

Vignette: Tiered Level of Engagement for Teacher Partnerships

Partnership: University of California Irvine (UCI) OCEAN: UCI STEM Learning Lab and Santa Ana Unified School District (SAUSD) Partnership

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Historically, partnerships between researchers and practitioners have struggled with how to center the perspectives of practice partners. One role brokers play in these partnerships is to navigate how to position practitioners as decision-makers in the planning and design of RPP projects. To do this well, brokers must establish routines and expectations that intentionally shift power dynamics while creating flexibility to meet their needs and time constraints. In the partnership between the UCI STEM Learning Lab and Santa Ana Unified School District (SAUSD), we co-create curricular materials for Fraction Ball, a game where students play on the basketball court to support fraction and decimal learning (Figure 1).

Figure 1. Students playing Fraction Ball.



Teachers' are often considered advantageous partners in RPPs, however, there remains a persistent tension involving them in the work without exploiting their time. We recognized that teachers are often overloaded, and may be wary of participating in a partnership if it had unclear or high time commitments. To share decision-making power and make expectations explicit and flexible, the STEM Learning Lab team developed a three-tiered level of engagement approach to support practitioner engagement in research (Figure 2).

Figure 2. The below graphic was displayed in recruitment materials describing the three levels of engagement.



As seen in Figure 2, level one offers teachers to participate in monthly 90-minute co-design sessions. In level two, teachers can attend monthly co-design sessions and test materials or games we create with their students. Level three includes the addition of attending bi-weekly meetings to plan co-design sessions, with the option of facilitating monthly co-design sessions. This approach gives teachers the agency to participate how they wish and communicates an honorarium to acknowledge their contributions. To describe this approach, we give an example of how teachers contribute at level three and how this informs our monthly co-design meetings where we work toward a common goal of creating curricular materials that extend the Fraction Ball game.

We met with four level three teachers in a virtual bi-weekly meeting to get feedback on our plans for our next co-design session. In this meeting, the STEM Learning Lab team proposed a session format hosting a virtual gallery walk featuring lessons that teachers co-created to elicit feedback and generate revised lessons. While there was broad agreement about using this format, one teacher pointed out that because we design with educators who teach 4th through 7th grade, we needed to ensure that we had content for all levels of learners. As such, the teacher proposed that the gallery walk include activities that are adaptable for a range of abilities and grade-level standards and created additional lessons to be included. Their feedback expanded the lessons, providing a wider array of lessons that met the needs of more students and teachers.

In the monthly 90-minute co-design session that followed, we showcased the new lessons and adaptations in the gallery walk format. In the session, teachers from all levels virtually

navigated through each activity and provided feedback using digital sticky notes. We then broke into small group working sessions to refine and combine lessons and discuss potential sequences. Following the co-design session, the research team synthesized insights from the sticky notes and discussions and shared the findings and adjusted lessons with our level three teachers to begin planning for the next co-design session.

Integrating feedback from teachers across our three levels has improved both the curricular materials for Fraction Ball, as well as the RPP's processes for engaging with teachers and students. Teachers participating in the level three bi-weekly meetings improve our RPP's co-design process by highlighting the realities of teachers' experiences and suggesting ways in which we can adjust our plans to meet teachers' needs. Even the most subtle adjustments can improve the quality of our sessions together and illustrate to teachers how their feedback and expertise is applied into the co-design process.

While this vignette describes how teachers provide feedback in the planning of co-design sessions, our goal with this tiered approach is that as our partnership strengthens, level three teachers will continue learning about RPPs and become leaders – making decisions and facilitating co-design sessions. We believe that making these roles and expectations clear and flexible, in addition to building trust over time, can shift power to teachers without overloading teachers in the process. Additionally, this approach gives teachers flexibility of when and how they interact. While some teachers have participated in all level three meetings, other teachers have fluctuated between levels, based on their availability and capacity. This flexibility has been increasingly effective during the COVID-19 pandemic, where teachers can participate how they are able, without feeling pressure to participate in certain ways, or not be able to participate at all.

This vignette illustrates how brokers can use a tiered system of engagement to work with practitioners that:

- Allows them to decide how they want to participate and gives them the flexibility to move between levels,
- Makes expectations and routines for interactions between researchers and practitioners explicit,
- Gives practitioners the power to make decisions about research and design, and
- Builds trust between researchers and practitioners by asking for and applying practitioners' ideas into the co-design process.