttamchandani

“Only people themselves have expert knowledge of the complexities they experience. If people come first, and those who are last come first of all, the answer to the question, ‘whose complexity counts?’ has to be, ‘theirs’.” – Robert Chambers, *Can We Know Better*

We came to this project as students struggling with the tension between the settings in which LS research has taken place—mostly western settings—and the non-western frames that have colored our experiences in

family, school, and day-to-day life. Coming to this tension as a nascent collective of Learning Scientists with diverse Indian (par/desi) identities (Bhattacharya, 2019; Rodricks, 2022), we approached the ISLS Affinity & Outreach Grant with the goal of surfacing and centering perspectives and work by Indian researchers and educators, especially about issues grounded in Indian peoples and contexts. To do so, we organized interviews spanning a breadth of people and work, and are in the process of editing and uploading them on a central website. We conducted 17 interviews with a variety of researchers and practitioners across India. The engagement of the interviewees looked across topics such as working with Indigenous Adivasi communities and education, caste oppression and education, technology and STEM learning in India, and critical disability studies in India, just to name a few. Our aim is for the interviews to be a starting point to foreground nuances within “non-Western” contexts, and different matters of inequity, justice, and education aimed at combating the western-centered ways of thinking about learning that dominate our field.

During this project, we repeatedly contended with what it means to be broad and expansive in our outreach—recognizing the impossibility of being exhaustive, while working hard to expand our own boundaries, awareness, and managing recruitment and interviewing amidst the ongoing global pandemic that played a heartbreakingly critical role in its differential impact across countries, communities, and peoples. Importantly, we realized that there was no way to “represent” the complex and diverse peoples that comprise (historical and contemporary) India and the Indian Diaspora through interviews with members of named cultural groups as representatives of the complex issues facing those groups (Gutiérrez & Rogoff, 2003). Instead, our focus shifted as we oriented to the interviews as dialogical, story-telling, and inherently incomplete—a catalyst for expanding our ways of thinking rather than as an exhaustive museum for display only. Therefore, we crafted and recrafted our interview questions themselves, moving from an investigative approach that began to feel extractive, to instead cultivating a generative interaction that was interesting, productive, and fun for both us and (hopefully) for our participants. We are currently documenting the journey of our process in further depth to share on our website as well.

This project resulted in a number of crucial “findings” and reflections. First, it has expanded the network of connections among LS and related scholars and practitioners in India and with Indian frames. Substantively, the interviews individually and in aggregate surfaced deeper insights and ways of looking at commonly discussed phenomena in the LS as they take different shapes in different contexts – most often around gender, and class, the roles of schools, discipline and conduct; and illuminating issues like casteism which play strong roles in India but are also an under-discussed and prevalent force across the world. Third, we helped make explicit the implications and assumptions underlying particular pedagogies, especially in ways they relate to social identities, livelihood aspirations, cultural practices and environmental justice. Finally, we ourselves grew significantly as learning scientists and as people through the doing of this project, complexifying and shaping the relationships we see among our culture(s), our field, and our work.

The eclectic range of the interviews hardly capture the complex and varied dimensions of learning and equity related issues in India. However, to assume anything else would be a sign of hubris. Our project was meant to acknowledge and emphasize the need to move beyond Western contexts, and deficit-oriented theories in the LS. Our effort is an invitation to other LS scholars and researchers from related disciplines to develop new methodologies, theories and perspectives to enrich the field based on multiple ways of knowing, being and becoming. What can the field of LS become by embracing plural epistemologies and critical dialogues across contexts? We cannot wait to continue exploring the possibilities.

## **New pathways to bidirectionally broaden the international community of learning scientists**

Raquel Coelho, Paulo Blikstein, Livia Macedo, Fabio Campos, Cassia Fernandez, Tatiana Hochgreb, Renato Russo, Adelmo Eloy

Over the last century, Brazil has made consistent contributions to education research: it is the homeland of Paulo Freire (1970/2002), Ubiratan D’Ambrosio (1985) and Terezinha Nunes (1993), three of the most significant education scholars of all time, and precursors to influential theories, pedagogical frameworks (e.g., Critical Pedagogy, Ethnomathematics, Culturally-Relevant Pedagogies) and methods (e.g., Participatory Action Research). Nevertheless, Brazil still has minimal participation in Learning Sciences. Paper submissions and attendance of Brazilian scholars are low or non-existent, and the country does not offer any graduate programs in LS. The research landscape in Brazil resembles that of the US prior to the 1990s (Pea, 2016): scholarship is segregated into departments of education, psychology, sociology, and computer sciences. Research in Brazil cannot thus benefit from a significant innovation brought about by LS: the recognition that the study of human learning requires a combination of multiple perspectives and that single disciplines are not enough. At the same

time, the LS community does not benefit from the extensive Brazilian scholarship on equity and critical pedagogy, and even references to Freire are restricted to a single publication.

The Brazilian Affiliate Group of the ISLS was born out of our collective desire to address these issues, at the same time expanding the representation of Brazil in the ISLS and accelerating the establishment of a Brazilian Learning Sciences community. Brazilian scholars may benefit from the theoretical frameworks and methodological innovations of the Learning Sciences, and the Brazilian community may bring new perspectives that can further our understanding of the situated nature of learning in formal and informal education. We are committed to not merely importing the predominantly European/North-American Learning Science frames of reference to Brazil but rather to making learning theorists and empiricists from South America *visible* to the international LS community.

One of our first initiatives has been to organize a Learning Sciences Winter School for graduate students and young scholars. The first was held virtually in 2021 over four days, with 45 participants, 25 speakers, and ten organizers. In these workshops, participants brought ideas and/or “drafts” of articles that were collectively discussed and improved by our newborn community. We then continued to assist a number of school participant-authors in revising their papers for submission to the 2022 ISLS Annual Meeting.

This experience is, for us, also an investigation into building bridges between academic communities, overcoming enormous obstacles such as funding, culture, academic imperialism, and language. It is also an experience in exposing to the ISLS community the enormity of the task of making the Society truly, and systemically, international, beyond tokenization, mere representation, and the insidious colonial makings of academia. If the Society wants to embrace a robust agenda of equity and justice, we need to move beyond US and European authors, lenses, and references and put financial and human resources into our expansion to other regions. Our work with the Winter School has shown that the burden of bringing new communities to the LS is enormous and often falls on the shoulders of a small number of international researchers that are, themselves, also trying to overcome obstacles as immigrant scholars. This self-perpetuating state of affairs can only change through consequential conversations and praxis within the ISLS, to which we hope to bring new insights.

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