

Children's Play With Video Data as a Methodological Invitation

Jamie Vescio, Vanderbilt University, jamie.l.vescio@vanderbilt.edu

Abstract: This paper investigates young children's leveraging of play as an analytic tool when interpreting video data of themselves. Employing interaction analysis (Jordan & Henderson, 1995), I explore the epistemic and social frames that differing conversational spaces afforded for young children as they engaged in the playful act of watching their own participation in a kindergarten mathematics classroom. In doing so, I argue for the expansion of playful methodological contexts in order to better facilitate adults' learning from young children.

Introduction

In a focus group interview setting, four end-of-year first graders, Laura, Brooklynn, Quentin, and Max, gathered around my laptop to watch video of their mathematical participation as beginning-of-the-year kindergarteners. In the weeks prior, the four children had engaged in several of these video viewing sessions and had gradually grown accustomed to the practice; however, today's video featured their engagement with a popular elementary school commodity: shape magnets. In between their wiggles, smiles, and, at times, interpersonal disagreements, the four students conjectured about the nature of the shape magnet designs that they had once created as kindergarteners:

Laura: So we can like use our hands for people and act like our hands are hungry.
Brooklynn: Then this can be the bathroom, and then this can be like the porch.
Quentin: Is there a control room in your hotel? Where it control the elevators?
Max: Yeah it looks like Quentin made a ship.

These playful wonderings, though notable in their own right, are particularly noteworthy when situated against a backdrop of their prior viewing sessions. In fact, despite having previously watched this video with each child in a one-on-one interview setting, the focus group interview was the first time that I was hearing about hungry hands, hotel porches, and control rooms. As researchers, it may seem natural to characterize the instability of children's responses as inherently untrustworthy, given the seeming fleetingness of their interpretations across differing contexts. This is particularly true when conceptualizing the interview space in a more traditional, positivist sense, in which the interviewer attempts to extract 'objective facts.' However, Brooklynn, Laura, Max, and Quentin's playful new interpretations may not necessarily be a reflection of the untrustworthiness of *their* responses, but instead a reflection of the limits of *researchers'* methods when working with young children.

More broadly, the instability of the four students' responses across differing interview spaces suggests that our methods may be better suited to capture the dynamic nature of children's mathematical insights when they too are flexible, or even playful, in nature. While research has long pointed to play as a mechanism for children's learning (Vygotsky, 1978), little remains understood about the affordances of play from a *methodological* perspective. In other words, what might a lens of play allow us, as researchers, to notice about children that might otherwise go unrecognized? In the following analysis, I attend to this question through an exploration of two purposively sampled moments from the focus group interview with Brooklynn, Laura, Max, and Quentin. Leveraging interaction analysis (Jordan & Henderson, 1995), I examine how these four first graders negotiated the meaning of their prior mathematical actions as kindergarteners through their proposal of playful bids to one another. I contrast these bids and subsequent trajectories with their interpretations of the same video data, but during individual one-on-one interview sessions, with the goal of exploring the following research question: *How do elementary students leverage play when viewing video data of themselves in a focus group interview setting?*

Literature review

Play and mathematics

Research on the mathematical nature of children's play is practically ubiquitous throughout the literature, with scholars pointing to the various ways in which children both mathematize their play, as well as play with the mathematics that they have learned (Ginsburg, 2006). For example, play has been documented as facilitating children's experimentation with magnitude, pattern and shape, and enumeration (Ginsburg, 2006), supporting their aesthetically-driven conceptions of symmetry (Jasien & Horn, 2022), and encouraging their manipulation of mathematical tools (Laski et al., 2015).

However, the restrictive, high-stakes environment of K-12 schools often naively positions play in opposition to the more ‘serious’ business of ‘doing school’ resulting in, as Clements and Sarama (2017) contend, a false dichotomy between play and mathematics. Consequently, play has become increasingly scarce within formal K-12 schools (Bergen, 2009), thereby stifling children’s opportunities to direct their mathematical trajectories, as well as researchers’ understandings around the potential possibilities of play in more formal mathematical spaces. Moreover, like most data involving children, analyses of and understandings around children’s mathematical play in early childhood and informal contexts have largely centered on adults’ perceptions of their playful actions (O’Farrelly, 2021). Therefore, the potential affordances of play in K-12 mathematics settings, as articulated by children, remain under-investigated. In the analysis that follows, I attempt to address this gap by positioning young children as analysts of their mathematical play.

Research methodologies with young children

In considering what it might look like to position children as analysts, scholars in early childhood and elementary contexts have made a case for the disconnect between traditional research methods and young children’s ways of being. Prior work suggests that visual-based methodologies, such as video-cued ethnography or photo-elicitation interviews (Adair & Kurban, 2019; Clark-Ibáñez, 2004), may be one such avenue towards bringing children into the process of analysis. For instance, visual-stimulated interviews involving images can provide children with “tangible props [for] referring to situations or feelings” (Clark, 1999, p. 44). Such visual props can also help to address the inherent power dynamic between adult researchers and child interviewees, given that traditional interview tactics, such as questioning and probing, can position adult interviewers in an evaluative role (Clark-Ibáñez, 2004). Likewise, in their investigation of children’s photography, Luttrell (2016) suggests that visual research “is known to introduce topics that might otherwise be overlooked or poorly understood by ‘outsiders’ and can surface local knowledge—in this case, children’s knowledge” (p. 185).

While some interaction analysts and video-based researchers have made space for participants’ video interpretations, such methods have rarely been applied to mathematics education research with young children. Furthermore, the potential affordances of allowing young children the opportunity to watch video of themselves as a means towards better aligning with their ways of being, remain understudied. In what follows, I consider how Brooklynn, Laura, Max, and Quentin’s process of collectively interpreting video of themselves may have facilitated a particular way of being that children often inhabit—playfulness—by investigating how their readings of video data developed and functioned across differing interview settings. Specifically, and in line with Medina et al.’s (2022) call for methodologies in which play serves a function *within* the inquiry process, I explore how the act of watching video data of oneself, and in participation with others, invites an element of novelty, but also silliness and playfulness, for children that has been underleveraged from a methodological perspective. As Medina et al. (2022) write, “Pretending brings in a new set of expectations that bumps into old ones, collisions that make productive tensions especially relevant here—that uncover something of importance and enable a moment of critique, a need for renegotiation, or the emergence of a new local” (p. 99). In what follows, I take up this call by investigating how the facilitation of a playful methodological space for children, may also facilitate an opportunity for adults to renegotiate their original interpretations of data.

Theoretical framework

Sociocultural theory and play

Drawing from sociocultural perspectives, I conceptualize learning as a joint accomplishment between the individual and their social context, where learning leads to a change in participation and identity (Lave & Wenger, 1991). Play has long been positioned as a particular context for learning, in which children step outside of their immediate realities in order to achieve unrealized desires (Vygotsky, 1978). Although narrow readings of Vygotsky emphasize the role of play in supporting children to “grow into the intellectual lives of others” (p. 97), scholars have also explored the utility of play in expanding *adults’* abilities to better tap into the intellectual lives of children. For example, in describing play as the “work” of children, Paley (2004) writes, “In time we discovered that play was indeed work. First, there was the business of deciding who to be and who the others must be... Then there was the even bigger problem of getting others to listen to you and accept your point of view” (p. 2).

Through play, children appropriate cultural tools, build and challenge facets of their identities, position themselves as knowledgeable, and challenge power relations through the creation of alternative spaces (Wohlwend, 2018). While such notions have frequently been taken up in classroom literacy spaces, few studies have conceptualized what this might mean from a *methodological* perspective, particularly in the context of mathematics education research. Indeed, if children transform how they express themselves through play, and if such transformations reveal the cultural worlds that children desire (Yoon et al., 2023), then it is worth considering

the potential methodological utility of play for tapping into these worlds. In other words, how might we equip our methodological toolboxes to see “the communicative strengths, cognitive puzzles, and social desires that energize the intellectual and emotional lives of our children” (Genishi et al., 2011)?

Framing and play

In their analysis of one case student’s shifting explanations across differing interactional spaces, DeLiema et al. (2015) suggest that an individual’s unstable responses may be less about the organization of their knowledge structures, and more about the specific properties of the interactional contexts in which they participate. In this way, the fluidity of Brooklynn, Laura, Max, and Quentin’s changing responses across differing interview contexts may, in some part, be attributed to the differing social interactions and framings around what counts as relevant knowledge that each interview space afforded. Hammer et al. (2005) define framing as, “phenomenologically, a set of expectations an individual has about the situation in which she finds herself that affect what she notices and how she thinks to act” (p. 98). Drawing from this definition, I situate the following analysis using two dimensions of Hammer et al.’s conceptualization of framing: *social* and *epistemic*. Social frames, refer to *who* is expected to participate, as well as *how*. Members in an interactional encounter often reveal these expectations through the ways in which they orient their bodies and postures, organize their behaviors, position one another, and hold each other accountable to the accomplishment of particular activities (McDermott et al., 1978). For example, in a classroom context, a teacher may communicate that a child’s sharing time is over by shifting her gaze from the first child to another child, who may now be expected to speak (Erickson, 2004).

On the other hand, epistemic framing concerns aspects of knowing. Greeno (2009) conceptualizes epistemic framing as “the kind(s) of knowledge that are relevant to and expected to be constructed in order to succeed in the task” (p. 271). So, while social frames dictate *how* one is expected to participate in a particular space, epistemic frames concern *what* gets counted as valuable knowledge. This is not to say that the two are mutually exclusive. Rather, epistemic stances dictate how individuals organize their bodies towards others, just as cooperative stances dictate how individuals display their knowledge to one another (Goodwin, 2007). For example, Bishop’s (2012) analysis of discursive patterns in a middle school mathematics classroom illustrates how individuals take up discourse moves, such as an authoritarian voice and statements of inferiority and superiority, to position one another as more or less mathematically competent. In the following analysis, I take up social and epistemic frames in order to uncover not only *why*, epistemologically, Brooklynn, Laura, Max, and Quentin’s responses may have shifted across differing interview spaces, but also *how*, from a social perspective, the interactional space of the focus group setting facilitated their use of play as a communicative and analytic tool. While prior research points to the affordances of focus group settings for young children in terms of their overall comfort (Krueger & Casey, 2000), this analysis explores how a specific methodology—young children’s collective viewing of video data of *themselves*—invites children to bring a playful lens to the research space that may complicate, and even extend, our previous interpretations of data.

Methods

Study context

This analysis took place within the context of a larger research project investigating the integration of play in elementary mathematics classrooms. The study site was a public charter school in the southeastern United States, where approximately 64%, 31%, and 5% of students identified as Black, White, and Hispanic/Latino, respectively. Nearly half of the student population qualified for free-and-reduced lunch. As part of the longitudinal study, participating kindergarten and first-grade teachers engaged in professional development sessions over the course of two years, during which time they co-designed playful mathematics lessons alongside the research team. Playful units took on differing forms depending on the given mathematical content goal; however, most play-integrated lessons facilitated student choice, open-endedness, peer interaction, and tool manipulation.

Data sources

Sampling

I first turned to the project’s large corpus of 360 video data capturing students’ engagement with play-integrated tasks at small-group tables, which typically consisted of three to four students. Using purposive sampling strategies, (Lincoln & Guba, 1985), I then narrowed this initial corpus to ‘high-interest’ videos, which I defined as those that had already been heavily analyzed by the research team. This strategy allowed me to mine for ‘information-rich’ videos in order to potentially move beyond this adult gaze (Templeton & Velanki, 2022) and, instead, delineate what *children* might find consequential when watching these same data.

Next, and in line with case study logic, which acknowledges how phenomena of interest may unfold differently across differing social and cultural circumstances (Dyson & Genishi, 2005), I sought a range of student perspectives based on differing race-gender subjectivities, as well as mathematical positionings. Therefore, using my knowledge and prior observations of participating students from classroom visits over the course of two years, I narrowed the subset down to videos that reflected this potential range of student experiences. Second, I also took care to ensure that selected videos did, in fact, reflect the phenomenon of interest. Thus, I narrowed the video sample further to ensure that featured students had participated for the entirety of the project—first as kindergarteners and then as first graders. As a whole, these sampling strategies led to my final selection of a focal video for use in viewing sessions with the featured children. I refer to this video as the *Shape Magnets Video*.

Shape magnets video

At the time of filming, the four students in the *Shape Magnets Video*, Brooklynn, Laura, Max, and Quentin, were beginning-of-the-year kindergarteners who had opted to play at the shape magnets table as part of play-integrated geometry lesson. Shape magnets are two-dimensional squares and triangles, of various sizes that magnetically attach in order to form three-dimensional designs. For the majority of the 11:30 episode, the four students generally worked independently on their shape magnet designs. According to their verbal utterances *in* the video, Brooklynn, a Black girl, used large squares to craft a cube “house.” Laura, a White girl, employed a netting technique to form cubes, which were then stacked on top of one another to make a “farmhouse.” Max, a Latino boy, fit triangles together in both two-dimensional and three-dimensional configurations. Finally, Quentin, a Black boy, oscillated between various three-dimensional designs, describing his creation as a “race car” and, later a “bus.” Despite these individualized creations, the four students also spent a considerable amount of time collaborating, engaging in social talk, and even debating mathematical ideas (see Figure 1).

Figure 1
Counting the Levels of Shape Magnets



Left to right: Quentin, Max, Brooklynn, Laura

Data collection

At the time of the video viewing sessions, Brooklynn, Laura, Max, and Quentin, were now end-of-year first graders. Employing methods from visual research with children (Luttrell, 2016), I conducted both one-on-one and focus group video-elicited interviews, all of which were video-recorded. During the one-on-one interviews, I turned to strategies from photo-elicited interviews (Clark, 1999) in order to drive the direction of the conversations while watching the *Shape Magnets Video* together on my laptop. This meant giving children as much agency as possible over the viewing session by pausing for discussion based on *their* questions and noticings, as well as their affective cues, such as smiles, widened eyes, or frowns. Drawing from the affordances of audiencing for children’s sense of expertise in their worlds (Templeton, 2020), each child also selected their ‘favorite part,’ which they later presented in the focus group setting with all four children present. Within this group context, each child was invited to: (1) share why they had selected their respective clip from the *Shape Magnets Video*, thereby facilitating their agency over how they represented themselves to their peers, and (2) field questions from one another after viewing the clip together.

Data analysis

Clip selection

Given this analysis’ investigation of Brooklynn, Laura, Max, and Quentin’s playful video noticings of themselves across differing interactional interview spaces, I employed interaction analysis (Jordan & Henderson, 1995) to explore four video clips: two from the focus group interview and two from the one-on-one interviews. Beginning

with the focus group interview, I first identified “critical events” (Powell, Francisco, & Maher, 2003, p. 413), which I defined as explanations regarding the *Shape Magnets Video* that extended or differed from what the four students had previously articulated in their one-on-one interviews. Next, using Derry et al.’s (2010) criteria for selecting video for narrative power, I narrowed these critical events down to the two “most salient video chunks” (p. 12). I characterized these two chunks as salient due to their duration and, relatedly, to their featuring of conversational contributions from all four children. Taken together, this resulted in my selection of a 1:20-minute clip and a 2:50-minute clip of the children’s conversations around Brooklynn and Laura’s favorite parts, respectively. For comparative purposes, I next segmented the video clip from Brooklynn’s one-on-one interview, in which she discussed this same topic—her favorite part—and repeated the same process for Laura’s one-on-one-interview. The resulting two one-on-one interview chunks were 1:23 minutes and 0:50 minutes, respectively.

Multimodal transcription and analysis

I next transitioned to constructing multimodal transcripts for the two focus group and two one-on-one interview chunks. In an effort to construct a more child-centric transcript, I paid particular attention to the verbal behavior bias, as well as the left-to-right bias, when formatting these transcripts. In line with Ochs’ (1979) suggestion to bring nonverbal behaviors to the forefront, particularly for children, I first separated speakers by column. I listed nonverbal interactions first within each column and employed superscripts to indicate simultaneous nonverbal and verbal information. Using verticality within speaker columns, then, each row represented any change in utterance or behavior, regardless of the speaker. To address the left-to-right bias, I placed my speaker column to the right of each child’s column so that “transcription biases [did] not coincide with a priori cultural biases” (p. 51), which tend to frame children’s behaviors as subsequent to adults’ utterances.

When deciding on which modes to include in each transcript, I considered the lower-level actions that would provide me with the most information about the higher-level action of interest (Norris, 2004): children’s use of play to renegotiate the meaning of the video data. Collaborative viewing sessions with project-wide research team emphasized students’ verbal utterances to propose playful bids, as well as their verbal and nonverbal utterances to take up these bids, including their eye gaze, gestures, proxemics, and gross motor activity. Therefore, I included verbal actions, as well as these four nonverbal actions in the transcripts. Leveraging the concepts of *social frames* and *epistemic frames*, I worked through each transcript to next identify ‘bids’ that students made when proposing meaning over the video data. I conceptualized these bids as evidence of the epistemic frames, or aspects of knowledge and knowing, that the children viewed as relevant or expected within each interview context. Using these “ethnographic chunks” (Jordan & Henderson, 1995, p. 57) as analytic foci, I then documented the social frames that facilitated and followed from these bids, including how each bid was taken by others in the interview space. In what follows, I organize findings around these frames and their supporting evidence.

Findings

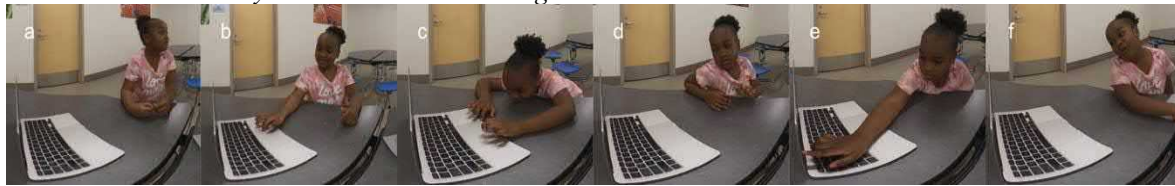
Children watching video of themselves in a one-on-one setting

Epistemic frame

Beginning with the epistemic frame of the one-on-one interviews, both Brooklynn and Laura’s favorite part selections centered on the *productive* nature of the children’s activity, as they both opted for segments that highlighted what each of the four children had created. For Brooklynn, this came at a point when each child had completed their designs. While making her selection, Brooklynn moved her finger along the laptop trackpad, clicked, and proclaimed, “I think this one. Like when [Quentin] said, ‘The truck...’ Like this part. Laura’s castle, and then the house, and then I don’t know what that is. Probably a zoo.” Brooklynn further justified her selection by exclaiming, “Because all the things are cool! But mine’s the coolest though. But actually Laura’s though because she have the tallest than all of ours. Probably she took ten thousand years to make that.”

Laura’s favorite part selection reflected this same theme of productivity, though her remarks also contained a speculative quality in relation to what her video segment might represent for her peers in the future focus group setting. Shifting her gaze back and forth between me and the current frame on the screen, she shared, “This part. I like it because like Max—well everybody’s done so like everybody could see the creations. So like they will be happy to see their creations that they made in kindergarten.” Thus, Laura’s inclusion of *everybody’s done*, in conjunction with Brooklynn’s use of *tallest* and *ten thousand years to make* suggest that, in the context of the one-on-one interview, ideas surrounding the children’s productivity were appropriate and worthy of sharing. That is, the one-on-one interview space seemed to facilitate an epistemic frame in which the *content* of Brooklynn and Laura’s explanations—their productivity—was a plausible justification for their selections.

Figure 2
Conversation on Brooklynn's Favorite Part During 1:1 Interview



Social frame

This epistemic frame operated alongside the social frame, in which Brooklynn, Laura, and I organized our bodies and behaviors, in ways that revealed the expectations of the interactional space. In both cases, I, the researcher, initiated the social frame by establishing the discourse patterns. This occurred first, in my invitation to select their favorite parts. Hearing this invitation, Brooklynn shifted her gaze and orientation from me (see Figure 2a) to the screen (see Figure 2b). After clicking the trackpad, she rested her chin on the table (see Figure 2c) as she searched for the correct characterization of Quentin's actions, eventually stating that he had said, "The truck." As she communicated the 'completion' of her selection process, she then sat back (see Figure 2d) and confirmed, "Yeah this part." As I shifted my own gaze from the laptop to Brooklynn, I further established the discourse pattern of 'researcher question followed by child response' by touching the trackpad and inquiring, "What happens in that part?" This time, Brooklynn leaned in and pointed to the screen (see Figure 2e) as she searched for a response: "Like this part. Laura's castle and then I don't know what that is." Signaling the completion of her response, she again sat back, and ended her conversational turn by speculating, "Probably a zoo" (see Figure 2f).

Like Brooklynn, Laura's behaviors also signaled her orientation to my initiated discourse patterns. In particular, her continuous shifts in eye gaze between me and the laptop, suggested a desire to ensure that her ideas were being taken up by me. For example, after inviting her to justify her favorite part selection, Laura began her turn by gazing at me as she shared, "Like the part that we were watching sort of. This part." She shifted her gaze back to the laptop and continued, "I like it because everybody's done." At the completion of this statement, she again gazed at me and proceeded: "So like everybody could see the creations." Laura then returned her gaze to the screen for a final time in this conversational turn, this time elaborating, "So like they will be happy to see their creations that they made in kindergarten." Taken together, both Brooklynn and Laura's responses signal the *epistemic frame* of productivity as an 'appropriate' response and a *social frame* of responding and orienting to the adult interviewer, highlighting the potential role of this one-on-one interview context in laying out both the content, as well as the form, of the children's verbal and nonverbal responses in this interactional space.

Children watching video of themselves in a focus group setting

Epistemic frame

I now transition to the epistemic and social frames of the focus group interview, during which time Brooklynn and Laura were invited to share their favorite parts with their peers. Here, the epistemic frame transitioned from one centered on individual productivity to one of collaborative pretend play. Interestingly, and in line with this shift, both Brooklynn and Laura employed the pronoun *our* when introducing their favorite parts to the group. Following my request to explain her favorite part to the group, for example, Brooklynn switched from naming each of the individual creations, as she had once done in the one-on-one interview, to instead reporting, "Because me and Laura was building our houses." Likewise, Laura justified her selection to the group in the following way: "Because I was telling everybody what room every room was so they know—so we can like use our hands for people and if we act like our hands are hungry, we can find the rooms that they go in and give them food."

As the interactional space unfolded, these pretend play scenarios persisted. For example, as Brooklynn discussed her favorite part, Max moved his body and gaze towards her (see Figure 3a) and curiously exclaimed, "What!?" Quentin also turned to Brooklynn and inquired, "So was you building a pool and she was building a

Figure 3
Conversation on Brooklynn's Favorite Part during Focus Group Interview



little house thing?” (see Figure 3b). Quentin probed further, as he pointed to the laptop and added, “Cause it look like that could go with it and make a house and a pool outside” (see Figure 3c). Brooklynn partially took up this playful invitation, as she gazed at Quentin and shared that was making a garage—a second shift from her initial one-on-one interview response. Quentin leveraged this new bid of Brooklynn’s by turning his gaze upward, as if to imagine her garage (see Figure 3d), and replying, “Oh. Now I understand.” Yet, Brooklynn continued by adding a new detail to her playful scenario—that she was making *Quentin’s* garage—as she pointed at the screen (see Figure 3e) and matter-of-factly shared, “Because I remember Quentin asking me, ‘Make me a garage.’” Quentin pursued this bid, even complimenting Brooklynn as he turned to her and asked, “So you’re making me my garage? I liked how you build my garage cause that was actually my garage she built for me. Cause I ask for a garage.” Towards the end of their exchange, Brooklynn outlined a final, desired-based detail by sitting up on her knees, reorienting to the laptop (see Figure 3f), and exclaiming, “I wish I was finding that [shape magnet] so then Quentin can press the button and then the thing can go down and then he can just drive the car inside the garage.”

Laura’s recounting of her favorite part unfolded similarly, with Brooklynn angling toward and pointing to the laptop (see Figure 4a) while introducing her own playful interpretation of Laura’s shape magnets: “I think Laura made a whole hotel so I think this can be the sign-in room, and this can be the other room—” Quentin interjected, as he swiftly elevated this bid by moving closer to the screen (see Figure 4b) to suggest, “The control room.” However, rather than continuing down the path of this suggestion, Brooklynn instead pointed to the laptop (see Figure 4c) and returned to her initial proposal: “No, the gym. And then this can be the bathroom, and then this can be like the porch where they can like—.” As she stood up to continue (see Figure 4d), Max moved in closer (see Figure 4e) and cried out, “What the!?” Quentin, again, inserted a connection to Brooklynn’s porch proposal, as he turned his gaze towards her (see Figure 4f) and asked, “You mean like a balcony?” I used to have a balcony.” The playful conversation continued; however, Quentin persisted with his ‘control room’ proposal. Orienting his body to me (see Figure 4g) he declared, “I have a question.” Following my verbal affirmation, he shifted his body and gaze to Laura (see Figure 4h): “Is it a control room in your hotel? The three other students turned their gaze to Quentin, who then sat up on the table, leaned in to the group (see Figure 4i), and clarified, “Where it control the elevators to the go to the first floor?” Brooklynn gazed at Laura (see Figure 4j), as if to discern how, or whether, Laura might respond. Although Laura did not leverage this specific bid, she sat back in her chair and brought both hands to her face (see Figure 4k) as she proposed, “I don’t think that’s a hotel. I think that’s a really tall-leveled house.” Yet, appeared to take this as an opportunity to further negotiate by inching closer to the laptop and pointing at the screen (see Figure 4l), as if to suggest that he had discovered the ‘once hidden’ location of the control room: “Wait. I know where the control place is. The control is right here.”

Social frame

Like the one-on-one interview, the epistemic frame also interacted with the social frame; however, here in this context, the four children organized their verbal and nonverbal activity in ways that suggested their accountability to *one another*, as opposed to just me—the adult researcher. This was most evident in Brooklynn, Laura, Max, and Quentin’s bodily orientations and verbal utterances towards each other, such as when Max shifted his gaze and body to Brooklynn as she shared her favorite part (see Figure 3a) or when Quentin positioned his visual attention up towards the ceiling, as if to imagine the garage that Brooklynn had once built for him (see Figure 3d). The same was true during the conversation around Laura’s favorite part. For example, in seeking to take up Brooklynn’s playful bid surrounding Laura’s porch, Quentin proposed that she had instead created a balcony, and turned his gaze towards Brooklynn accordingly (see Figure 4f). Likewise, Quentin oriented towards Laura when proposing the idea of a hotel control room (see Figure 4h). Thus, the social frame of sharing and asking questions to *each other* about their past actions as kindergarteners, though initiated by me, nonetheless shaped—and was

Figure 4
Conversation on Laura’s Favorite Part during Focus Group Interview



also shaped by—an epistemic frame in which playful proposals and negotiations of their prior actions in the video were a legitimate form of knowledge within this interactional space.

Discussion

Though seemingly subtle in nature, Brooklynn and Laura’s shifts towards more playful responses in the focus group interview setting invite us, as researchers, to reconceptualize the methods that we might ordinarily employ with young children. When operating in a one-on-one interview where they were more so accountable to me—the researcher—both Brooklynn and Laura elevated the productiveness of their activity. Yet, in the presence of each other, as well as Max and Quentin, their insights took on a pretend play quality, in which they proposed playful bids, reimagined and negotiated their past participation, and even expressed their desires in relation to the data. In other words, when the four children were invited to hold *each other* accountable, by fielding questions and watching video of themselves *together*, their chosen lens of analysis became one of play.

While a naïve reading might characterize the precarity and playfulness of their responses as frivolous, or even untrustworthy, we might, instead, imagine the ways in which the traditional methods that *we* employ with young children may, themselves, be revealing of only a partial story—the story that children *think* adults want to hear. In the case of young children, play is a medium that they regularly “choose and use to make sense of their worlds” (Wohlwend, 2018, p. 1). Therefore, our methodological approaches may also wish to take on a playful nature if we truly wish to learn from, and hold ourselves accountable to, children. During her own one-on-one interview, Laura perfectly encapsulated potential next methodological steps while giggling at a comment that Quentin had made in the video: “It’s weird and it’s a little funny.” Indeed, young children have rarely been elevated to a position of expertise in which they can be ‘trusted’ with interpreting data. As a result, the very act of watching video of oneself is itself a ‘little weird and funny.’ Moreover, by inviting children to not only interpret their own video data, but to watch video data of themselves *together*, opportunities arose for Brooklynn, Laura, Max, and Quentin to further negotiate their knowledge around the data and, as a result, liminal spaces emerged that signaled areas of instability with how these data had once been interpreted in alternative contexts.

Although I had not initially conceptualized the audiencing of favorite parts as ‘playful,’ this change in social frame seemed to provide ‘first-grade’ Brooklynn, Laura, Max, and Quentin with the permission that they needed in order to enter into a play world, as they watched the activity of ‘kindergarten’ Brooklynn, Laura, Max, and Quentin unfold. In their own investigation of playful methods, Medina et al. (2022), propose that such invitations allow participants to “shift, try out, and risk explorations of positions and perspectives—through the permission or protection of play” (p. 37). As researchers, entering into playful methodological worlds can feel risky, given that play may take us away from stable narratives. However, play also rewrote the story of Brooklynn, Laura, Max, and Quentin’s data to include co-constructed houses, garages built for one another, and hidden control rooms inside of hotels—pieces of their narrative that would have otherwise gone unheard.

References

- Adair, J. K., & Kurban, F. (2019). Video-cued ethnographic data collection as a tool toward participant voice. *Anthropology & Education Quarterly*, 50(3), 313–332.
- Bergen, D. (2009). Play as the learning medium for future scientists, mathematicians, and engineers. *American Journal of Play*, 1(4), 413–428.
- Bishop, J. P. (2012). “She’s always been the smart one. I’ve always been the dumb one”: Identities in the mathematics classroom. *Journal for Research in Mathematics Education*, 43(1), 34–74.
- Clark, C. D. (1999). The autodriver interview: A photographic viewfinder into children’s experience. *Visual Sociology*, 14(1), 39–50.
- Clark-Ibáñez, M. (2004). Framing the social world with photo-elicitation interviews. *American Behavioral Scientist*, 47(12), 1507–1527.
- Clements, D. H., & Sarama, J. (2017). Play, mathematics, and false dichotomies. *DREME Development and Research in Early Math Education*.
- DeLiema, D., Lee, V. R., Danish, J. A., Enyedy, N., & Brown, N. J. S. (2015). A microlatitudinal/microlongitudinal analysis of speech, gesture, and representation use in a student’s repeated scientific explanations of phase change. In A. A. DiSessa, M. Levin, & N. J. S. Brown (Eds.), *Knowledge and interaction a synthetic agenda for the learning sciences* (pp. 149–175). Routledge.
- Derry, S. J., Pea, R. D., Barron, B., Engle, R. A., Erickson, F., Goldman, R., Hall, R., Koschmann, T., Lemke, J. L., Sherin, M. G., & Sherin, B. L. (2010). Conducting video research in the learning sciences: Guidance on selection, analysis, technology, and ethics. *Journal of the Learning Sciences*, 19(1), 3–53.
- Dyson, A. H., & Genishi, C. (2005). *On the case: Approaches to language and literacy research*. Teachers College Press.

- Erickson, F. (2004). *Talk and social theory: Ecologies of speaking and listening in everyday life*. Polity Press.
- Genishi, C., Dyson, A. H., & Russo, L. (2011). Playful learning: Early education that makes sense to children. In B. S. Fennimore & A. L. Goodwin (Eds.), *Promoting social justice for young children: Advances in theory and research, implications for practice* (pp. 59–70). Springer Netherlands.
- Ginsburg, H. P. (2006). Mathematical play and playful mathematics: A guide for early education. In D. Singer, R. M. Golinkoff, & K. Hirsh-Pasek (Eds.), *Play = learning: How play motivates and enhances children's cognitive and social-emotional growth* (pp. 145–165). Oxford University Press.
- Goodwin, C. (2007). Participation, stance and affect in the organization of activities. *Discourse & Society*, 18(1), 53–73.
- Greeno, J. (2009). A theory bite on contextualizing, framing, and positioning: A companion to Son and Goldstone. *Cognition and Instruction*, 27(3), 269–275.
- Hammer, D., Elby, A., Scherr, R. E., & Redish, E. F. (2005). Resources, framing, and transfer. In J. Mestre (Ed.), *Transfer of learning from a modern multidisciplinary perspective* (pp. 89–120). *Information Age*.
- Jasien, L., & Horn, I. (2022). Fixing the crooked heart: How aesthetic practices support sense making in mathematical play. *Journal for Research in Mathematics Education*, 53(1), 41–64.
- Jordan, B., & Henderson, A. (1995). Interaction analysis: Foundations and practice. *Journal of the Learning Sciences*, 4(1), 39–103.
- Krueger, R. A., & Casey, M. A. (2000). *Focus groups: A practical guide for applied research* (3rd ed.). Sage.
- Laski, E. V., Jor'dan, J. R., Daoust, C., & Murray, A. K. (2015). What makes mathematics manipulatives effective? Lessons from cognitive science and montessori education. *Sage Open*, 5(2), 1–8.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications, Inc.
- Luttrell, W. (2016). Children framing childhoods and looking back. In J. Moss & B. Pini (Eds.), *Visual research methods in educational research* (pp. 172–188). Palgrave Macmillan UK. 10.1057/9781137447357_10
- McDermott, R. P., Gospodinoff, K., & Aron, J. (1978). *Criteria for an ethnographically adequate description of concerted activities and their contexts*. 24(3–4), 245–276.
- Medina, C. L., Perry, M., & Wohlwend, K. (2022). *Playful methods: Engaging the unexpected in literacy research*. Routledge.
- Norris, S. (2004). *Analyzing multimodal interaction: A methodological framework*. Routledge.
- Ochs, E. (1979). Transcription as theory. In B. B. Schieffelin & E. Ochs (Eds.), *Developmental pragmatics* (pp. 43–72). Academic Press.
- O'Farrelly, C. (2021). Bringing young children's voices into programme development, randomized controlled trials and other unlikely places. *Children & Society*, 35(1), 34–47.
- Paley, V. G. (2004). *A child's work: The importance of fantasy play*. The University of Chicago Press.
- Powell, A. B., Francisco, J. M., & Maher, C. A. (2003). An analytical model for studying the development of learners' mathematical ideas and reasoning using videotape data. *Journal of Mathematical Behavior*, 22, 405–435.
- Templeton, T. N. (2020). 'That street is taking us to home': Young children's photographs of public spaces. *Children's Geographies*, 18(1), 1–15.
- Templeton, T. N., & Vellanki, V. (2022). Decentering the adult gaze: Young children's photographs as provocations for place-making. *Language Arts*, 99(4), 227–239. <https://doi.org/10.58680/la202231740>
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Harvard University Press. 10.2307/j.ctvjf9vz4
- Wohlwend, K. E. (2018a). Play as the literacy of children: Imagining otherwise in contemporary childhoods. In D. E. Alvermann, N. J. Unrau, M. Sailors, & R. B. Ruddell (Eds.), *Theoretical models and processes of literacy* (pp. 1–20). Routledge.
- Yoon, H., Goodwin, A. L., & Genishi, C. (Eds.). (2023). *Reimagining diversity, equity, and justice in early childhood: Changing images of early childhood*. Routledge.

Acknowledgments

This work is supported by the National Science Foundation under Grant No. 2101356. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of NSF. The author would additionally like to thank Melissa Gresalfi, Amy Parks, Anita Wager, Madison Knowe, Candice Love, Karen Underwood, Jingyi Chen, Rachel Kasul, and Samuel Lu for their support of this paper, and the cooperating teachers and students for their generosity and contributions to this work, especially Brooklynn, Laura, Max, and Quentin.