

Understanding Children's Drawings as Sociomaterial Assemblages of Voice during Pandemic Times

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Volume 25, Number 1, 2023

Post-Pandemic Classroom Literacies
Littératies scolaires en post-pandémie

URI: <https://id.erudit.org/iderudit/1097999ar>
DOI: <https://doi.org/10.20360/langandlit29656>

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Publisher(s)

Language and Literacy Researchers of Canada

ISSN

1496-0974 (digital)

[Explore this journal](#)

Cite this article

Burke, A. (2023). Understanding Children's Drawings as Sociomaterial Assemblages of Voice during Pandemic Times. *Language and Literacy / Langue et littérature*, 25(1), 105–129. <https://doi.org/10.20360/langandlit29656>

Article abstract

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Understanding Children's Drawings as Sociomaterial Assemblages of Voice during Pandemic Times

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Abstract

During the COVID-19 pandemic, schools transitioned to online learning. Utilizing sociomaterial assemblages and visual methods alongside interviews to prompt children's voices, we collected drawings from primary students at two Eastern Canadian schools to achieve a multimodal understanding of children's online learning experiences. Younger children's drawings reflected the issues with technology and lack of socialization, while older children depicted their enjoyment with online learning with the agency afforded by learning from home. We found that pedagogical creativity and innovation were essential to successful online learning. This research demonstrates the efficacy of a sociomaterial perspective on children's drawings for eliciting children's agentic voices.

Keywords

children's drawings, children's voice, online learning, sociomaterial literacies

Introduction

While discussing the significant role online learning has played in maintaining children's education during the pandemic, this article examines children's drawings and their role in informing, explicitly or implicitly, about children's needs, expectations, and wishes during the pandemic. In particular, we see children's pandemic drawings as carriers of social and cultural scenarios and, thus as having the potential to convey children's state of mind and being, as well as the state of their environment, specifically their parents, teachers and peers.

This article discusses one aspect of the data of the AdVost project – “Socially Innovative Interventions to foster and to Advance Young children's Inclusion and Agency in Society through Voice and Story” namely, children's drawings. The beginning of the project coincided with the COVID-19 pandemic in March 2020. This placed the research project in an interesting light to understand the impact on children and teachers. The impact of COVID-19 has been varied and significant, with classroom and home learning experiences varying tremendously across the globe. In looking closely at global news feeds and even school newsletters, online learning during the pandemic is being framed through discourses of loss: lost learning, lost socialization, lost time. Prompts to remedy these issues are rarely accompanied by considerations that some parts of online learning may be worth holding onto or learning from. In the face of rapid and drastic changes, parents and teachers were able to adapt in creative and innovative ways to continue students' education, and their resourceful solutions enabled children to learn and even to prosper during the pandemic.

Throughout the two years of school visits, both online and in classrooms, the observations and interviews conducted for this research project focused on ways to enhance children's voices. Children created numerous multimodal artifacts; we chose to focus on the sociomateriality of children's drawings for this paper, to understand their perspective of schooling online and their lived literacy experiences at home. We were guided by the following research questions: How do children use artifacts to reflect on the places where they play, live and learn, both online and in person? How can a sociomaterial lens enrich our understanding of children's voice as rendered in drawings?

New ways of doing research, brought about by the pandemic, impacted our collaborations with teachers, with new surging power dynamics unveiling the teachers' deep professional expertise and ability to pivot as needed to address the literacy needs of young children in times of crisis. Teachers utilized innovative methods to connect with children and foster creative learning experiences, including blending physical, material crafts and lessons with online classroom discussion, games, activities and opportunities for children's voices to shine through show and share sessions. Through the children's drawings and interviews with the children and their teachers, we find the prevalent discourses of loss surrounding the pandemic to be unexpectedly replaced by narratives of resilience, creativity and new opportunities for learning and growth.

In the next section, we will describe the motivation of this paper, which is the potential for educators to develop deeper understandings about what we can learn from children's artistic renderings and responses to COVID-19 online learning experiences. This is followed by our literature review, which discusses how children's agency and voice can be empowered through sociomaterial objects, such as children's drawings, and how visual methods blend theoretical threads to provide a closer understanding of children's lived experiences as represented in drawings. We then describe the methodology of the study, identifying the study setting and sample, and our data collection and data analysis processes. Our findings are divided into three sections: online learning during the pandemic, the social lives of children, and technology skills. We conclude with a discussion of discourses of resilience in the face of the pandemic.

Motivation - Artistic Pandemic Responses

Children in Eastern Canada faced, and continue to face, increased stressors during the COVID-19 pandemic, including "school closures, the loss of recreational opportunities, family separation or confinement, disrupted routines and experiences and loss of family income" (UNICEF, 2020). Such stressors, alongside "food insecurity, parental stress and child abuse ... can become biologically embedded and negatively impact children's developing brains, immune systems and ability to thrive" (Kobor et al., 2020). Moving beyond the pandemic does not mean moving beyond the ramifications of these stressors. If anything, the pandemic has highlighted the vulnerability of Canada's children and the need for a more direct approach to build resilience in Canadian children.

Globally, children's mental health has come to the forefront during the COVID-19 pandemic; children experience "increased clinginess, fears, sleep disturbances, poor appetite, agitation, inattention, and separation disorders" (Beal, 2021). Boredom and anger are predominant feelings arising in children during the pandemic, negatively impacting

children’s mental health (Idoiaga et al., 2020). During the pandemic, “many children lost their sense of normalcy and could not enjoy what constitutes a healthy development. Social interactions were curbed—they could not meet friends or hug a grandparent, and they, too, had to deal with terrible loss. Those without continual digital access or devices missed school online; further to this, children in the most vulnerable situations missed out on eating that one healthy meal per day or having a safe space or trusted adult to share their anxieties with” (Schuurman, 2021). Learning how to manage negative feelings and “re-socialize,” rather than being impaired by them or allowing them to impact their peers, is essential to enhancing children’s well-being. Socialization occurs in part through artistic expression, as do many other activities by which children can foster positive mental health.

Motivated by the desire to partner with students and schools in reflecting on their pandemic experiences, through visual research methods, we have included children’s voices in a re-imagination of literacy practices and new possibilities of learning through artistic methods. In our research we worked alongside teachers, children and families, and prioritized children’s voices and agency, making children feel heard, secure, and motivated to share in their own learning through narrative drawing during a very difficult time.

Theoretical and Methodological Orientation

In the following sections, we introduce three bodies of literature and discuss their intersections, both with each other and with our research. Understanding and prioritizing children’s voices and agency comprises the backbone of our research, and examining children’s drawings through a sociomaterial lens weaves together our methodologies with our theoretical perspective. Finally, we describe the previous use of visual methods, and particularly children’s drawings, in education research in order to situate our study and provide context for our chosen data and research methods.

Children’s Agentic Voices

This paper prioritizes the well-being of children, and is informed by literature regarding children’s voice and agency. In particular, our research resounds Article 12 of the UNCRC (2009), which outlines children’s rights to agency and voice. Since the implementation of this article, researchers have studied the difficulties that come with translating the concepts of children’s agency and voice into practice and policy.

Voice is somewhat of a contested word, with Cook-Sather (2006) arguing that “‘voice’ signals having a legitimate perspective and opinion, being present and taking part, and/or having an active role.” Other scholars instead draw attention to the notion of voice that goes beyond verbal expressions and considers the emotional components and other nonverbal elements of communication and meaning making (Cassidy & Robinson, 2022; Thomson 2008). Messiou (2019) uses voice to refer “to students’ thoughts and emotions, as well as their actions for bringing about change.” Her work attempts to give emphasis to the multiplicity of students’ views, in contrast to the collectiveness of voice, and grapples with how diversity in voices can be adequately accommodated within a school setting while allowing students to feel supported. For this reason, she opts to use the term ‘voices’ rather than ‘voice.’ On the other hand, Robinson (2021) uses the term voice, referring to “...a

child's perspectives, opinions, thoughts and feelings. In addition to verbal language, 'voice' also includes, but is not limited to, written language, body language, silences, behaviour, actions, pauses in action, glances, movement and artistic expression." There are three key issues to consider when performing research relating to children's voice and agency: consultation versus participation, imbalanced power relations, and possibilities for transformation. As researchers working with children, these three key issues show the perspectives we must consider when empowering children's voice and agency.

Messiou (2019) emphasized the distinction between consultation and participation, drawing on Rudduck (2006). In this view, "consultation refers to talking with students about things that matter in school, whereas participation is about involving them in a school's work and development" (Messiou, 2019). While different from participation, consultation is an important step in the process, as these conversations can build habits of discussion between students and their teachers regarding learning in school. Robinson (2021) notes that communication through dialogue is "an attempt for all participants to be involved in the communication in a reciprocal way, leading to the development of shared understandings." Consultation allows teachers and students to embark "on dialogues in order to develop inclusive practices" (Messiou, 2019). This value sheds light on and places weight on traditionally hierarchical relationships, which can negatively affect how children interact with adults and express themselves, and attempts to recast this to encourage "the flow of more horizontal discourse" (Robinson & Taylor, 2007). However, active participation from the students is required to develop their agency. Part of recognizing children's agency is allowing them to be participating members of society, and, thus, political beings (Cassidy & Robinson, 2022).

The second issue is that power relations are unequal. As Robinson says, "We need to acknowledge that 'power inhabits all processes of social communication' and that forms of communicative power are not equally available to all" (2021). Researchers need to be considering this when determining methods of communication, as some groups have more access than others. Additionally, researchers must balance allowing children to have a voice while also acknowledging that they are not able to fully consent in the ways that adults are able to consent (Heydon et al., 2016). Thus, researchers must be knowledgeable about both children and research methods in order to effectively and ethically work with them and select appropriate methodologies (Heydon et al., 2016; Robinson, 2021).

The third issue is possibilities for transformations. This issue is concerned with "the need for listening to children's voice to extend beyond a tokenistic attempt to provide opportunities for children to voice their opinions" (Robinson, 2021). In order to address this, researchers must agree to take children's voices seriously, "with those listening being prepared for children to have 'influence' (Lundy 2007: 938-9) and for changes or transformations to be made as an outcome of the views expressed by children" (Robinson, 2021). We must recognize the capacity of children to enact change (Cassidy & Robinson, 2022). Thus, through research that applies effective consultations and participation, and ethical research methods, children's voices and agency can be elevated to achieve transformative changes, which may also contribute to social cohesion within schools and to children's well-being.

Sociomateriality

There are numerous ways for children to express their thoughts, as previously described; their voice can be oral, written, drawn, or even created (Robinson, 2021). Assemblages of voice and voice expressions pre-, during and post-pandemic shift and grow as the students learn and adapt (Ellefson & Lenters, 2022). Literacy is thus an inalienable part of understanding voice; it is the means by which we understand and form connections with each other, the world and ourselves (Ellefson & Lenters, 2022). Literacy events, which exist as a process of learning rather than a moment in time, “reconsider events to be *what is produced* through moments pregnant with affective possibilities that often elude perception” (Ellefson & Lenters, 2022). It is the literacy events during COVID-19, children’s experiences of learning online, that we examine, at the intersection of verbal and material assemblages.

Multimodality and sociomateriality are two different ways of conceptualizing material’s relationships to other things. On the one hand, multimodality is “...a view of text beyond the verbal, which means that other modes such as images or sounds are resources that can be ‘read’ and interpreted” (Lackovic & Popova, 2021). In contrast, “Sociomateriality calls for a greater consideration of matter, things, environments and spaces to understand teaching-learning acts as types of embodied and material performances. The material and social interact to create sociomaterial assemblages, units that make meanings through the interactions between their social and material parts, observed as inseparable and entwined wholes” (Lackovic & Popova, 2021). Sociomateriality, a fusion of concepts, brings into relationship the social and the material (Acton, 2017). Taking a “more-than-human” view of the world (Fenwick, 2015), sociomateriality asserts that people, places and objects “only exist in relation to each other” (Orlikowski & Scott, 2008).

Lackovic and Popova (2021) note that the material properties of architecture and design of any environment are deliberate choices, and whether intentional or not they “reinforce, frame, direct and afford social action and interaction” (Lackovic & Popova, 2021). Similarly, Acton (2017) examines school spaces as they connect to the students and teachers who inhabit them, identifying the key role of place in learning. Mulcahy (2013) further examines sociomateriality in the context of learning, examining how social, textual and material practices influence knowledge transfer.

Sociomateriality rises from research devoted to bringing materials back to the forefront of learning and practice, where they have faded to the background (Fenwick, 2015), combating “a general tendency to grossly underestimate materials as mere instruments to advance educational performance” (Fenwick, 2015). A sociomaterial perspective highlights the patterns and unpredictability of educational materials, and contributes to uncovering the power relations in learning, as well as intercultural learning and inclusive learning challenges (Fenwick, 2015). Additionally, sociomateriality can also point to “affirmative ways to intervene, disturb or amplify these webs” (Fenwick, 2015). Finally, sociomateriality reveals how objects become a mechanism “for sociocultural and symbolic transmission of ideologies, mythologies, and core value orientations in societies” (Lackovic & Popova, 2021).

Assemblages are groups of things that make their meaning from the way in which their constituent parts interact with one another (DeLanda, 2006). Assemblages embrace dynamism and fluidity, as each part can be arranged in differing ways (Baroutsis, 2020). Fenwick et al. (2011) argue that teaching and learning are tied to their processes, and are thus assemblages; Bennett (2010) further suggests that assemblages have agency that shapes discourse and reality in everyday life.

The current research of sociomateriality in education, as described above, indicates that schools represent social situations, and class learning cannot be separated from the social and material situation of the classroom. Class materials, understood in their social context, are sociomaterial assemblages that can be studied to uncover relationships, power dynamics, culture, and more. This provides a compelling avenue of study when considering the social situation when children are learning online within the context of their homes and availing of household materials to convey their contextual learning and understanding.

Visual Methods

Sociomateriality and visual research methods go hand-in-hand; art and crafts are key subjects of sociomaterial study. As Kumpulainen (2016) explains, “Visual methods provide possibilities for researchers and educators to understand children’s voices.” Visual methods allow children to use images and language to discuss their lives, and thus represent their worldview and words using additional communication forms other than words (Rose, 2016).

Visual ethnography is a method by which to study visual artifacts, which can be employed by both researchers and children, as they reflect on their creations (Kumpulainen 2016; Pink, 2007). In this perspective, voice is complicated, existing not as an objective quality or state of mind, but existing only within interactions between an individual and the collective within a sociomaterial environment. Voices are influenced and constrained by the values and rules of the community, as well as by the specific participating individuals, and by whatever resources are available to participants.

The use of images in research has a long history (Rose, 2016). In all forms of visual research methods, whether they involve videos, photos or drawings, Rose emphasizes that the researcher should “take images seriously” (2016), consider the social effects of the images, and consider their own ways of looking at the images, and how it might differ from what was intended by the photographer/artist.

Heydon et al. (2016) point out that “[t]he meaning of text is never singular, nor is it produced in a vacuum.” They look at the work of Rose (2016), who “describes three sites of making meaning from text—the site of text production, the site of the text itself, and the site of viewing/reading—and states that researchers must give attention to each of these sites when trying to interpret text or understand its interpretation” (Heydon et al., 2016). In looking at Rose’s work, we propose that, although teachers must give attention to these sites, reviewing the text must be multi-voiced, taking into account not only the researcher’s interpretations, but also those of teachers and, most importantly, the students themselves. Kumpulainen’s research (2016) points to this complexity when looking for methods to reveal children’s voices. Specifically, the issues with sociomaterial objects and how

children interact with them. She considers cameras as an example: “For some children, cameras have been more than just documentation tools; cameras have become part of their play activities and experiences. As our findings imply, children’s visually mediated voices are very much about creative problem-solving rather than static, simplistic communication of fixed meanings and understandings.” Visual methodologies need to understand and interact with not only the visual artifact that results from research, but also “the story behind the artifact and the creative processes mediated by cultural, social, and material contexts. Here, children’s visual documentation and narration illuminate the aesthetic, creative dimensions of children’s voices in sociocultural contexts.”

In order to gain a full picture of children’s visual documentation of their online learning experiences, we utilize children’s drawings, along with observation and interviews.

Children’s Drawings

Drawing is both a noun, a picture someone has drawn, and a verb, the act of drawing that thing (Sunday, 2018). Children’s drawings are important for both the agency of children, in creating a piece of artwork, and children’s voice, enabling them to express feelings or emotions that may be difficult for them to verbalize (Moula et al., 2021). Drawing can also help children to observe things they might never have noticed otherwise (Sunday, 2018). From an educator’s or parent’s perspective, drawings can provide insight into children’s complex emotions and personalities while they are quite young (Maxwell, 2015), and highlight what children find enjoyable or important (Ahmad, 2018). As demonstrated by Freud, through his use of drawings in psychoanalysis, children’s drawings enable us to gain insight into their mental health and emotional state, including what they like and dislike about different topics (Ahmad, 2018). Drawings can elicit deep, subconscious aspects of knowing that cannot be drawn out in conversation (Maxwell, 2015; Moula et al., 2021).

The materiality of drawings, in combination with other methods, allows for rich and varied analysis of complex aspects of childhood, such as relationships to family, school, and their wider community and culture (Beausoleil & Petherick, 2015). In consideration of children’s home settings and online schooling, children’s drawings can illustrate the quality of their relationships (Harrison et al., 2007); drawings exist in social spaces, and, especially when elicited in a research setting, often involve their relationships to classmates and teachers (Purkarthofer, 2017). Cultural differences can also be observed in drawings, as children will tend to draw what they are familiar with in the way they have been taught to perceive it (Ahmad, 2018).

Drawing is beneficial to children of many different ages. It forms one of the first steps of communication, even prior to language acquisition (Ahmad, 2018). Young children use drawing to understand the real world by presenting, digesting and synthesizing various phenomena; drawings thus form the scaffolding for early learning (Harrison et al., 2007; Sunday, 2018). In drawings, sociomaterial objects may be shared by children to show such learning (Rose, 2016). Various scholars have suggested that the best time at which to study children’s drawings is with children ages 5-11, who have the dexterity to depict their

attitudes and needs in both visual and oral form, but continue to enjoy, and are encouraged to enjoy, drawing (Harrison et al., 2007; Koppitz, 1968; Maxwell, 2015). This demographic is the focus of our research study.

Drawings have numerous benefits as research data. The open-ended form allows for the freedom of expression and self-determination not attainable through interviews or surveys with children (Ahmad, 2018; Maxwell, 2015). However, drawings should be used in combination with other methods, such as interviews, as children's interpretations of their drawings are incredibly useful, and in fact vital, to any attempt to analyze children's drawings (Maxwell, 2015; Mortimore, 1993). Previous studies have employed a variety of creative methods to collect and analyze children's drawings, which have enabled scholars to reach profound conclusions about children through their drawings.

Harrison et al. (2007), seeking to understand teacher-student relationships from the student's perspective, conducted a 30-minute interview with each student, discussing their feelings about themselves, their school and their teachers, before requesting that the student draw a picture of themselves and their teacher at school. Moula et al. (2021) first asked children to draw pictures of their "happy places," and then facilitated a discussion about the concept of well-being. They used this order, with drawing preceding discussion, so as not to interfere with subconscious or unexpected ideas that might manifest in the drawings. Beausoleil and Petherick (2015) also employed this methodology to determine children's perspectives on health and obesity in Newfoundland, Canada; they found that children's opinions were complex, incorporating experience and observations with health tenets they had heard or been taught. Ward (2018) performed an even more vigorous methodology, which adhered to sociomaterial perspectives with the collecting of drawings, photographs, visual mapping and surveys in addition to facilitating discussion with the students about their ideal playspaces.

Clearly, the literature supports the use of children's drawings as sociomaterial objects that can be studied in school settings to promote children's voice and agency, and examine their experiences and relationships. We now turn, then, to how these concepts have been applied in our methodology.

Methodology - Drawing Online Learning

For this study, teachers invited their students to create drawings of what their personal experience of learning from home entailed, using a template of a computer screen. In line with previous research recommendations, we employed visual research methods, utilizing both positive and negative prompts, as well as student and teacher interviews; furthermore, we involved children as co-participatory researchers (Clark, 2010). Key to our ethical methodology is the building of relationships over time – ensuring that we are sharing information about ourselves before requesting that the students and teachers share with us (Groundwater-Smith & Mockler, 2007). In September 2020, with ethics approvals in place, the author initially met with teachers and children in two classrooms and explained what the study was about and asked if they would like to help by sharing their ideas and drawings. The author supplied crayons, paper, glue and art supplies. With the teacher present, she explained to the children what the research study entailed, while the children

made crafts. She also shared photos of her as a child camping with her parents and objects such as a souvenir doll from Denmark given to her by her Aunt and Uncle. Each child had the opportunity to hold the doll and to ask questions about the pictures from her life, as she shared stories about them in the dialogue circle.

Following this recruitment visit, two data collections that utilized visual research methods took place during the pandemic. First, primary students were invited to draw pictures either about what they liked about learning online or what they missed about being in school within the given computer screen templates. Children aged five to seven completed these drawings on their return to school after the first lockdown in 2020. For this first data collection, the researcher was present in the classroom while the children were creating the drawings and spoke to the children while they were being composed. The teacher transcribed what the drawing was about once the child completed the drawing and brought it to her desk. During this time the researcher circled the classroom speaking with children one-on-one. The teacher was interviewed about the challenges and successes of teaching in the online environment with her kindergarten class. She also participated in a focus group discussion with the teacher inquiry group of 8 teachers across two schools.

The second data collection took place in a grade three/four split classroom during the lockdown in January 2021. The researcher conducted an online google meet interview with the children set up by the classroom teacher asking about their online learning experiences during this period. The researcher, when able to access the school, met with the teacher in the classroom and with the children to collect their drawings and to have a discussion. Once the drawings were analyzed and looked at by the research team, students were individually interviewed about their drawings. We asked questions about family composition, experiences of learning at home, what they shared online and why it was impactful as to what they missed about being physically in school or liked about online learning. The teacher was also interviewed about the process of pivoting to an online learning environment and the pedagogical practices and types of materials in which children's learning was engaged online. We were interested in finding out what the students and teachers experienced through online learning. We chose to use children's drawings as we felt that the drawings elicited the children's opinions and feelings, revealing their voices through what they drew and what they did not include in their drawings. The analysis portion of the study investigated what the students expressed through their drawings and interviews regarding their online learning experience, which referenced both the online classroom and included sociomaterial references as well as both teachers' thoughts about the drawings and online teaching experiences. Considerations for the analysis of the children's drawings included the effect online learning had on children's relationships with their peers and their teacher, the environment in which the students were learning, and the pedagogical practices and learning materials employed, as well as what all parties considered to be successful and unsuccessful about online learning.

Context of the Study

The primary classroom and the grade 3/4 classroom were located in two different schools. These two schools were situated in the most Eastern province of Canada. Both schools were situated in higher impoverished areas with higher populations of diverse and minoritized families as compared to the rest of the province. Approximately 80% of the children in both schools were dependent on the school lunch program. One school offered other support for families, such as a closet of gently used clothes and regular provision of food hampers. This school closely worked with the Association for New Canadians. The other school was situated closer to the west end of the city and availed of supports from the Rotary Club for development of school programming and the Boys and Girls Club for after school activities. Both schools had highly qualified staff with supportive administration teams. We visited with teachers every two to three weeks online, and made bi-monthly classroom visits in person, but often had daily communication with them through their school-approved twitter accounts, as they tweeted about the children's engagements in the classroom. Both teachers had a passion for teaching. Felicity (pseudonym) had been teaching for ten years and had taught kindergarten to grade six. Kirsten (pseudonym) had been teaching kindergarten for eight years and could not envision herself in any grade outside this introductory year to school for children. Both teachers were very concerned about some children's home situations during the pandemic regarding safety and food security. Both teachers made visits to children's homes to drop off supplies during the pandemic, often leaving these items on the doorsteps of families. One of the school administrators delivered donated technology and library books to families; the other administrator delivered food hampers as families reached out.

Data Analysis

For this data collection, we worked alongside teachers and administrators, thinking about how we could generate children's voices through multimodal forms with a focus on children's narratives behind their drawings. We share Kumpulainen's insightful observations (2016) that children's visual documentation and narration that voices the "aesthetic, creative dimensions of children's voices [and] sociocultural contexts" brings forth a rich perspective about their pandemic experiences with online classes. Speaking multimodally, the data sources were varied, including teacher lesson plans and journals, audiotaped focus group interviews with both children and teachers about online schooling, including video interviews with children, and teacher-created videos of children during circle time. The varied data sources provide a multimodal means for children to share their thoughts and opinions on their school and home experiences voicing a sociocultural perspective, thus furthering their voice and agency in a formative culturally responsive data collection.

The 28 kindergarten and 28 grade 3/4 drawings collected were initially analyzed by looking for aspects of sociomaterial relationally between space and objects. We considered how the placement of the people and objects that were drawn reflected the feelings and experiences of the students during online learning. For example, if the teacher was central

in the illustration, we interpreted this as showing the importance of her role throughout the duration of online learning. Another example we considered was if the student drew their friends in the space given, or included particular objects, which indicated to the viewer if the student perhaps missed their friends or was lonely. We also investigated the expressive emotions on the faces of the drawings through the students' use of lines, as this was a clue as to the social and emotional wellbeing of the child at this time.

Once the 56 drawings were analyzed, a written narrative was provided by the teachers, alongside a content analysis written by the researchers, which listed children's pictured objects, places and people. We then proceeded to group the drawings by themes identified by the researcher. The three spatial themes identified were school, home, and outdoors. This aided us in further understanding the students' experiences of online learning and what was significant for these children relating to online schooling, with a sociomaterial reading of what the drawing shared. For example, Jeffrey's drawing (Figure 3) includes a playground – this object, devoid of context, connotes play, the outdoors, fun, childhood, and more. However, upon a sociomaterial reflection that takes into account the context of online schooling, we see that Jeffrey's drawing conveys loneliness, sadness, and frustration with online school. This will be discussed further in our findings.

The final step of analyzing the drawings included identifying commonalities among drawings within the themes and counting how many drawings possessed these commonalities through their use of space. Commonalities for school-themed drawings were identified by counting how many students expressed their teacher being the focus, how many included their peers with them on camera, and how many included the teacher reading to the students. Home-themed commonalities included whether the student drew themselves alone or if their drawing included another child or other objects such as furniture, computers and toys. Outdoor-themed commonalities were identified by counting the number of drawings that depicted swings, a playground that was somewhere other than the student's house, the student by themselves, the student with someone else, and emotions on students' faces.

Table 1

Three spatial themes in children's online learning

Themes	Commonalities	Example
School-themed	1. Teacher as focus 2. Peers on camera 3. Teacher reading to students	Vivian's drawing (Figure 8) depicts a Zoom classroom, with her classmates' faces on screen (2)
Home-themed	1. Student alone 2. Student with another child 3. Objects	Brianna's drawing (Figure 2) depicts her inside her home with her sister (2)

Outdoor- Themed	<ol style="list-style-type: none"> 1. Swings 2. Playground 3. Student alone 4. Student with someone else 5. Emotions 	Jeffrey’s drawing (Figure 3) depicts him alone, outside, on a playground, with a somber expression on his face (2, 3, 5)
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To check that our interpretations match the intentions of the students, and to contribute to students’ agency in the data analysis process, we asked students to describe and explain their drawings to us. We also conducted individual interviews with six students in the grade 3/4 class, who further explained to us the text and what was drawn and why they included various aspects/objects in their drawings. We inquired about their least and most favourite parts regarding online learning, and we were able to discover challenges and successes when questioning these children regarding their drawings, as well as interests and hobbies that were explored and practiced during online learning. We found that our analysis had succeeded in identifying the intentions of the students. For example, we concluded from Jaxon’s drawing that he was sad to play on the playground without his friends – a negative effect of online learning. When asked to explain his drawing, he said: “I didn’t like at-home learning because I missed my friends and playing on the playground.” This corroborates our findings.

Findings

Our analysis revealed numerous findings, which we have organized into three overarching topics: online learning during the pandemic, the social lives of children through the sociomaterial, and technology skills. In this section, we draw on numerous forms of data, including drawings, interviews, and field notes. Parent and teacher interviews inform our research and provide valuable insight into the home and school contexts in which students were learning during the pandemic. However, students’ voices are privileged throughout our study.

Online Learning During the Pandemic

Online learning brought forth much uncertainty on the part of students, who did not know what to expect. When the educator provides a safe and enriching learning environment where students are not afraid to speak up and share their interests with their peers, it can foster a sense of self and security in themselves and their learning abilities. Through the student interviews, it was clear that these students were in an environment where they felt safe to express exactly how they felt about online learning, whether their experiences were positive or negative. We feel that this was dependent on the importance of building community relationships and willing support for the teacher within the school community. Children and teachers had the choice to be given pseudonyms in the data that follows.

Throughout the transition from in-person learning to online learning, students experienced many challenges. Teacher Felicity explained how she needed to thoughtfully shift her teaching to accommodate these challenges. She shared that during the second

lockdown, “While kids were for the most part very engaged, there were still issues with getting families to get the kids online... some of the parents were less engaged this time around.” This may have been because many parents were now working from home full time.

We did find the issue of devices and bandwidth in households became more problematic. Nine-year-old Sarah shared in an interview with the author that her mom was home with her while she was attending the online classroom, but she was working and going to Zoom meetings as well. Sarah explained “whenever my mom was in meetings, I would have to sneak around the house to get stuff for school in case I forgot something or recess.” Sarah, along with other students, was often left to collect objects and materials to pair with class resources, find devices needed for class and get herself online. Felicity admitted in a focus group discussion that often she did not know what resources children had in their houses for project-based learning initiatives as opposed in school, she would have materials readily available for students whose parents could not provide such things. During both lockdown periods, she made house visits to leave crafting supplies, objects and school materials at the doors of children’s homes.

Felicity felt that students with lower confidence and softer voices did benefit from the online classroom, “I did a lot of the low floor, high ceiling activity so that everybody could have something to participate in. They could answer and give their opinion” Later she shared in an interview, “We ended up doing this arts-based animal writing project where they could learn about different animals and start sharing facts, so it was a real opportunity to build confidence in some students who don’t really have a strong voice in the classroom because of other dominant personalities in here.” This was especially beneficial to Kevin, who is an ESL student in the class. Kevin started school during the lockdown from the Philippines. His parents and Felicity worked together to get him online. The opportunities for show and share worked in Kevin’s favor with his sharing of his talent for 3D construction of houses and objects. This was exemplified in his computer screen drawing (Figure 1). The opportunity to share in the virtual classroom introduced him to new classmates and friendships which began online in those early weeks before he arrived in Canada at the end of the lockdown.

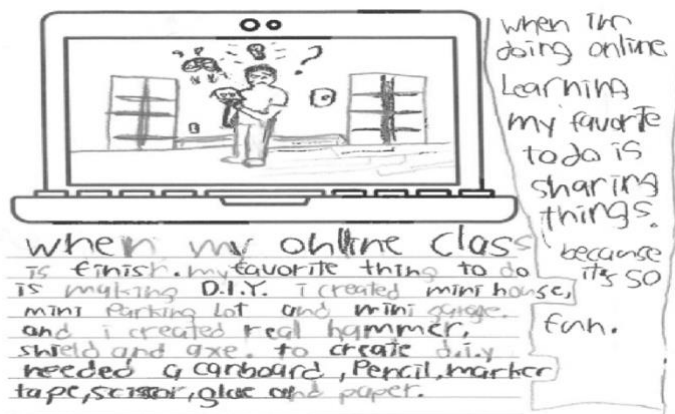


Figure 1. Kevin’s drawing

This illustrates another benefit of online learning; children were able to share their diverse cultures with a variety of materials with one another. Numerous cultures were represented in both of these classes. Kevin, starting class online in the Philippines, was able to share his culture with his classmates through the weekly show and share time on Fridays. Felicity talked about another student in the class; “One of my students was new to Canada, so a lot of times she would just bring her siblings in. She had 7 siblings!” Other students also loved sharing their home lives, Felicity explained: “A lot of the students participated - they either made a craft to show that day, or they showed something at their house [...] one of my students did most of her lessons from her family's Indian restaurant. And.. so.. she brought and she showed us all kinds of interesting things around the restaurant, [such as patterned dishes, objects and pictures,] which is very cool.”

Kirsten's primary class also learned about each other's cultures. “We talk about different traditions; now we're talking about Ramadan. We're sharing, and two little girls say, ‘I do it. I celebrate Ramadan too. How do you celebrate it?’ So, they made that little connection and then they started talking about family traditions of Ramadan and telling us stories. And instead of being the only person to share those experiences, they were sharing together.” Students talked about family food and how celebrations are tailored to each family. Other students shared what they do for Easter, and talked about going to church, painting eggs, and other traditions. Kirsten shared that she had four ESL students in her class; “So they tell me about the language that they're speaking and different celebrations that they're having at home. So even if I don't know what's exactly happening, I'm like, ‘Let's look it up!’ So we'll get on the computer and like I'll look on YouTube or Google, and they're like ‘Yeah, that's it, that's it!’ Then we'll watch videos and that sort of thing to teach the other kids.” In this way, through online learning, students were able to learn about each other's cultures in a personal and culturally responsive way that included children's cultural sharing through their own voice and choice of sociomaterial resources.

However, the online classroom was more challenging for children in kindergarten. Kirsten recognized these challenges and used various math learning websites, puzzle sites and active activities to keep students engaged, explaining, “I had to remember how hard it was for them to sit. We had a lot of breaks [...] and then we'd do a movement activity together, or a lot of online math manipulatives and that sort of thing.” In numerous drawings, students expressed through their artwork the love and appreciation for their teacher, especially when she would read aloud to them. They all talked about how much they loved book circle time in our meetings with students. When asked what she drew, Bea explained in her picture it was her teacher (Kirsten) holding her book. In reading the illustration through artistic elements such as space and placement of objects, we interpreted that Bea had a positive experience with her teacher, as Kirsten's smiling face is represented front and centre in her drawing.

In our analysis of Ariyah's drawing, pictured below (Figure 2), both she and her sister faced while sitting at her computer for online learning. She drew expressions on

their faces to show that she and her sister were very unhappy or frustrated with online learning and the desk style learning that comes with computer screen viewing.

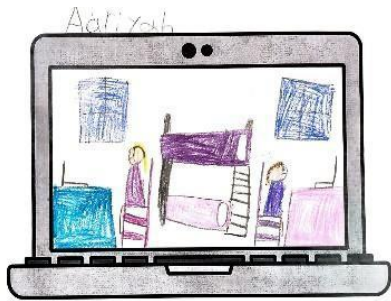


Figure 2. Ariyah's drawing

Kirsten, their teacher, discussed, in our online interview, incorporating Go-Noodle, which is an interactive dance and movement activity that can be found on YouTube. During these interactions, students would be invited to follow along with the actions of the performer on the screen. Videos included follow-along dances and challenges, where students would be instructed to avoid or collect certain materials that could be found in their homes before the end of the video. We saw Kirsten incorporate this into her online classroom "Everybody get up and we will do our little three-minute body break." For students like Ariyah, it was important to maintain engagement with others, albeit in a virtual way. Having an activity that involved moving together mimicked play in the classroom and helped the children feel connected to each other while apart, as they collaborated in the group dancing in their own home space.

Social and emotional learning was prioritized within the kindergarten classroom as well. Kirsten explains in her interview, "this year has been a lot of focus on social-emotional learning, and it's been a lot of focus on homelife and stuff because, being online, you were in their homes." In kindergarten, students do not yet possess the skills and tools they need to regulate all emotions they may be experiencing. We saw this reflected in drawings by students who expressed emotions of feeling sad or frustrated about having to be online, whether that be missing their friends or simply not enjoying online-learning. A number of students expressed sadness from missing their friends - like Jaxon

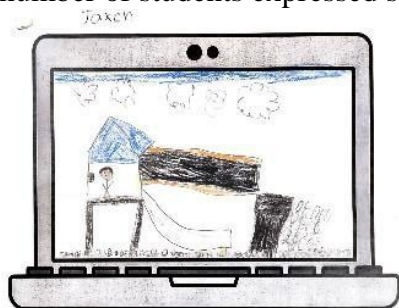


Figure 3. Jaxon's drawing

In his picture (Figure 3), Jaxon can be seen playing alone on a playset with a somber expression drawn on his face. While some students also expressed that they missed their friends, they still included their friends in their drawings; however, Jaxon did not. We did find out that Jaxon had a new baby sibling at home and his mom was quite nervous about having Jaxon around other children who may have the virus; this also impacted his attendance in school, as his mother was worried about the coronavirus infecting the newborn child. Nancy drew from a similar perspective as Jaxon (Figure 4). However, she drew with much color and a sun above her playhouse, and a tree with a climbing ladder. She is pictured with her dog named Ginger. The author had recorded in her notes that Ginger was her best friend during lockdown.

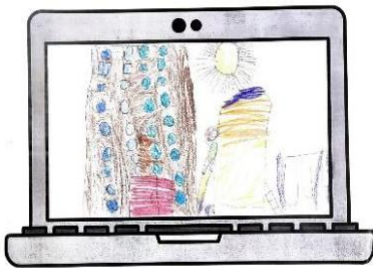


Figure 4. Nancy's drawing

Online learning was a new experience for the students and teachers in both classrooms. Some students also found online learning to be a positive experience, as it was more accessible, and they felt more comfortable talking or sharing pictures in an online classroom. However, many students faced challenges with learning in a new environment, and many lacked the material resources, skills, or support needed for lessons to make the most of online learning. Younger students also struggled with self-regulation, finding it more difficult to adapt to changes to their learning experience, and with missing their friends. Their drawings, representative experiences, and discussions revealed that the social lives of the students were heavily impacted by the transition to online learning.

The Sociomaterial of the Lives of Children

The illustrations completed by the kindergarten children expressed the longing to play with their friends and physically be with them in the classroom. Brooke expressed this by drawing her and her friends playing at the playground (Figure 5); she followed this up by saying, "I did not like at home learning because I couldn't see my friends."



Figure 5. Brooke's drawing

Through these drawings, it is important to recognize the significance of play within the kindergarten classroom, and how keenly students were aware of the lack of play during online learning. Kirsten, the kindergarten teacher, introduced scavenger hunts. These involved children sharing objects or materials that connected to their learning and the lessons. She felt parents were more on-screen and involved during this activity, and students drew and reflected on it positively. This level of participation enhanced the classroom dialogues and connections; it was often the highlight of the students' day. Jenny detailed her appreciation for scavenger hunts in her picture with her stuffed animals on a kitchen table to be shared online in her drawing (Figure 6). She explained, "I enjoyed being on the computer at home for school because I loved the scavenger hunts." Although less physical than most playground activities, this form of play allowed students a glimpse into other classmates' home lives, and materials like toys built new shared interests and new friendships with their peers. These hunts also allowed students to build better communications and connections with their teacher. Overall, our discussions with kindergarten children and their teacher, along with the students' drawings, revealed how much more isolated younger children were during online learning. Lack of in-person, play-based communication also impeded younger children who were less verbal.



Figure 6. Jenny's drawing

However, for older children, who had stronger communication skills, this was not the case, as they had the skills and ability to communicate online. Felicity was able to facilitate a socially rich environment using breakout rooms in the classroom. Annie, for example, enjoyed the breakout rooms because she was able to meet with her friends, share Tik Tok videos, and talk in separate, smaller groups. She also said she enjoyed these breakout rooms because there were minimal distractions from other students in her class.

Evelyn, during her interview, explained that, “I really liked how we went into breakout rooms; there was only kids in the breakout room so I could share stuff from home and not bring it to school so I could share better.” Felicity also facilitated a pet parade where children could share their pet or favourite stuffy on screen. Evelyn shared her fish. On Fridays, Felicity enhanced friendship building by implementing online picnics. This began a cultural discussion around foods that children eat at home. Focusing on the benefits of smaller group instruction, students were separated into two groups on a normal online instruction day, one group in the morning and another in the afternoon. These Friday picnics allowed for all students to gather to socialize and share in discussions around their interests and hobbies, and objects in their homes. She placed great value in building relationships through the virtual picnics: “They got to see each other; it shifted the way that they related to each other, and new friendships came from it.”

We saw these opportunities as empowering for student voice, as it allowed students to give their classmates a glimpse of what their lives were like at home, such as what toys they had, the objects and materials found in their homes. It also allowed students to further share identities and cultural practices that are not as easily shared or always acknowledged in classrooms. Children who would not usually socialize in the physical classroom space discovered more commonalities in the online spaces. However, this was dependent upon the ability of the students to effectively use technology to communicate.

Technology Skills

Through the students’ drawings and interviews, we discovered that students struggled with the transition from physically writing assignments to having to type on a keyboard daily, as well as talking via video calls as opposed to in person. This lack of skills featured through drawings and our interviews detracted from students’ ability to fully participate. The teacher did, however, use multiple websites and activities with which the students felt comfortable to implement and carry out her teaching assignments, which led to increased engagement and comfort.

Felicity included websites that were relevant and engaging for her students, specifically to teach math. In her teachings, Felicity introduced math puzzles to her students from the website SD Mysteries. Felicity explains, “SD Mysteries are just little math puzzles that we do fairly regularly in class as a warmup for our math lessons.” Kayla also emphasized during her interview that she enjoyed the way her teacher did math. A number of students included YouTube in their drawings and expressed their love for the website during their interviews. Martin explained that his teacher used YouTube to help with learning and the facilitation of lessons throughout the day. For Martin, who has a learning disability, this was an important accommodation, as reflected in his drawing (Figure 7).



Figure 7. Martin's drawing

Annie and Sarah expressed their challenges with the use of keyboards compared to the ease they found with using pencil and paper. Sarah explained, "It was harder to do the writing online because I would rather write on paper, it is easier for me. Not really difficult, but easier." Annie added to this by explaining in the focus group, "I had to do my work on Chromebook which is really confusing. I usually write on paper." While learning from home, the work lives of parents would continue on, which left the student alone to navigate Google classroom or use a computer.

Discussion, as well as participation, in online learning was difficult for some students. Some students found it difficult to speak up in class, especially if multiple students did not have their microphones muted or if their household did not allow for a quiet environment. For students such as Vivian, she had to go to her parents' Indian food restaurant for the day. It was at times loud, as she explained in her drawing description (Figure 8). However, the sociomaterial assemblages that were ever-present with a busy restaurant in operation behind her as she participated in class introduced Indian food and her mom, the restaurant chef, to her classmates. Her classmates expressed their exuberance for these visits in our online focus group interview. Her friend Bella described how cool it was, saying that "it was like a TV show."

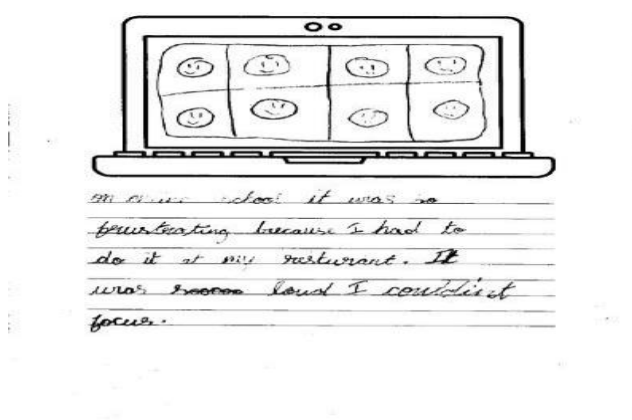


Figure 8. Vivian's drawing

For the younger children, we noted that the screens in their drawings were filled with Miss Kirsten and her yellow hair. She was central to their online experience. She also identified how helpful it was for those students whose parents were around to help them:

But the computer stuff, at first, how to mute and unmute and all that kind of stuff, parents did help, but by the end of it, the parents were in and out of the room, or you could hear them out in the kitchen doing dishes while we were on the computer. And all the kids were turning on their mics, turning off their mics, like that little raise hand button at the bottom, and they were like... quiet and like it was – they were little superstars.

Parents also gained valuable knowledge from hearing the students' lessons; Kirsten explained, "Parents listening in the background saw what it really is like each day." It also gave parents more understanding of how to teach their own children, as they watched, unbeknownst to Kirsten, as she read picture books aloud. One parent made a comment that she usually just read the picture book, but now she would engage her children in talking about the illustrations in the book more after seeing Kirsten do this in her child's virtual classroom.

Technology also played a role in the sharing of children's sociomaterial assemblages during the pandemic; in their online classroom show and share, children had the opportunity to present their home objects and family members to their classmates on-screen. For example, Kevin, who created a mini city made of cardboard in his new home, would never have been able to bring his creations into class. However, he was able to show the entire city to his classmates through his computer's camera.

The new technology involved in the transition to online learning provided students and teachers with challenges as well as opportunities for learning. While students learned how to use new tools like Zoom, Google Classrooms, and more, teachers found online tools that could be creatively incorporated into their curriculum to increase student engagement and learning. These skills and tools will continue to be applicable to students and teachers in the future.

Discussion and Conclusion - Discourses of Resilience

This study, in which students were asked to draw their experiences with online school, concluded that students were able to reflect the quality of their relationships with family, school, and friends through their art (Harrison et al., 2007). Building on the conceptual literature regarding children's agentic voices and sociomaterial perspective, we developed a methodology that utilized visual methods. Our data was rich and varied using multimodal sources, including children's drawings, field notes, focus groups, observations, and parent, teacher and student interviews. Close examination of the children's drawings further enhanced our knowledge about their online experiences; these sociomaterial

assemblages further deepened our hearing of the students' pandemic voices. In this section, we reflect on the implications of our findings and identify the contributions of this study.

Many students indicated their longing for the ability to spend time with their friends, and much of that was represented through outdoor play, where students drew swings, slides, grass, blue sky, and sunshine. Drawings also commonly included that of their teacher, and how the relationship they had with their teacher positively impacted their learning experience, whether that be through conventional teaching, music, or reading books to the class. This reflects previous findings on the important role of teachers in children's art in schools (Purkarthofer, 2017).

In line with previous research by Ward (2018) and Ahmad (2018), we addressed the gap in the literature regarding the role of nature in children's learning (Moula et al., 2021). Students reflected their love for outdoor play through their drawings. Many students expressed this through the perspective of playing with their friends outside at the playground, before they were isolated. The lockdown presented a newly vested interest in outdoor play for society. Our discussions speak to the importance of sociomaterial assemblages, as we learned from what children's drawings pictured and what they chose to leave out. Some students, however, expressed their love for outdoor play by drawing themselves alone and acknowledging that they had missed their friends during this time. For example, Jaxon drew himself alone, because he could not play with friends in person, due to his mother's protection of a newly arrived sibling from the virus.

Our findings suggest that students missed the opportunity to socialize with their classmates and seem to be able to focus better when they are physically in the classroom. However, children also enjoyed many of the online learning activities. The new knowledge that was generated strengthened children's voices (Messiou, 2019; Robinson, 2021), as demonstrated in the multilayered sociomaterial assemblages that evolved in multimodal texts. Interviews with teachers enhance our findings when considering the drawings made by students and their contexts, such as the child's home life and relationships. Breakout rooms and online games and activities allowed students to not only socialize with their peers, but also collaborate with them during the school day to work with various materials, and at times introduce the students' home contexts. By doing this, students could exchange ideas and learn more about the material of other contexts, such as Indian restaurant food and a chef's knowledge (Lackovic & Popova, 2021; Pink, 2007). Educators also reflected on the steps they took, and continue to take, to implement the use of more technology and social media in the classroom, as students are continually using these outlets at home and have grown accustomed to using them as a result of the pandemic. Websites like YouTube can be used for instructional purposes or simply as a brain break for students when needed. Either way, such websites are a productive and useful tool that should be taken advantage of in the classroom, as they can be easily accessed and are generally free. Parent interviews demonstrated that they also benefited from online learning, as they were able to observe their children's classes and see multimodal pedagogical practices, which showed how the teacher drew contextually from children's sociomaterial lives through illustrations and narratives, thus showing parents new ways to be more active participants in their children's education.

This paper makes three major contributions to the literature. First, we provide novel data around children's pandemic experiences by interviewing students and teachers as well as analyzing children's drawings. This provides a more well-rounded perspective on online learning and fills a gap in the literature regarding sufficient triangulation in the study of children's voice and drawings (Ahmad, 2018; Harrison et al., 2007; Maxwell, 2018). Second, by consulting with children and valuing their participation equally with their teachers' participation, we identify and combat the imbalanced power dynamics inherent to early education (Heydon et al., 2016; Robinson, 2021). Third, we counter discourses of loss with discourses of resilience; children reflect not only on the challenges of online learning, but also the activities they enjoyed and relationships they built. Seeing one another's homes, objects and families through show and share, and spending time together during picnic lunches, brought students closer together despite their distance, reflecting once again the power of sociomaterial assemblages. Our research noted that through focusing on the aspects of the pandemic are important not only for salvaging the learning that was achieved during these strange few years, but also maintaining children's mental health and well-being by not dwelling on the negative (Beausoleil & Petherick, 2015; Moula et al., 2021).

Taken together, our research points to the transformative power of children's voices in education. Our elicitation of children's voice through drawings and interviews can transform our approach to post-pandemic education; it is now our responsibility to put into practice what we have learned from students and teachers (Groundwater-Smith & Mockler, 2007). In this research, visual research methods alongside a sociomaterial perspective shows how children's drawings, other artwork and material items, are intrinsically linked to their social lives. In particular, this research has brought forth deeper understanding as to how children fared during these turbulent times. Importantly, examining research data through sociomaterial assemblages augments children's voices and agency in matters that concern their lived and literate lives.

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Author Biography

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