

Participatory Planning and Teaching Restructuring Power Hierarchies and Supporting Learning Opportunities

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Abstract: This study explores how a sixth-grade class participatory planned and taught two science units, and its impacts on students' learning opportunities. Findings in this power-focused social design experiment show the class community developed five participatory planning and teaching cultural practices, and the enactment of these practices disrupted/amplified, at least momentarily, relational norms to expand students' positional and epistemic authority. This challenged how science education often limits who can participate and what is sanctioned as learning.

Scholarship at the systematic and interactional level have repeatedly shown how oppression impacts students' opportunities to both participate and have their expertise legitimized within science classrooms (Bang, Warren, Roseberry & Medin, 2013; Calabrese Barton & Tan, 2009). To further support more justice-oriented learning opportunities, more strategies are needed to support teachers, students and researchers to restructure power hierarchies operating to expand both who gets to define and participate in sanctioned learning. Therefore, we explored: *What participatory planning and teaching cultural practices did Mrs. B's sixth-grade class community develop as they participatory planned and taught two science units?*, and *How, if at all, does participatory planning and teaching shape learning opportunities?* Understanding if and how participatory planning and teaching may challenge how classroom teaching has limited students' learning opportunities.

Power-focused conceptual framework

This study uses a power-focused conceptual framework. Esmonde (2017) explains, "Power is made visible in the ways social relations between people enable some forms of agency, and constrain others" (p. 21). Power impacts opportunities to learn as learning occurs as individuals take up and are recognized for new practices by themselves and others. This study is bound by analyzing shifts in power hierarchies made visible through students' expanded epistemic and positional authority. By epistemic authority, we refer to the knowledge, discourse, and doing practices that matter in a space. Epistemic authority addresses *both* the nature of knowledge itself, as well as the social processes for achieving possible epistemic aims (Elby, Macrander, Hammer, 2016). Positional authority refers to the ways actors within the classroom are able to make decisions about how spaces and resources are used to support learning goals. Authority can expand, for example, from teachers and "high academic status" positioned students to all students, disrupting dominant patterns of participation in science classrooms – patterns which reproduce inequalities along race, class and gender lines (Philip & Azevedo, 2017). Paying attention to shifts and disruptions of classroom power hierarchies provides insight into students' learning opportunities.

Methods and analysis

Mrs. B, her sixth-grade students and we enacted a social design experiment. Social design experiment methodologies aim to understand educational challenges and develop interventions to support learning (Gutiérrez & Jurow, 2016). Social design approaches should be collaborative with all participants and disrupt the ways that design-based research and other forms of research have ignore racialized, institutionalized and other power hierarchies (Vakil, McKinney de Royston, Nasir & Kirshner, 2016). Data was generated across two community-connected science units focused on sustainability: an energy engineering unit and an invasive plant species ecology unit. 14 participatory planning and teaching events across the three months of these units' enactments were analyzed, using our power conceptual framework, as well as the ethnographic data generated across the school year. Data generated included: class video, interviews, conversation groups, student work and field notes.

Findings

Mrs. B's class provided insight into both how participatory planning occurred and how this process shaped learning opportunities within their community. We have three main findings:

- 1) Mrs. B's class community co-developed and enacted these participatory planning and teaching cultural practices: a) leveraging students' different expertise and interests, b) being flexible in participatory

planning and teaching of the curriculum, c) consensus building between all classroom community members, d) planning for more equity-oriented participation (e.g. providing multiple ways to participate and learn) as well as science learning, and e) planning for community-oriented outcomes that matter.

- 2) The enactment of these participatory planning and teaching cultural practices disrupted and amplified, at least momentarily, class relational norms in ways that supported expanded positional and epistemic authority within the classroom community.
- 3) The authority expansion, supported by participatory planning and teaching, shifted both who was welcomed to learn and what was sanctioned as learning.

We highlight these findings through a series of narrative vignettes that feature small group and whole class planning events across the energy engineering and invasive plant ecology unit. We also highlight the relational norms evident across the school year that were amplified/disrupted through participatory planning and teaching.

Discussion

Mrs. B's classroom community's experience provides new strategies for both analyzing and disrupting power hierarchies impacting learning opportunities. Figure 1. shows how authority, disrupting/amplifying class norms and participatory planning and teaching interact. Authority is a useful proxy for analyzing how power operates in classrooms. Understanding ways classroom communities can expand positional and epistemic authority supports the field in understanding how to disrupt power hierarchies limiting students' learning opportunities.

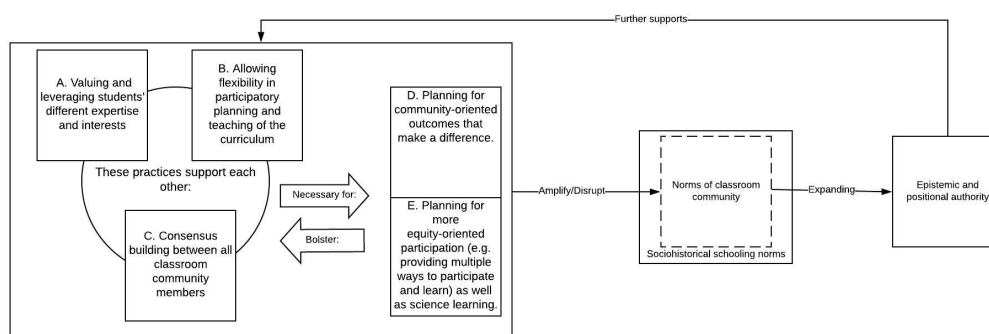


Figure 1. Participatory planning and teaching practices supporting expanded authority mechanism.

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Acknowledgments

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