

Teachers as Co-Designers: Forming Equitable Participation through the Lens of Relational Trust

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Abstract: Collaborative design is a research-practice partnership with partners having equal decision-making power. However, creating and sustaining equitable participation in codesign partnerships is a significant challenge for further research efforts. Thus, this exploratory research investigates a trajectory from imbalanced participation to an increasingly equitable and collaborative one in a three-year research-practice partnership that aimed to design and implement a STEM-integrated bioinformatics high-school curriculum through the lens of relational trust. We adapted a multidimensional relational trust framework and followed an inductive approach to analyze a corpus of interviews with two teachers who participated in the codesign sessions and three researchers who facilitated the curriculum implementation and codesign processes. Our results suggested the partners shared authority as they collaboratively redesigned the curriculum and, by further reframing the relational trust dimensions intersected with the shifts in partners' participation, offered a preliminary conceptualization of multidimensional and multifaceted relational trust for equitable participation in codesign partnerships.

Introduction and background

Collaborative design (codesign) is one way for teachers and researchers to act as design partners and share decision-making power to develop technologically-enhanced innovative learning experiences that promote transformational change in school and district practices (Penuel et al., 2007). Research has documented ways that sustainable and effective codesign can support teacher agency (Voogt et al., 2015) and pedagogic knowledge and practices (Penuel et al., 2011). However, it is challenging to develop and sustain a productive codesign partnership as its premise of bridging research and practice by creating equitable participation in decision-making processes depends on the extent to which such equitable participation is fostered through shared status and authority over decisions regarding the collaborative process and its outcomes (Farrell et al., 2019). At the same time, without having intentional efforts to cultivate equal positioning of the codesign partners in the design, implementation, and refinement of learning experiences, tensions can arise between the partners, leading to breaches in trust, even bringing the partnership to a halt (Denner et al., 2019; Ko, 2022).

A growing body of literature has been exploring codesign participation as a context of knowledge and capacity building for teachers and researchers (Goldman et al., 2022), examining the shifts towards more equitable relationships with the increasing agency of teachers over the course of collaborative partnerships (Gomoll et al., 2022; Ko, 2022). One pivotal element of supporting equitable relationships is developing and maintaining trust between stakeholders (Denner et al., 2019). However, even with its wide recognition, trust is predominantly described in general terms, leaving its multidimensionality and multifacetedness implicit (Lezotte et al., 2022). Thus, how partners develop and facilitate the conditions for enabling and sustaining trust in their relationships to foster equitable participation remains underexplored (Lezotte et al., 2022). In response, this exploratory study attempts to develop a preliminary understanding of relational trust, a multidimensional and multifaceted social process (Edwards-Groves et al., 2016; Edwards-Groves & Grootenboer, 2021), in a teacher-researcher partnership and its role in cultivating equitable participation of the partners. Here, equitable participation involves recognizing teachers and researchers as experts with different domain knowledge and skillset as well as learners who need to develop adaptive expertise to collaborate on equal footing (Ko et al., 2022).

This study builds on a longer study on developing a high-school STEM integrated biology curriculum on the topic of bioinformatics and professional development (PD) activities (e.g., Yoon et al., 2023). All participating teachers implemented the curriculum designed by researchers during the project's first three years. Following the third-year implementation, three teachers were selected to collaboratively re-design the curriculum with the researchers. Here, we aim to explore this shift in the role of teachers and researchers as they create a more equitable way of making design decisions about the curriculum and develop a preliminary understanding of the role of relational trust in this process. We followed an inductive approach to analyze a corpus of interviews with the teachers who participated in codesign sessions and the researchers that facilitated these processes. More specifically, this paper seeks to answer the following research questions: (RQ1) To what extent was equitable

codesign participation achieved, as reflected in teachers' and researchers' experiences? (RQ2) How was relational trust cultivated to support equitable codesign participation? Building on the need for infrastructures to support equitable participation of codesign partners (e.g., Tabak, 2022), this work could help fine-tune our understanding of how relational trust can be developed over time in a research-practice partnership that fosters more equitable roles and participation in collaborative design partnership. This work could also offer a preliminary conceptualization of relational trust's multifaceted and multidimensional nature in research-practice partnerships.

Forming equitable participation and relational trust

Researcher-practitioner collaborative designs seek to involve teachers and researchers as partners with equal roles in design decisions. Previous work has examined how partners develop new ways of thinking about design, pedagogy, and research to assume equal roles (Coburn & Russell, 2008; Farrell et al., 2019). Lack of trust is a primary issue that substantially limits the equal positioning of codesign partners (Denner et al., 2019). However, even with the recognized value of trust, its intricacies and dynamics with the equal positioning of teacher and researcher roles in research-practice partnerships remain underexplored (Edwards-Groves et al., 2016). Our work is situated in this problem space, as it explores the cultivation of trust in the shifts of partners' participation and roles.

Trust is a "psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (Rousseau et al., 1998, p. 395). Building on this definition, relational trust is trust situated in interpersonal relationships and develops through repeated social exchanges between different role groups (e.g., teachers and researchers) (Schneider et al., 2014). Here, we focused on relational trust by recognizing trust's interrelated and interdependent nature in social, political, and intellectual realms of codesign practices and relationships (Lezotte et al., 2022). Edwards-Groves and colleagues (2016, 2021) conceptualized relational trust as a multidimensional phenomenon situated at five dimensions of relationships: pragmatic (e.g., proposing practical, relevant, and achievable goals), interactional (e.g., sustaining safe spaces for collaboration), intersubjective (e.g., demonstrating collegiality through shared language), interpersonal (e.g., demonstrating empathy), and intellectual (e.g., conveying self-confidence and professional knowledge). However, their original framework focused on how middle leaders in school partnerships develop unilateral relational trust; thus, it was limited in offering a more comprehensive lens to examine mutuality or reciprocity in trust building. In this study, we adapted this multidimensional relational trust framework to guide our exploration by redefining the dimensions of relational trust to uncover how they interrelated with shifts in teachers' and researchers' roles towards a more equitable form of participation.

Methods

Context

This study is part of an ongoing NSF-funded research project that undertakes the design, implementation, and revisions of a STEM-integrated bioinformatics curriculum that is implemented in high school environmental science and biology courses. The curriculum had 20 lessons that aimed to guide students in a problem-based learning inquiry on the issues of air quality and asthma in urban environments. Throughout the curriculum unit, the students investigated problem scenarios by collecting local air quality data through a mobile app connected to carbon monoxide and particulate matter (PM 2.5) sensors, analyzing and visualizing these data, and they learned about bioinformatics research on asthma and air pollution as well as environmental and sociocultural factors impacting pollution level and asthma rates (e.g., Yoon et al., 2023). The curriculum was initially designed by researchers at a university and then implemented by three cohorts of teachers in three subsequent years. Professional development (PD) workshops for each teacher cohort were held in the summer prior to their classroom implementation during the school year. Researchers served as facilitators and supported the pre-implementation planning, classroom implementation, and after-implementation reflection phases. In the first year, five teachers implemented the curriculum; the year after, four new teachers and two cohort-1 teachers were involved in the project; and in the third year, six new teachers, four cohort-2 teachers, and one cohort-1 teacher taught the curriculum. At the end of the third year of implementation, one cohort-1 teacher with three years and two cohort-2 teachers with two years of curriculum implementation experience were invited to participate in the collaborative design sessions to redesign the curriculum. The initial purpose of the codesign sessions was to shorten the original curriculum since it was an issue posed by our participating teachers, particularly one of our codesigner-teacher, Will. Later, the scope of the sessions shifted as the codesigners redesigned most of the curriculum. Three codesign sessions were held in person with these three teachers and one research team member. Each lasted roughly three or three and a half hours.

Participants

We interviewed two teachers who participated in the codesign sessions and three research team members who facilitated teachers' pre-planning, implementation, and after-reflections. One of the researchers also participated in and facilitated the codesign sessions with teachers. Due to a schedule conflict, one codesigner-teacher, Cassie, did not participate in this research but will be interviewed at a later date. The participating teachers (both males), Jimmy and Will, taught biology and environmental science in two separate urban schools in PA and have 17 and 21 years of teaching experience, respectively. Will had a curriculum design certificate, while Jimmy did not have curriculum design experience.

The three researcher-participants (all females), Sarah, Jessica, and Jenny, designed the initial curriculum and coached the teachers throughout all the phases. Sarah, the PI of the project, is a learning science professor at a university in the Northeastern United States, and Jessica and Jenny were two learning sciences doctoral candidates in the same institution at the time. Even though all research team members interacted with and supported all participating teachers, Jessica worked more closely with Will, while Jenny worked more closely with Jimmy as their facilitator.

Data source and collection

We conducted five semi-structured interviews with the teachers ($n=2$) and researchers ($n=3$) four months after completing the codesign sessions. The interviews were conducted by the first author, who recently joined the research team and did not participate in the codesign sessions. Thus, she conducted the interviews as an external observer. The protocol included questions designed to elicit participants' experiences in the codesign sessions, shifts in their roles over the course of their partnership, their interrelational and interactional relationships, how and why they sustained their partnership over three years (e.g., why teachers came back for another year of implementation; why researchers wanted to work with them again), and what factors shaped teachers' decision to participate in codesign sessions and researchers' decisions of involving these three teachers. The interviews were held and recorded on Zoom, each of which took roughly 45 minutes. The zoom transcriptions were reviewed by the first author for accuracy and then used for the data analysis.

Analytical approach

We conducted a thematic analysis to discern the (1) participants' reflections on their codesign experiences and (2) relational trust behaviors they described as enacted in their interrelational and interactional relationships that shaped their roles and participation in the project. We adapted a multidimensional relational trust framework (Edwards-Groves et al., 2016; Edwards-Groves & Grootenboer, 2021) to guide our analysis in addressing RQ2. However, since the framework did not fully capture the meaning provided by the participants for this context, we used it as a measure of credibility, and following Saldaña's (2016) two-cycle coding, we redefined its dimensions and identified the associated behaviors. Moreover, unlike the original framework, we identified whether the behaviors were mutually exerted by teachers and researchers, i.e., teachers' trust in researchers and researchers' trust in teachers. For that, we open-coded the interview transcripts, followed by focused coding to determine what initial codes made more analytical sense based on our research goals and prior literature. Thematic analysis was conducted independently by the first author and one external researcher who was not involved in the researcher-teacher partnership for investigator triangulation (Patton, 2015), and through multiple short debriefings, the discrepancies were resolved between the two coders, and the findings were merged (Saldaña, 2016).

Findings

Here, we first describe to what extent equitable codesign participation was achieved, as reflected in teachers' and researchers' experiences in codesign sessions (RQ1). Then, we present the two main themes outlining how relational trust was cultivated over a three-year partnership of the teachers and researchers in a way that supports equitable codesign participation (RQ2).

RQ1. Shared power and authority through democratic and collaborative interactions

Throughout the collaborative design sessions, codesign partners came together in a dialogic space where they collectively re-designed the curriculum. Participants underlined three primary characteristics of these sessions: safe space for democratic dialogue, collaborative discussions, and shared authority and power. All participants described the sessions as a safe dialogic space where they felt comfortable sharing, discussing, and negotiating diverse challenges, needs, and practices and incorporating them into their collective design decisions. Reflecting on this aspect, Will, for example, noted that he expressed his concern about the previous curriculum comfortably, "I just said, there's so much in here... and it should be divided up into two different programs: the bio component

and environmental component...". His concern was then taken as an action item in the codesign sessions as the redesigned curriculum was considerably shorter, with 12 lessons, compared to the previous curriculum, with 20 lessons. Jimmy further commented on how their diverse styles contributed to the design by saying, "I think it worked well...we maybe had different styles. And so, we got like an interesting diversity of types of lessons."

These collective decisions were also enacted through collaborative discussions, where codesign partners were "...all putting ideas forward..." (Jimmy), "...building off each other's thoughts and ideas about what would make the curriculum work" (Jessica), "...listening to each other." (Will), posing and negotiating alternative perspectives, and collectively making the decisions. Jessica further described these collaborative dynamics, saying:

We collectively built this outline...we worked through the first lesson literally as a group. There'd be a conversation happening about the order, and then Cassie would briefly drop out of the conversation. And then she would come back in and be like, I just found a video... they each would do that...they totally took ownership of that...it was a really collaborative process.

Here, Cassie's behaviors suggest that the codesign team members were invested in producing a high-quality design, and they worked together to accomplish it. Jessica's description of this situation, i.e., "they totally took ownership of that," was interesting as it further suggested that team members shared authority and power in the decision-making processes. This was also reflected in the experiences of Jessica, Jimmy, and Will, as all of them repeatedly noted having an equal say on the decisions throughout the sessions. For example, Jessica referred to an instance where Jimmy shared a disagreement with Jessica by posing an alternative design idea:

I had started writing stuff on sticky notes and sticking them to the wall, Jimmy got up and... started moving them around, adding sticky notes of his own as we were talking... he didn't ask permission or anything like that... He just like got up, and it was like, no, no, I think they should go in this order...which is exactly what we wanted to have happened.

This excerpt indicates that Jimmy was comfortable with posing a problem in Jessica's idea and taking action to fix it by adding his sticky notes. However, the fact that "he didn't ask permission..." suggests that this was not a normative behavior of teacher-partners, and there was a shift in their power dynamics toward a more equitable form. Jimmy also echoed this shift by saying, "I felt like there were four people in the room that were equals that just kind of through our ideas."

RQ2. Cultivation of relational trust

Here, we describe two main themes regarding how relational trust was cultivated over the three-year partnership that developed and facilitated the conditions for equitable participation in the codesign sessions described earlier.

Theme 1. Commitment to supporting partners' diverse needs and interests

All participants emphasized the critical role partners' commitment to supporting each other's diverse needs and interests played in the sustainability and evolution of their partnership. For example, Will pointed out the research team's, particularly his facilitator, Jessica's, commitment to support his needs and interests as his primary rationale to sustain the partnership over multiple years, "Jessica was just perfect... She listened. She understood. the whole team is great; that's why I'm still here." Two relational trust dimensions were prominent pertaining to this theme: interpersonal and pragmatic. While demonstrating their commitment to supporting diverse needs and interests, the partners attended to the interpersonal dimension of trust by reciprocal reliability, demonstration of genuine caring and mutual personal regard, and the pragmatic dimension of trust by targeted activities and professional support and investment in research efforts.

Participants described reciprocal reliability as teachers and researchers being responsive and timely in communicating with each other and fulfilling their obligations. This was an influential criterion for researchers in their selection of the codesign partners; e.g., "... teachers' commitment was critical [in their selection] ...whether they are timely responsive to us... Because we're working as a whole group and there are a lot of time pressing preparations..." (Jenny). In her sentiments, Jenny depicted their partnership with teachers as teamwork and emphasized teachers' timely responsiveness in ensuring effective teamwork. Pointing out the other facet of this behavior, Sarah underlined the significance of the researchers' timely fulfillment of their obligation towards teachers, "Another thing that is very important to me is... paying our teachers fast enough." The second interpersonal relational trust behavior was demonstrating genuine caring, which was described as researchers putting effort into empathizing with teachers' experiences, struggles, and needs. For example, Will expressed his

appreciation for Jessica's constant efforts to acknowledge his needs and struggles, "She understood when I said, I'm just fried. I need to take a couple of days off of doing this because my kids... were overwhelmed with a lot of it... [She said] no problem." Similarly, Jessica emphasized the importance of acknowledging teachers' struggles and needs and offering support when needed, "I know that you are not given as much support as you need [in your institutions]. I've been there. I know what that's like, so how can I help you?" Here, she empathized with teachers' frustration by acknowledging their lack of support in their institutions and further demonstrated her caring by offering support to address this problem. Genuine care was often coupled with partners' willingness to go beyond their immediate obligations to support each other, bringing us to the final and most commonly reported interpersonal relational trust behavior: mutual personal regard. It was enacted in the partners' interrelational dynamics in the form of teachers and researchers being accessible and flexible for each other's needs. For example, Jimmy reflected on how Jenny, his facilitator, was always available and flexible to address his needs, "she has a schedule... But at the same time, she always kind of had like a drop everything.... she was willing to come in when she couldn't come...help out." Personal regard, as the participants further highlighted, was mutual as the teachers also made themselves available to support researchers' needs, e.g., "... she [Molly] was very... flexible, and try to be available most of the time" (Jenny). Demonstrating genuine caring and personal regard were interrelated with the pragmatic dimension of relational trust since they were often followed by targeted activities and professional support or investment in research efforts.

Targeted activities and professional support was described as researchers' investment in tailoring project-related activities and professional support to the teachers' needs, goals, and interests. For example, Will appreciated how Sarah adapted the expectations based on teachers' feedback by saying, "Sarah's really good... listens to us, and doesn't just pacify us if it can't be done. she's very good on the teacher side of it, listening and taking our feedback" (Will). Will further expressed his appreciation for the professional support the research team offered by reflecting on how having Jessica regularly in the classroom supported his teaching practices, which ultimately helped them develop a collaborative partnership with shared authority.

when I was delivering the information, Jessica was there... She noticed that I was struggling with something, and she chimed in... she didn't mind helping out... we're going over the formulas... and I said mean. She said, no, it's average. There's no mean. That's right... that relationship that we had was really good, that it was almost like a second teacher. It didn't make me feel like I was being judged.

Here, Will shared an incident where he used the wrong terminology in class, and Jessica corrected him. However, as he further posed, being corrected did not bother him as he did not feel judged; on the contrary, he enjoyed having Jessica as a second teacher in the class. This might suggest (1) the presence of a collaborative partnership between Jessica and Will, as he did not feel threatened to be corrected in the class, and (2) the shifts in the partners' roles, as Will shared his authority with Jessica as she gained the role of co-teacher.

The second pragmatic relational trust behavior for this theme was the investment in research efforts, and it was described as teachers' willing contributions to the research activities. The three researcher-participants emphasized this behavior as one of the main criteria for choosing the codesign partners. Jenny further explained this behavior's role in forming their codesign partnership, "We asked teachers to provide feedback. Some teachers would just give a line or two, but some teachers really put a lot of thought on it, and they give really in-depth feedback... an indicator for their commitment."

Theme 2. Affinity building with a respectful and supportive environment

All participants underlined affinity building and fostering a respective and supportive environment as the conditions for partners' autonomy building and taking ownership of the collaborative process and outcomes, thus, shifting the role and power distribution of the partnerships towards a more equitable form. For example, Jimmy discussed how researchers' expression of their confidence in and respect for his professional expertise fostered his autonomy during curriculum implementation and encouraged him to take ownership of this process:

I might have just modified entirely what that plan was. She [Jenny] was fine with that...What I did with the virtual year...I didn't really ask for permission. I felt that I had a lot of freedom from the team to kind of do what I wanted... I don't think I had a ton of failures, but at the same time, I was fine with the results either way. I don't think that I was explicitly told any of that, but it was definitely implied, like, 'You've been doing this for a while. We think you're great. You can keep doing what you want.' I think that that's been helpful throughout.

Jimmy's reflection on his experiences with the research team indicates that the team demonstrated their respect for and confidence in Jimmy's expertise by giving him the freedom and space to make changes in the curriculum and try different paths, fail, and try again. They also repeatedly vocalized their confidence in his abilities and appreciation for his efforts, which ultimately fostered his autonomy, as evident with his exclamation, "I didn't really ask for permission." The interview data further yielded three prominent relational trust dimensions pertaining to this theme: intersubjective, interpersonal, and intellectual. In their efforts to build affinity with a respectful and supportive environment, the partners attended to the intersubjective dimension of trust by identification through shared participation, the interpersonal dimension of trust by rapport building and demonstrating respect and appreciation, and the intellectual dimension of trust by recognition of expertise.

The participants described identification through shared participation as positioning teachers and researchers as members of an affinity with a shared goal. For example, emphasizing the shift in the research team's positioning of teachers in the partnership, Jenny noted, "as a whole team, we put a lot of effort really not just to consider our teacher participant as like research participant. It's not that anymore. They are part of our team." She further explained how their shared participation in the project fostered their sense of belonging:

They [teachers] all acknowledged that this is exploratory... Jimmy would also say it is a guinea pig that he is testing out the curriculum whether it works. And then he knows this is a process that we are all in together, teachers and researchers. Altogether, we are, as a team, trying to figure out what's the best way to teach this to our high school students. So that sense of belonging.

Here, referring to her conversation with Jimmy, Jenny reflected on how the exploratory nature of the project prompted partners to unite as a team to handle the ambiguity of their explorative experience better, and this joint exploration prompted their sense of belonging. The emphasis on the 'We' language, as exemplified in Jenny's reflection, was also effective in supporting partners' identification, which was echoed by Sarah's sentiments about their partnership with teachers, "One of the things that I do is a very intentional language which has to do with 'We' us all of us working together."

Interpersonal relational trust was the second dimension associated with affinity building, and two related behaviors were identified: rapport building and demonstrating respect and appreciation. Rapport building was described as teachers and researchers demonstrating personal interest in each other and spending social time together. For example, when asked how he and Jessica developed their relationship over time, Will posed Jessica's interest in his personal life, "...she never met my family, but every time we talked, she asked 'How's your wife? How are kids?'" and his personal updates, "...I had to take my son to an urgent care. He cut himself really bad...two weeks later, we had our next meeting, and she asked about him." All participants further pointed out spending social time as a prerequisite for rapport building. For example, Jessica reflected on how her relationship with a teacher in the project developed over time through their social interactions after the class sessions:

I was like helping Hallie to reset the chairs in her classroom for her next class... She would just talk, and I would talk, and... that developed a real rapport when we were in their classroom because you just got a chance to sort of talk to catch up and all of that. So, I definitely think that [I have] a much stronger relationship with Hallie.

The second interpersonal relational trust behavior was demonstrating respect and appreciation, which was described as researchers acknowledging and appreciating teachers' efforts, time, and accomplishments. For example, Will commented how the facilitators' encouragement and positive feedback eased his stress during the implementation process, "I was nervous... I don't think they [students] have done anything like that. They [facilitators] were like Your students are awesome. Just getting that feedback when things didn't go well..." Jimmy further underlined the role of positive feedback and encouragement in his motivation to invest in the project by saying, "...just getting like really positive feedback like you guys are really good teachers, or you're really doing a good job is sometimes really really helpful because they [teachers] might not be getting it from their administration...."

The final relational trust dimension associated with affinity building was the intellectual dimension, and one predominant associated behavior was the recognition of expertise, which was described as researchers demonstrating confidence in and respect for teachers' expertise and experiences as practitioners. One example quotation was shared earlier by Jimmy, where he discussed how researchers' confidence in and respect for his professional expertise fostered his autonomy.

Discussion

By investigating the formation of equitable participation through the lens of relational trust over multiple years of partnership, as reflected in the partners' experiences, this study is an exploratory attempt to contribute to the emerging body of research efforts to foster equitable participation in research-practice design partnerships (e.g., Gomoll et al., 2022; Ko, 2022) and the need for developing a systematic understanding of how trust is enacted, experienced and maintained in codesign partnerships (Lezotte et al., 2022).

Our first research question concerned the extent to which equitable participation was achieved in the codesign sessions, as reflected in teachers' and researchers' experiences, and the findings suggested that the participating partners shared authority and power as they collaboratively redesigned the curriculum through democratic and collaborative dialogues. However, the partners did not always interact with each other in ways that created and facilitated the conditions for shared authority and power since the initial partnership was not formed as a collaborative design partnership. Over the course of three-year curriculum implementations, a trajectory from imbalanced participation to an increasingly equitable and collaborative one was attained. This trajectory has often been examined during the codesign interactions of the partners (e.g., Kyza & Agesilaou, 2022), which are highly facilitated, and the roles of the partners are clearly defined (Matuk et al., 2016). Alternatively, this research positioned codesign interactions as the equitable and collaborative end of the trajectory attained over the course of teachers and researchers' three-year imbalanced partnership and building on the significant role of trust in the sustainability and evolution of partnerships (Denner et al., 2019), it used relational trust situated at the interpersonal interactions of the teachers and researchers as a lens to understand this trajectory.

Accordingly, our second research question concerned how relational trust was cultivated throughout a three-year partnership in ways that facilitated equitable participation during the codesign sessions. Our findings yielded two primary ways of cultivating relational trust for equitable participation: commitment to supporting partners' diverse needs and interests and affinity building with a respectful and supportive environment, and further identified and redefined five dimensions of relational trust (Edwards-Groves et al., 2016; Edwards-Groves & Grootenboer, 2021) and the associated behaviors to cultivate equitable participation. Other bodies of literature, such as school leadership and action research with community partners, have long valued and recognized the multidimensional and multifaceted trust in shaping the efficacy and sustainability of the partnerships (e.g., Edwards-Groves et al., 2016; Edwards-Groves & Grootenboer, 2021). However, the contextual and relational differences challenge the utilization of those theories in the researcher-teacher design context (e.g., Jardí et al., 2022). Moreover, the original relational trust framework focused on how middle leaders in school partnerships develop unilateral relational trust; thus, it was limited in offering a more comprehensive lens to examine mutuality or reciprocity in trust building, which is an increasingly demanded focus of research in design partnership literature (Goldman et al., 2022).

Similarly, many of the identified behaviors have already been documented to cultivate trust in partnerships, such as rapport (e.g., Slater & Gazeley, 2018) and personal regard (Bryk & Schneider, 2003). However, our findings offered contributions to the literature by (1) showcasing the interrelated, multilayered, and multifaceted nature of relational trust developed over time between the partners in an authentic setting and (2) offering a preliminary conceptualization of relational trust situated in the interpersonal dynamics of the partners. This conceptualization might further offer implications for creating infrastructures to support the equitable participation of codesign partners (e.g., Tabak, 2022).

Finally, the findings of this study should be interpreted with caution, mainly because of three reasons. First and foremost, it was a small exploratory study that focused on the organically evolved shifts in partners' roles over time and thus, the participant pool was limited to three teachers and three researchers, and one teacher-partner could not participate in the study because of a time conflict. We will continue our exploration by applying the same lenses to our other projects, as the same procedures were followed in those projects. Second, our only data source was the corpus of interviews with the partnering teachers and researchers. However, the findings suggested other potential data sources that could be used to explore the cultivation of relational trust (e.g., recordings of the after-implementation chats). Thus, we will further triangulate our findings with these resources.

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Acknowledgments

This material is based upon work supported by the National Science Foundation under Grant No. #1812738.