SAGE researchmethods cases

Participatory Knowledge Building Within Research-Practice Partnerships in Education

Abstract

This case study considers how educational researchers and practitioners can work together to engage in *participatory knowledge building*, a process rooted in both empirical research and the lived practices and expertise of on-the-ground educators that produces knowledge relevant to both educational theory and practice. The method shared was used as part of a broader approach called research-practice partnerships (RPPs), a model of collaboration between researchers and practitioners that departs from and counters traditional assumptions of "research translation" that suppose a unidirectional relationship where researchers simply share findings with educators, administrators, and youth. Instead, research-practice partnerships are characterized by joint work, mutuality, and a focus on persistent problems of practice across stakeholder groups. Within research-practice partnerships, we propose participatory knowledge building as one method that indexes these values.

Rooting our case in the production of collaborative white papers addressing shared issues between researchers and practitioners, we first focus on *practical techniques* associated with participatory knowledge building, then discuss the *outcomes* of this approach for research-practice partnerships, and finally make *recommendations* for utilizing this approach. In discussing techniques to develop collective knowledge through participatory processes, we detail *topic emergence and selection*, *leveraging community contexts as spaces for knowledge building*, *integrating basic research data*, *synthesizing and creating an initial draft of the paper*, and *engaging in community-based feedback and dissemination*. We then detail the outcomes that such a process has for those engaged in research-practice partnerships, including *development of shared language*, *fostering a collective knowledge-building orientation*, *surfacing practitioner expertise*, *implicit renegotiation of the focus of joint work*, and *catalyzing new educational experiments and shifts in practice*. We close with lessons learned from our experience in this area and recommendations for others who are looking to engage in this practice. Broadly, the case highlights both the practicalities and affordances of using collaborative, participatory methods of knowledge production when the goal is first and foremost to improve educational practice.

Learning Outcomes

By the end of this case, students should be able to

- Understand what techniques can be used in order to produce knowledge collaboratively between educational researchers and practitioners
- Understand the possible outcomes of participatory knowledge building between educational

researchers and practitioners

- Understand the value of participatory approaches to knowledge building in educational contexts

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This case provides an overview of a *participatory knowledge building* method implemented by investigators of Hive Research Lab (HRL, hiveresearchlab.org) as part of a research-practice partnership (RPP) (Coburn, Penuel, & Geil, 2013) within the Hive NYC Learning Network (hivenyc.org). Participatory knowledge building involves researchers working collaboratively with educational practitioners to (1) *identify an area of educational practice* that is of shared concern, (2) *surface both research and practice-based knowledge* related to that area, and then (3) collaboratively work to *synthesize and refine that knowledge* within some kind of artifact (e.g., a paper, a website, a brief, and a toolkit) that can inform practice in this area.

The context of the case we share is Hive NYC, a collective of over 70 informal learning organizations including museums, libraries, and other diverse non-profit educational organizations aimed at connecting youth with interest-driven, digital production-centered learning opportunities. Facilitated by the Mozilla Foundation, Hive NYC operates as a professional community focused on collaboratively creating new learning experiences and sharing best practices among its members. HRL exists as a research partner, aiming to both produce basic research related to key issues of concern to the network, such as youth interest-driven learning and organizational innovation within networks, as well as engage in applied research activities in these areas that help support the network to reach related goals.

Figure 1 provides an overview of the HRL applied research model. The central relationships are with both the members of the network (informal learning organizations) and the administrators (Hive "HQ") at the Mozilla Foundation. Within the model, HRL engages in ongoing formative knowledge sharing based on emerging findings from its basic research activities, providing presentations, blog posts, research briefs, and one-pagers based on practical areas of concern to the network. This formative knowledge about problems of educational practice leads into two other core activities: collaborative design experiments to test and refine new educational approaches and participatory knowledge building that addresses issues of practice, the latter being the focus of this case.

Figure 1. Model of research-practice partnership in Hive Research Lab.
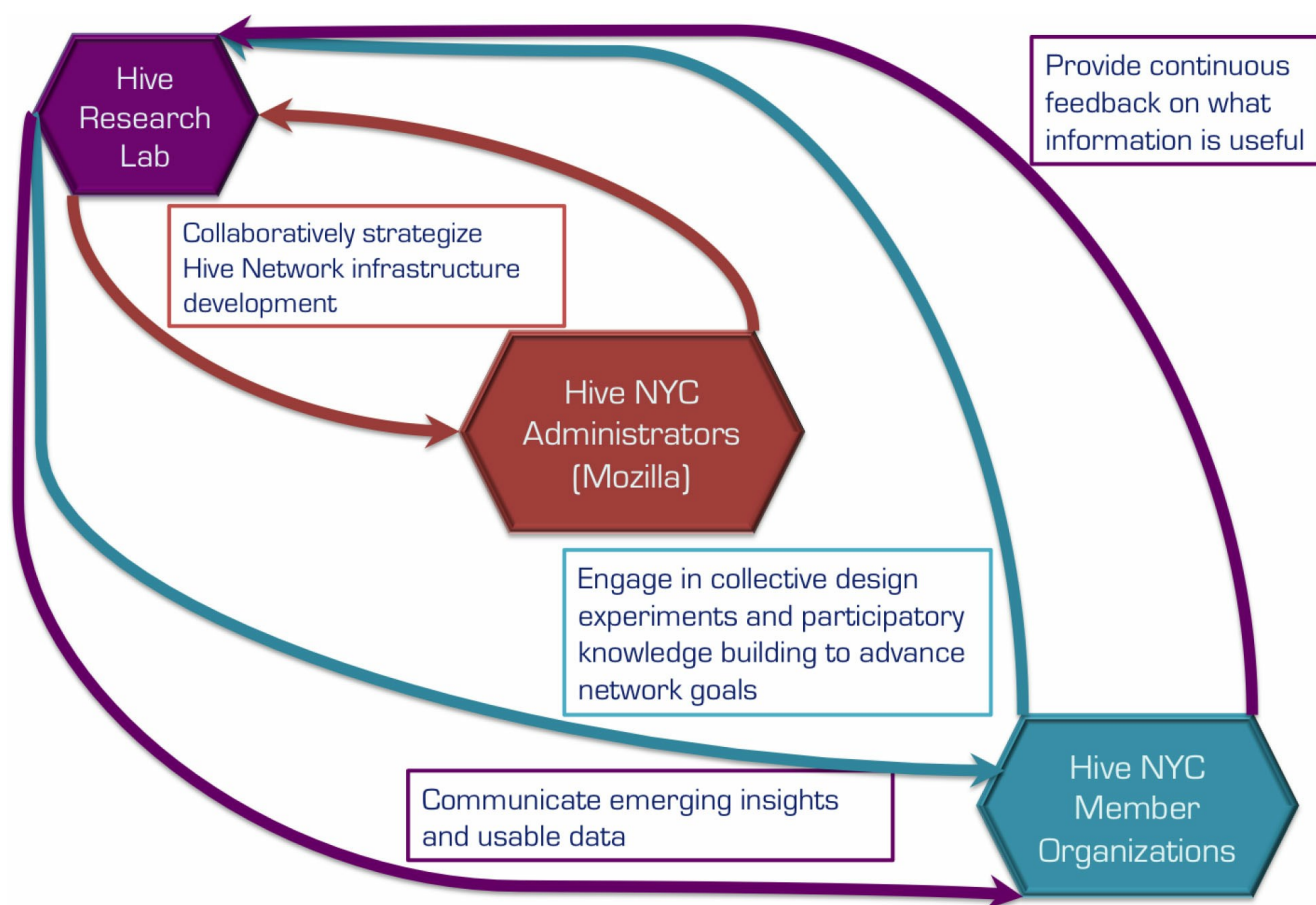
The form of participatory knowledge building we detail are *collaborative white papers (CWPs)*—reports addressing persistent problems of practice that emerge from basic research activities as well as through conversations and feedback from the practitioner community involved in an RPP. While most likely actively developed by a research team given that such teams often have an explicit role around knowledge production and representation, CWPs have substantive input and contributions from practitioners at each phase of their development from topic selection to drafting of central ideas to editing and final refinement. A goal of this approach is to create more relevant shared knowledge while also actively engaging and positioning all stakeholders as knowledge-producers and experts.

Steps and Techniques Associated With Participatory Knowledge Building

White papers and other forms of public reports can play an important role in advancing the education field through providing expert perspectives, summarizing extant research, providing new frames or ways of approaching problems, and offering recommendations on the level of policy and practice. In the example of participatory knowledge building we outline in this case, we build on this genre of writing, focusing on how it might serve to advance the priorities of an

RPP through opening up the knowledge-building process to key stakeholders within the context of the RPP, advancing a variety of RPP goals in the process.

In this section, we outline the practical steps involved in creating a CWP, discussing issues related to (1) topic emergence and selection, (2) how to leverage community contexts as spaces for knowledge building around an idea, (3) integration of basic research data, (4) synthesizing and creating an initial draft of the paper, and (5) engaging in community-based feedback and, finally, dissemination.

We ground what we share here in the process we used to develop two such papers within the context of the Hive NYC Learning Network.

Topic Emergence and Selection

The emergence of topics for CWPs is an organic one and linked to engaging in research-practice work that brings researchers into contact with emergent issues of practice, areas of "heat" and interest within the practitioner community and findings that come out of basic research activities. Generally, the emergence of a topic, or even the utility of a white paper, might only come at a stage where an RPP is more developed—once deep familiarity with the context of practice is established, sufficient social capital and trust has formed between researchers and practitioners, new problems are making themselves clear, and tacit knowledge has been developed on the part of the research team around what might constitute robust topic of interest within the RPP.

In the case of the two white papers developed by HRL, issues that eventually became topics of CWPs emerged from four sources:

- *Basic research activities* that surfaced particular problems facing practitioners;
- *Informal conversations with practitioners* where they voiced challenges and needs;
- *Community events* where Hive network administrators sought to hear about challenges that practitioners in the network were facing and collective issues they wanted to address;
- *Collaborative design activities*, called charrettes, that HRL facilitated as part of its RPP model that were focused on collectively designing solutions to persistent problems of practice.

As an example of how one of these contexts helped the research team identify a topic, at a large Hive NYC community meeting, members voiced challenges around knowledge management within the network—how to find out which organizations in the network had what expertise, how to accumulate lessons learned across experimental initiatives happening across

the network, and how to best circulate what was already known across a highly distributed network of actors. In informal conversations about these knowledge management issues that HRL had with Hive network administrators at Mozilla following the event, the idea of "working in the open," a distinctive approach rooted in open source culture that values transparently sharing work in progress (Santo, Ching, Peppler, & Hoadley, 2014, 2016), became a focal point within the conversation. This idea of "working in the open" was then used as a jumping off point for a co-design charrette meeting, facilitated by HRL, that focused on generating solutions to issues of knowledge management with Hive NYC. Over the course of the charrette, it became evident that further clarity and investigation around this idea of "working in the open," an idea which had largely been implicit in the network up until then, could add value to the larger conversation around knowledge management and circulation within the network. Once it was identified as a topic for a white paper, researchers from HRL conducted additional fieldwork, did retrospective analysis of existing relevant data and further engaged the community in the paper development process.

Description: During a co-design workshop, a collaborative etherpad is used to brainstorm ideas related to "working in the open," later taken up as a topic for a collaborative white paper.

In another example, basic research activities played a critical role in identifying a topic of shared concern. It came about during our team's research on how young people are supported as they engage in long-term, interest-driven pathways around technology and digital media making. We found that for most youth, time points when they were involved in afterschool programs offered by Hive member organizations were ones where they had robust access to a range of different types of social support around their interests, be they in the form of positive encouragement (emotional support), expertise around specific digital media–making techniques (knowledge-building support), or even just access to equipment that was necessary to pursue their interest (material support). As we continued to follow these youth though, we found that after these time-bound opportunities ended, youth experienced a sharp drop-off in social support for their interest—a phenomenon we called "post-program slump" (Ching, Santo, Hoadley, & Peppler, 2014), not dissimilar to summer reading slump. See Figure 2 for an illustration of the drop-off in one youth's social support.

Figure 2. Data displays of social support for a youth's digital media making both during and after participation in a Hive member program, showing "post-program slump" in support following the conclusion of a program.

During Hive Program

FREELYN | "FILMMAKING" | OCTOBER 2013 (DURING HIVE PROGRAM)

After Hive Program

FREELYN | "FILMMAKING" | DECEMBER 2013 (AFTER HIVE PROGRAM)

The identification of the phenomenon of "post-program slump" informed the identification of the topic of a CWP that focused on the youth development practice of "brokering"—connecting youth to future learning opportunities around an area of interest (Ching, Santo, Hoadley, & Peppler, 2015, 2016).

Leveraging Community Contexts for Knowledge Building

The process of knowledge building and contribution to a CWP is ideally shot through with interactions between researchers and practitioners that involve brainstorming, debate, deliberation, contributions from practitioner experience as well as from emergent research, and eventual general agreement on certain key themes or constructs. Creating spaces where these interactions are possible can involve either creating new structures (e.g., a working group), "one off" special meetings or events (e.g., a in-person roundtable or online "hang-out"), or, alternatively, leveraging existing social structures within a practice context, such as standing group meetings or calls that are organized by other institutional actors. Naturally, having the support and buy-in of actors who organize these spaces is critical to being able to engage a community through them.

Within these interactions, it is important to set context—sharing that there is a process underway to develop a set of ideas that will eventually be shared out with the larger community, sharing the roots and motivations for the project, and sharing how contributions will be used. All of this background narrative will help to establish understanding of often disparate sets of actors, each of whom might participate to different degrees over the course of a participatory knowledge-building process.

Community knowledge-building interactions can take many forms. In the context of an in-person meeting, chart paper, sticky notes, or online collaborative note-taking tools (e.g., google docs, etherpads) might be used as means for participants to respond to pre-developed "prompts" by the research team, or to emergent conceptual frameworks that aim to make sense of existing conversations. Such responses might then be used as a basis for larger conversations, reactions, and debate around the ideas and frameworks that are shared, approaches to solving relevant problems, or even questioning the premise of the prompts and frameworks themselves—something that can clarify and surface assumptions on the part of different stakeholders. These larger conversations and responses to prompts and frameworks can further inform both the focus and the substance of the CWP.

In the HRL project, one CWP, as mentioned, focused on the issue of brokering future learning opportunities for teens as a means to support engagement in interest-driven learning pathways around digital media. During an HRL co-design charrette event, Hive members responded to

prompts related to this idea, including ones that asked them to share what the idea of "youth pathways" meant to them, stories of youth who had, in their minds, successfully engaged in staying on long-term interest-driven pathways, ones that did not, and broader challenges to supporting pathways. Following the event, some participants voiced a desire to further engage in conversation and study around the idea of youth pathways, and HRL supported them to form an affinity group that began to meet monthly. Within the context of that affinity group, further definitions, ideation, and consensus around the idea of "brokering future learning opportunities" occurred. These conversations were eventually brought back out into more public contexts within the Hive NYC network such as community calls and meet-ups where Hive members further contributed and debated ideas around brokering such as fleshing out the types of learning opportunities they broker to young people, the enabling conditions that make brokering successful, effective brokering practices (see Figure 3) and other language that might be used to describe such practices (e.g., bridging, connecting, and linking). Engaging in participatory knowledge building across these varied community contexts (i.e., a design charrette, an ongoing working group, community calls, and meet-ups) meant that different sets of practitioners could contribute at various levels to the ideas being developed, and that ideas were well vetted across many actors in the RPP.

Figure 3. Participants at a Hive NYC community meeting use sticky notes to leave comments and feedback on an existing conceptual model of brokering learning opportunities that was linked to a community white paper.
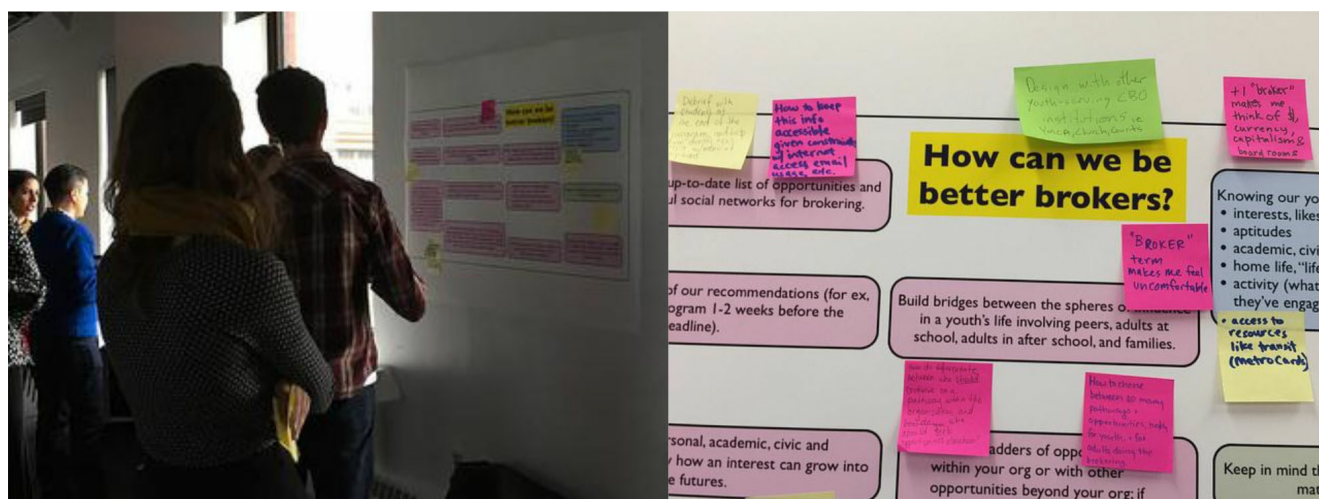
Integration of Research Data and Literature

Parallel to the process of enabling community contribution and knowledge building described above, the research team works to integrate both empirical findings from the RPP team's research and broader relevant literature that might help to ground and situate the contributions
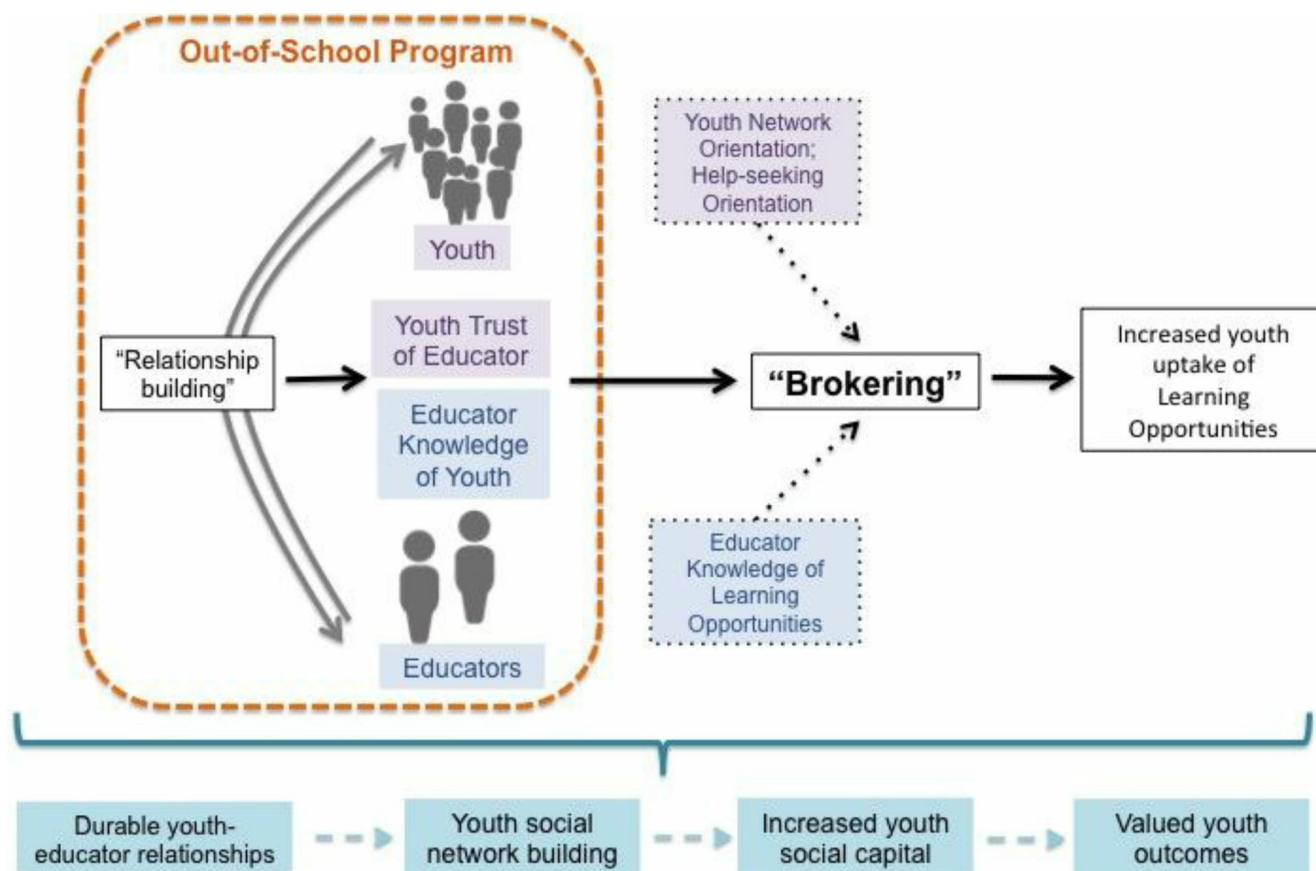
from the community.

In terms of the existing research activity of the RPP team, a given participatory knowledge-building process might call for additional short-term data collection to yield further insight into an issue or might call for conducting retrospective analysis of existing data that are now relevant given the particular focus of the case. Similarly, existing literature relating to the topic might be sought out as a means of framing and contextualizing the current conversation, as well as providing insights around how to deal with an issue given what's been learned to date.

Ideally, the integration of existing research data or literature should serve to triangulate, clarify, cast new light on, and/or bring to life issues that emerged within the context of community knowledge-building conversations. Existing literature might shed light on established best practices, offer relevant conceptual frameworks for understanding an issue, or offer views that might contrast with some assumptions that arose within community conversations. Data from basic research can help to ground key ideas and issues empirically, as well as provide additional context as to the nature and extent of certain phenomena.

In our white paper on brokering, the research team synthesized a conceptual model around the practice that drew off of fieldwork we had engaged in, contributions and perspectives from community members that came up during discussions of the issue, and from existing literature we were familiar with that pointed to important factors relating to this practice (see Figure 4).

Figure 4. A conceptual model of brokering that synthesized information from three sources: fieldwork data the research team had collected and analyzed, community conversations about the topic, and existing research literature.

Synthesis and Drafting

The process of taking the results of community conversations, existing research analyses, and broader existing literature is likely both the least straightforward and the least participatory part of the community white paper development. While it is beyond the scope of this case to discuss the nuts and bolts of paper writing generally, there are clear challenges and issues that must be grappled with when doing so within the context of a participatory knowledge building process. Most importantly, if the research team is the primary authors and stewards of the paper drafting process, then they are put in position of making sense of potentially conflicting perspectives, framing disparate contributions, and acting, to some degree, as a representative and steward of the ideas of others. Within that, the researchers often need to use their best judgment as to how to situate and share this knowledge and must be comfortable with simultaneously exercising editorial discretion and direction while honoring and integrating contributions from the community. Most important in this process is making clear how community contributions are being utilized and the nature of the editorial power at play in the

process.

Review, Feedback, and Dissemination

Following the process of synthesis and drafting, and as a potential corrective for new blind spots that can emerge through that process, the research team can seek to solicit community feedback and reviews of drafts of a paper through utilizing either collaborative editing tools like Google Docs (see Figure 5) or more traditional forms like track changes on documents. Ideally, actors who have been involved in the process up to this point are now able to concretely see how their ideas were instantiated within an artifact and its associated argument(s) but are also able to examine the whole of that artifact and argument and further weigh in on how it might be strengthened in terms of shifting frames, clarifying arguments, and giving certain issues more or less attention.

Figure 5. Collaborative document where Hive NYC members shared feedback on an initial draft of a participatory white paper.

This moment of feedback and review not only serves to continually "tune" the researchers to the ways that their collaborating practitioners think and strengthen the overall paper so that it might have greater impact but also serves as an indicator of how successfully the team has integrated and represented the ideas put forth in the process to date. High activity and interest in providing feedback can be seen as indicator of the relevance of the work and the "buy-in" of the practitioner audience to the process. Additionally, involvement of the practitioner collaborators at the end of a process that might span many months can remind them about the work in a way that makes it more likely they will share it with relevant parties once the paper is completed and shared more publicly.

Generally, the community feedback at this point in the process serves a somewhat similar function as the traditional process of peer review that exists for academic journals—it ensures that the work has relevance and importance, is clear and coherent, and helps to solve problems or provide useful perspectives for its audience.

Following the process of soliciting and integrating feedback, a key part of participatory knowledge building is that of dissemination and circulation of the final artifact(s) that were created. This involves sharing the results through existing communication channels such as community listservs, email newsletters, and targeted outreach to specific actors known to be interested in the topic. Within our projects, we engage in these activities and also set up explicit contexts when interested stakeholders, both those who have been involved in the knowledge-building process and those who were not, come together to talk about the knowledge that was produced. For one white paper, we convened a community call, open to any Hive community member, where issues raised in the paper were discussed, relevant ideas were debated, and additional resources and questions were generated. Such intentional moments of sense-making provided further opportunities for the research team to understand how the work was being received, and for practitioners to understand how the ideas were relevant to their contexts.

Goals and Projected Outcomes of Participatory Knowledge Building

In line with the broader ethos of RPPs, the activities involved in participatory knowledge building aim to strengthen joint work, mutualism, and the focus on problems of practice between educational researchers and practitioners in a variety of ways, including the following:

- *Develop shared language and orientation around key concepts* among stakeholders in an RPP. Often RPPs take place in large, distributed, and "messy" contexts such as school districts and organizational networks. A lack of shared language or orientation toward common "north stars" can make improvement a challenge. Participatory knowledge building, by virtue of the kind of deliberation and focus on a central problem of practice can help to "tune" distributed actors toward valued ideas and clarify and make more explicit the focus of joint work.

- *Foster a collective knowledge-building orientation and position practitioners as experts* in an RPP. Often, the process of knowledge production, including collecting data, analyzing, synthesizing, and representing ideas and findings, can be assumed to belong to only some actors in educational contexts, often researchers and evaluators. Positioning all actors as being relevant to knowledge building values a broad range of expertise provides avenues for voice and agency and ultimately provides knowledge that is more contextualized and

relevant.

- *Surface practitioner knowledge and expertise* around issues relevant to an RPP and link it to research findings and existing literature. Practitioners have critical perspectives on what works with regard to a given area of practice, and participatory knowledge building provides a context in which this expertise can be shared and integrated with the distinct kinds of knowledge that come from research-based activities and literature.

- Implicitly *renegotiate or iterate on the focus of joint work* in the RPP. A key challenge of RPPs is not just figuring out what to focus on together but also how to shift focus when appropriate. The process of participatory knowledge building can shed light on new areas, or more specific areas, that can be addressed within the context of joint work in an RPP. This can influence where researchers continue to focus their attention when it comes to basic research as well as collaborative design and interventionist work.

- *Produce "catalytic" knowledge that can help practitioners develop new initiatives and implement changes* relating to a problem of practice. The kinds of frameworks, findings, and recommendations that come out of a participatory knowledge-building process can catalyze new experiments on the part of practitioners, new initiatives the integrate emergent insights, and small changes in practice that reflect shifts in understanding that result from the knowledge production process.

Lessons Learned and Recommendations

The process of collaboratively building knowledge artifacts that integrate research findings with practice-based knowledge can be highly impactful, but complicated to enact effectively. We offer the following recommendations for those who are interested in utilizing such an approach:

- *Consider whether "enabling conditions" are present*—The process of participatory knowledge building can't happen arbitrarily or simply when one actor decides that it wants to do so. It requires that the research team has a deep enough understanding of the context to know what kinds of topics might be relevant to focus on in such a process, be trusted enough and have enough social capital to motivate participation, and understand what kinds of existing community and organizational routines might be utilized to support the process.

- *Triangulate topic selection through multiple sources*—in order for participatory knowledge building to be impactful, it must address something that is truly a shared area of concern for those involved in an educational context. In coming up with a topic, look across multiple sources—emergent research findings, existing research literature, ongoing conversations happening in the context of practitioner work, and so on—in order to triangulate the selection of the central topic to be addressed.

- *Engage in ongoing narration and context setting during the knowledge-building process*—in

order for many disparate actors within a context to meaningfully contribute to the process of knowledge building, it is helpful to continually share about where a topic came from, where you are in the process, and how results from contributions will eventually be utilized, synthesized, and shared.

- *Utilize existing community structures*—a key means of getting people involved in the process is to look to existing spaces where people in your context gather and discuss work. These can be standing meetings that happen with regularity, community-meet-ups and calls, or asynchronous contexts like community listservs and online forums.
- *Structure meaningful avenues for participation and contribution*—in order for those participating to be valued and effectively share expertise and knowledge related to a topic, use intentionally designed methods to surface what they know. Provide clear prompts within meetings, give condensed frameworks that people can respond to quickly, ask for specific examples or kinds of feedback on drafts, and seek out particular individuals who you know will be able to speak about an area they have expertise in. Providing these kinds of intentional avenues for participation will not only enable more effective contribution but also engender trust by showing that you have been thoughtful when asking for people's time and expertise.

Conclusion

Participatory knowledge building can be seen as both an "ends" and a "means" within educational contexts and RPPs. It is a means to produce knowledge in a more effective way than when researchers engage in such activities on their own. The resulting artifacts can capture best practices, provide explanatory frameworks, and provide rich examples of what pedagogy might look like in a way that is relevant to the everyday work of education. At the same time, the process can be seen as an end in itself, with the process being as important as the product. The process results in a number of valued outcomes in terms of setting and re-aligning agendas for joint work, positioning educators as experts, and providing a shared "north star" that everyone can focus on. We see participatory knowledge building as an important emergent methodology within RPPs in education, ones that index key values of this form of educational research and help to advance its central goals.

Acknowledgements

Exercises and Discussion Questions

1. What do you see as the strengths and weaknesses of engaging in knowledge production in a way that involves both educational researchers and practitioners?

2. What might prevent such a process from being pursued successfully? What conditions would need to be in place for this technique to be used?

3. How do RPPs represent a departure from the traditional relationships between educational researchers and other actors such as teachers, informal educators, administrators, and youth?

4. What kind of challenges can emerge in terms of validity and reliability of knowledge produced through participatory approaches such as those described in this case?

5. In what ways are the values of RPPs (joint work, mutuality, and a focus on persistent problems of practices) indexed in the participatory knowledge-building process outlined in this case? Could you imagine things that could have been done in the examples offered to more fully enact these values?

6. Pick an educational context you're familiar with and describe how you might imagine enacting participatory knowledge building within that context. Who would be involved? What problems might the process focus on, and why? What steps might be involved? What sort of opportunities does your context present that you might leverage?

Further Reading

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Web Resources

Research/Practice Collaboratory: http://researchandpractice.org/

Hive Research Lab website and blog: https://hiveresearchlab.org/

Design-based Implementation Research resource center: http://learndbir.org/

Carnegie Foundation for the Advancement of Teaching: http://www.carnegiefoundation.org/

National Center for Research in Policy and Practice: http://ncrpp.org/

W.T. Grant Foundation's Resource Page for Research-Practice Partnerships: http://rpp.wtgrantfoundation.org/

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