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Zoom play: Affectively mobilised collective play across Family Day Care settings

Marilyn Fleer*: ORCID:

https://orcid.org/0000-0002-1224-5510, e-mail: Marilyn.fleer@monash.edu

Prabhat Rai: ORCID:

https://orcid.org/0000-0001-9344-2614, e-mail: Prabhat.Rai@monash.edu

Conceptual PlayLab, School of Educational Psychology and Counselling,

Monash University

Abstract

The theorisation of digital technologies for play-based settings has received a great deal of attention. However, less is known about how zoom modalities, which are increasingly becoming commonplace at work and in the home, have impacted on the play of children in Family Day Care. Whilst theoretical attention has been given to conceptualising multimodalities in centre programmes, Family Day Care is uniquely different. This paper takes up this challenge by studying Family Day Care educators,their leaders (n= 7) and the children (n= 38) from their respectiveFDC homes (digital data of 797.46 min). The results identify the pedagogical practice of zoom play,which is a form of collective imaginings, a common narrative, and a crystallised affective imagining when digitally connected across a virtual landscape.

Keywords: digital play; Vygotsky; imagination; Family Day Care

Introduction

Children at play in Family Day Care (FDC) is a common practice tradition supported by educators. Yet it appears that very little research has been directed to this general area (Bromer & Korfmacher, 2017), and even less when digital play is considered (Pihlainen et al., 2018). What is known has come primarily from research oriented to examining the quality of programs and the outcomes for children when compared with centre based contexts (Hooper et al. 2021). But this research only gives insights into the play routines of FDC, the percentage of time devoted to play (Rusby et al., 2017), educators perspectives on learning and play (Hooper et al, 2021) and how play is impacted on infants attending multi-age FDC settings (Stratigos, 2015). This general literature into FDC does not bring out the digital play of children and educators in FDC.

Unlike studies into family digital practices where there is a solid body of significant research (Marsh, 2010), this paper is focused on the institutional practices of FDC which is distinctly different. How digital play is enacted in this specific setting is under researched. Only one research article was found (Pihlainen et al., 2018), showing that the integration of digital technology in FDC is rare. But when supported through the provision of Digi-bags (tablet, software, craft materials, BeeBot robots), this facilitated "the pedagogical, creative, and regular use of digital technology with small children" aged 1-5 years (Pihlainen et al., 2018, p. 1). But this study was oriented to educators' perceptions and practices, and did not study the digital play of the children in relation to the unique institutional characteristics of FDC. Previously we identified that zoom platforms for FDC did bring out new ways that children played, where the role of the educator was key for dramatizing, building a narrative across time and place, supporting more mature forms of play, and significantly creating collective imagining (Authors, under review). But this research did not discuss the pedagogy associated with this form of digital play. How this convergence of children and educators at play across homes in a digitally enabled context has not been discussed previously. Therefore, this paper is oriented towards pedagogy in relation to what it means to play with other children through zoom technology within the educational context of FDC.

Family Day Care

In examining ERIC, Proquest and A+ Education from 1981 up to 2021 only a limited number of studies could be found that were associated with FDC. We determined the unique

characteristics of FDC educators as running a program on their own (Gerstenblatt et al. 2014), that they act as both the manager and a teacher (Trawick-Smith and Lambert 1995), they have technical certificates and have difficulties to upgrade to a degree or to attend professional development because they are a single person operation (Bromer and Korfmacher 2017), and that they are geographically distributed rather than in close proximity to each other (Porter et al. 2010).

We also found that the children attending the services range in age periods, typically 6 weeks to 6 years (Rusby et al. 2017), that often the FDC educator has their own child in the service, and the boundaries between what is a home and what is a service can be challenging for how spaces are planned, resource shared (i.e., toys), and hours of the service operating (i.e., families late picking up children) (Trawick-Smith and Lambert 1995).

Digital play

In line with Gillen and Kucirkova (2018) we sought to move beyond binaries when theorising across time and space the use of digital tools in FDC. Not only has a pandemic brought forward more digital fluidity and hybridity, it has shown how time and space are entangled and practices are embodied within material and non-material conditions of digital play (Gillen and Kucirkova, 2018). Gillen and Kucirkova (2018) and others who work across theoretical traditions, have sought to explain how digital play with the modality of a zoom platform requires further study and theorisation. That is, "it invites a rethinking of the researcher's starting place, requiring new ways of thinking and writing" (p. 837) than has been previously claimed.

Building on Gillen and Kucirkova's (2018) posthumanism perspective, we found a myriad of ways in which play and digital technology were being conceptualised and studied. For digitally oriented papers we primarily examined journal papers from ERIC and ProQuest databases using the categories of Digital play' And 'Early childhood' Or "early years' Or "child'. We found 70 papers, which we clustered in relation to how they were conceptualising digital play. In considering Gillen and Kucirkova's (2018) view of not creating a further binary, we did a synthesis of those studies relevant to the focus of this paper on FDC, and identified three broad waves of research:

(1) A focus on the *relations* between digital and real-world contexts (Figure 1)
(2) Terms to capture the *unity* of digital play and real-world play (Figure 2)
(3) *Synthesis* of what is unique about digital play activity (Figure 3)

These waves are not chronological, but rather conceptual. What follows are examples, rather than an inclusive set of studies. Examples were selected based on either their commonality (i.e., many had identified or named the digital play in that way) or those that were distinctly different categorisations of digital play practice.

> For the purposes of this paper on the play of Family Day Care Educators and children in a digital context of zoom, we defined digital play as embedded and entangled within the educational setting (Gillen and Kucirkova, 2018). We make mention of the ways children would traditionally be playing together with materials in everyday life situations in the home or community, as real-world play. However, we note too, that this world is deeply embedded and shaped by children's digital experiences. Therefore, our synthesis brings forward multiple ways of conceptualising digital play, and the waves that follow, act as a backdrop only for our study and discussion which makes up the latter part of this paper.

The first wave of theoretical thinking that emerged from the study of play in contexts where digital tools were being introduced focused on the relations between the digital and the real-world contexts. Figure 1 shows a tapestry of digital tools, with specific focus on how the digital tools mediate play (Marsh et al., 2016; Verenikina et al., 2016), integrate (Nuttall et al., 2015; Palaiologou, 2016; Fleer, 2020), and are balanced in programs (Gillen & Kucirkova, 2018).

Specifically, we noted the *digital affordances* of devices used in outdoor area, expanding the social worlds with Google Earth, social media for collectively constructed tweeting, sound, images, and motion coming together as stories. We also found literature focused on digital play that was inspired by apps. Many of the studies referenced the *integrated* nature of the digital play into existing programs. For instance, the integration of digital into the kinetic, tactile, and play-based traditions of early childhood education. There were also studies that discussed the need for *balancing* digital play in programs. The researchers argued for a delicate balance between digital and concrete worlds of play. In some studies researchers named the introduction of the digital play as a *pop-up*. That is, the digital play was introduced

at specific times only. Finally, researchers named the emergence of digital play as *percolating* into homes and early years classrooms, where connections were entangled.

Taken together, this wave of research shows how digital technologies are brought into educational settings, and introduces concepts to capture the relations, such as, affordances, mediated, integrated, balanced, consumerist, pop-ups, and percolating. What is missing from this wave of research is how these conceptualisations explain play via a zoom platform across FDC contexts.

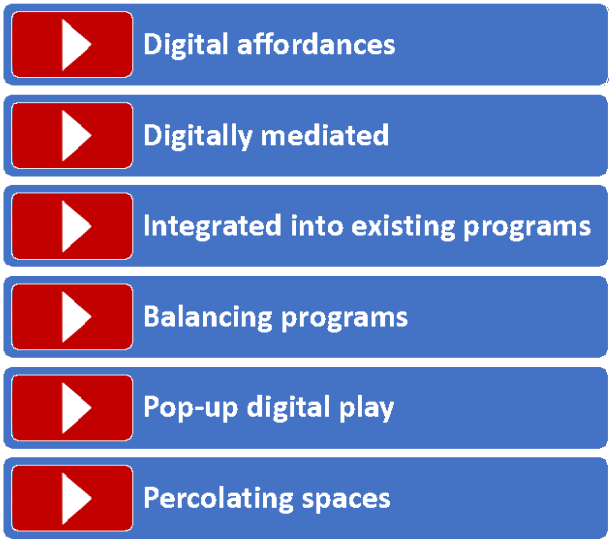

Figure 1. The different ways digital and real-world relations are shown

The second wave of research goes one step further by theorising the unity of digital and real-world play contexts, with some claiming that a new categorisation of play has emerged (Marsh et al., 2016). An analysis of this wave would suggest that researchers are also seeking to move beyond the binary of play and digital technology. Figure 2 summarises the terms introduced into the literature to deal with this problem. The unity of the digital and real world contexts are conceptualised as fused (Stephen & Plowman, 2014), porous (Bjork-Willen & Aronsson, 2014), techno-ecological (Arnott, 2016), as a coadjuvant and digitally amplified (Fleer, 2019), dialectical (Fleer, 2016), as an *inter*play (Scriven et al., 2018), as enmeshed (O'Mara & Laidlaw, 2011), blurring, fuzziness and permeation (Marsh, 2010), or as converging (Wood et al., 2018) to bring forward multi-modal, global-local, and traditional-digital (Edwards et al., 2020). A summary of these terms follows:

- ***Fused:*** When researchers conceptualise digital play in the context of combining virtual and real worlds, such as, touchable toys using tags to communicate with each other both on and off screen.

- **Porous:** Digital objects or symbols, like tangible objects in social pretend play, support a shared and joint focus in social play which holds players together.

- **Ecological:** Techno-ecological framework that goes beyond screen-based media and shows how the digital and real-world play are acting in relation to each other.

- **Fuzziness/blurring:** A conceptual blurring between the material and virtual contexts that seem to permeate each other.

- **Coadjuvant model:** Digitally amplified practices that go beyond binaries and unify a profile of multiple digital relations in early childhood programs.

- **Dialectical relations between play-digital play:** Digital play captures the simultaneous nature of the real world and imaginary situation in virtual worlds.

- ***Inter*play:** Interplay between range of digital technologies – phone, video, Barbie internet.

- **Enmeshed:** The real-world and the virtual world are not alternatives to each other, but rather are enmeshed and seamless to the children.

- **Converging:** Both digital and real-world contexts merge in contexts of multi-modal, global-local, and traditional-digital.

What these terms seek to do is to capture the context of affordable, accessible and everyday world technologies as part of the play programs. But these studies were not undertaken in FDC and therefore the new terms were not conceptualised directly in relation to the unique characteristics of FDC.

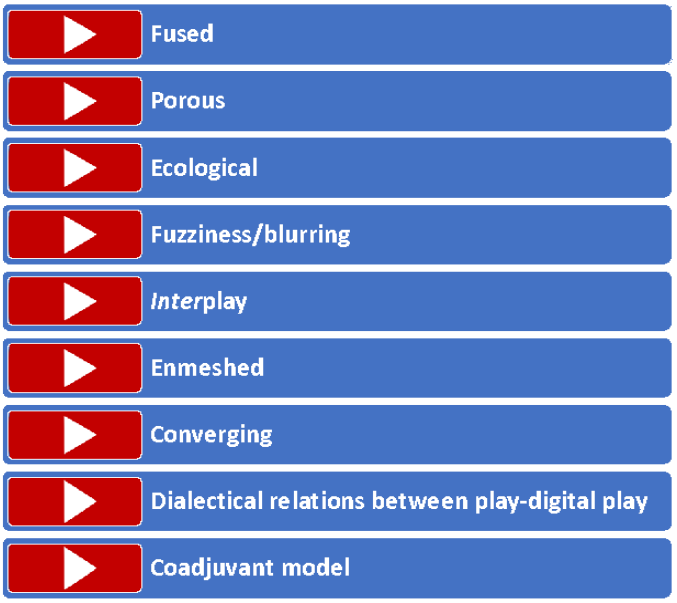

Figure 2. Tapestry of terms to capture the *unity* of digital play and real-world play

The third wave of research is oriented to understanding the new forms of digital play that have emerged through the studies undertaken in early childhood settings. Figure 3 synthesizes explanations of the new conceptions of digital play as part of children's and teachers/adults' real-world experiences. Terms are introduced which explain digital play activity, such as, digital talk (Bjork-Willen, & Aronsson, 2014), socially negotiated digital objects (Linderoth et al., 2002), emoticon to virtually express emotions (Marsh, 2010), virtual playworlds (Talamo et al., 2010), collaborative play through toyhacking (Wohlwend et al., 2018), and digital meta-imaginary situations (Fleer, 2014). These can be summarised as:

- **Digital talk*:*** Such as, embellishing activities with animated moves - singsong actions, response cries, and sound making in synchrony with the tempo of the game.
- **Socially negotiated digital objects:** Screen images, symbols and actions are understood, they must be socially constructed, negotiated in context and historically built into culture.
- **Emoticon to virtually express emotion in play:** Emoticon symbols used to give new emotional sense to digital play.

- **Virtual playworlds:** Role-playing online community develops unique personal experiences and foregrounds tensions between everyday life and the computer world.
- **Toyhacking:** Play enacted with bodies, toys, props, puppets, written text on paper to craft agreed pretend scenarios, revising meanings, realities, bodies, actions and redesigning film and toys.
- **Digital meta-imaginary situation:** Digital meta-imaginary situation, where children change the meaning of objects and actions in virtual contexts.
- **Digital make-believe play**: Themes of digital play emerge from the real-world.

These studies seek to capture the nature of the actions in the digital imaginary play and/or the environments in which digital play arises, and in so doing introduce new terms to capture the breadth of the characteristics of digital play.

Figure 3. *Synthesis* of characteristics unique to digital play

Figures 1- 3 bring forward the *relations* between digital and real-world contexts, their *unity*, and what the *new digital play activity* looks like in virtual practice. These dimensions give insight into the activity of digital play that is being mediated (Verenikina et al., 2016), amplified (Fleer, 2016), collectively enacted (Evaldsson, 2009), shared (Björk-Willén & Aronsson, 2014), negotiated (Aarsand & Aronsson, 2009), framed as social contracts inside play (Tiilikainen & Arminen, 2017) and virtually expressed through emoticon (Marsh, 2010).

But this work does not capture how the children and educators in FDC played virtually and across geography.

Theoretical and empirical study context

Our study involved 38 children, of which 26 identified as Australian, 4 Indian heritage, 3 Italian heritage, 1 English, 1 Swiss German, and 3 did not disclose. The children were aged 0.71 to 4.37yrs (mean age of 2.62 years; 2 years 7 month). A total of 7 FDC Educators (one of Indian heritage and 6 of European heritage) and 2 FDC leaders also participated in the study. Most families were working class, with secondary schooling backgrounds. University ethics approval was granted and FDC leaders and all participant FDC educators and the respective families consented to be involved in the research.

Context: The context of the research was the FDC educators' homes and a storyteller who zoomed all the children and educators together each morning for 30 mins.

Role of the researchers: The study design was theorised using cultural-historical concepts, and the first author in drawing on aspects of the co-author's previous family surveys, set up the research with the storyteller and 2 research assistants.

Procedure: The storyteller delivered a total of 4 sessions across one week with the children. The storyteller provided through email, suggested ways of interacting on screen and in the home to continue the collective play, such as making a model farm for the characters in the chosen story (Rosie's Walk, by Pat Hutchins) to be shared on subsequent days. The educators also undertook a further set of play sessions just in their homes, following the same format as was introduced to them on zoom.

The play was digitally documented using zoom recording features by two research assistants. The play activity in each of the family homes was recorded through a digital diary of photographs.

The zoom platform also brought the educators and leaders together for a briefing (session 1) and reflections midway (session 2) and at the conclusion of the study (session 3).

Data generated: The research generated a total of 797.46 minutes of digitally recorded visual

data (on zoom platform), four complete digital diaries, and field notes from each session. All reflection sessions were transcribed, and all digitally recorded zoom sessions were logged and placed in digital folders.

Analysis: The concepts of imagination and creativity (Vygotsky, 2004) and play (Vygotsky, 1967) informed our analysis. A cultural-historical conception of play is the creation of an imaginary situation, where children and educators see an object and imagine it to be something else, and where this imaginary situation affords new play actions. Vygotsky (2004) conceptualised imagination and creativity dialectically. That is, to imagine something that does not yet exist, then to bring it into creation as an artefact, means it can become part of the play activity affording new actions by the players. To analyse the pedagogical practices of zoom platform that were observed in the study, we noted patterns which we studied in relation to the unique institutional characteristics on FDC (e.g., multi-age groups, home is both an institution and a family setting). The theoretical concepts supported the analytical process by helping explain the pedagogical practices of the FDC environment and the digital zoom technology as educators and children played imaginatively and creatively across the digital platform from the distant geographies of the FDC homes.

Results and discussion

We were interested to know what might be the pedagogical practices associated with zoom play in FDC. In this section we introduce 3 key pedagogical concepts with typical examples of play practices from the research, and we discuss the results in relation to cultural-historical conception of play, and imagination and creativity. The pedagogical concepts are discussed in turn:

- Pedagogical concept of collective imaginings
- Pedagogical concept of a common narrative
- Pedagogical concept of crystallised affective imagining

Pedagogical concept of collective imaginings

First, we identified that a digital platform enabled FDC homes to come together into a dynamic *virtual landscape*. This is visually represented in Figure 4. What was enabled is a collective imagining across FDC settings through the storyteller who read, told, and

dramatized the story of Rosie's Walk.

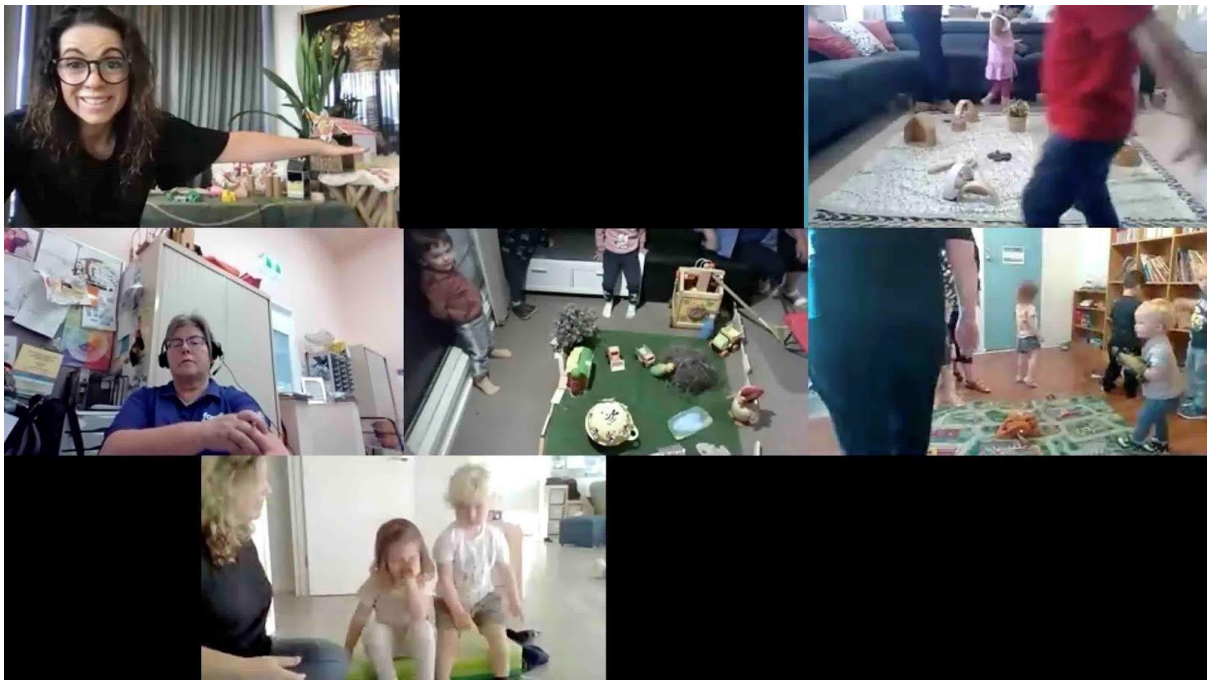

Figure 4. Collective imaginings across a virtual landscape

A visual representation of the collective imagining in all of its dynamic forms are seen in the figure, where the storyteller, educators and children all mirror each other's movements and build a collective play narrative which is valued by the educators in the context of the global pandemic, as M explains.

> Meredith: You could have little groups of educators doing the same thing, particularly with COVID the way it's been. And that's something we probably would have benefited from last year because we've been often regularly go to story time at the libraries, which hasn't come so readily now because restrictions of numbers of children and adults. *So instead of watching them online from the library, which was good, we could have started doing that with each other [as zoom based play] as two or three educators or however many you want.*

The difference between the library story reading online and the *FDC virtual landscape* was the synchronous role-play of children and educators at each moment of the story, as this email extract shows:

> Dear Educators,

> It was great to see everyone today and see you role-playing Rosie the Hen. It was so lovely to see the support you have been giving the children by joining in with the actions and gestures, e.g., across, above, below…

We suggest that *collective imaginings* were taking place across the *virtual landscape* of the FDC homes/screens and this was made visible through the dynamic and simultaneous actions in real and virtual mode.

Second, we identified that the narrative and actions of the *virtual landscape* were promoted through prepositional language, as this email extract suggests:

> Things you can do at home before Tuesday's session:
> You might like to practice the actions that focus on the prepositional language: think about the cousins going across the yard, around the pond, over the haystack, past the mill, through the fence, and under the beehive. Don't forget to have fun shutting the farm gate?
> …

A distributed imagining of the virtual story went beyond the screen and into the play of the children in each home in different parts of the day:

> Shukla: … especially some of the older kids, they really enjoyed all this motions and like actions and stuff. And some of them were really interested in learning new words. So 'through', 'under' with the actions, and as soon as parent came in they were in a rush [to share], and then always mum and dad ask 'What did you do today?' And they were like, 'Oh, we learned this new word today'. …was very enthusiastic to show all the actions and everything... was telling mum 'This is the 'through', this is 'over', this is 'under', kind of thing.

We identified that the prepositional language could hold the meaning of the story actions and be extended across the day. Words were imbued with action, and these new word meanings were part of a bigger system of prepositional language that formed the imaginary play plot. The new words were consciously expressed to the children's families, as Shukla reported, "we learned these new words today… was very enthusiastic to show all the actions". Meredith also identified how the older children brought into their everyday lives, prepositional language, as holders of the imagined narrative of the story:

> Meredith: I think mine also said a lot of those words on the walk to school with the older children because we've got a big farm gate. So they have to go, oh, can we go 'through the gate', we'll go 'through the big gate' or the 'little gate'? That sort of thing. And we're going to 'go past where the big dog is'. That sort of thing, using the words [from the story and role-play], understanding what the action of it means.

Distributed collective imagining of the virtual story was possible because new words were imbued with actions that acted as placeholders for the imagined role-play of the story. These words with their associated actions could be transported into the everyday life of the children, such as, when Meredith asked, "can we go through the gate, we'll go through the big gate or the little gate?". A form of collective imagining with the system of prepositional language could be retrieved at the moment of seeing the gate, and new actions could be enacted as part of everyday life in FDC.

Third, we identified that the FDC educators resourced the children's play, including using YouTube to re-visit the story, google searches to find out more, and google maps alongside of creating their own maps of their community in relation to their walks. Vygotsky (2004) noted that, "experience provides the material from which the products of fantasy are constructed. The richer a person's experience, the richer is the material his [sic] imagination has access to" (pp. 14-15). Two examples of enriching children's play experiences through resourcing the content of the play follows:

> Example 1: Because if we don't know something we go and research it on Google or whatever. And 'cause we came across all these Rosie's Walk pictures … these older children have actually really emphasized perhaps [going around] the pond (Meredith).
> Example 2: I read this book because I put it on a video on YouTube. And they're like, "Oh." And then we'll go somewhere else [on YouTube], we'll see a beehive. These are bees. And they're like, that's not Rosie's beehive walk (Sasha).

What is key here for the FDC context, is how digital technologies "becomes the means by which a person's experience is broadened" (Vygotsky, 2004, p.17) through YouTube, google maps and zoom. In summary, the *collective imaginings* on the zoom platform appeared to transform everyday situations in the FDC home into imaginary situations and these virtual situations resourced the children's imaginary play.

Pedagogical concept of a common narrative

The second pedagogical concept to emerge from the research was related to how imaginary play experience on zoom gave a common narrative that conceptually tied the FDC group together. But how the play actions were enacted, were in relation to the cultural age period of the child, as Shukla shows.

> Shukla: So instead of like going 'through the door', I made with the chairs, and things like putting the blankets over it, so it's like a little tunnel underneath. So that was a pretend door. And then kids were being chickens and like 'going around the things'. I didn't get opportunity to use like very loose and small parts because they are very young. So, it's hard for me to like then observe and supervise all the time because they put things in their mouth and stuff. So, I try to make it more, like using the realistic tool, like the big loose parts, like chairs and blankets, and then like big size wooden blocks and things to create a little farm and things like that.

Whilst attention is directed to the mixed age groups and how to set up an environment to allow children of all ages to play safely together, this context also created developmental opportunities for the children because they had a common experience to resource their collective play and imagining. Big loose parts for younger children, like chairs and blankets, were being imbued with new meaning, as they became the different parts of the story to go over, under, around and through. The educators were developing the younger children's imagination through supporting play situations where the everyday objects in the home took on new meaning. This is in keeping with Vygotsky's (1967) premise that in play, objects become something different to what is seen when in an imaginary situation. The blanket is no longer a blanket to keep you warm, but has become a tunnel to crawl through into the imaginary situation of Rosie's walk. Because of the common play plot of Rosie's walk, all the children could identify the new meanings given to the objects and the actions, and this supported the younger children, as they were swept along with the imaginary play of the older children. As noted by Vygotsky (2004), "Everyone knows what an enormous role imitation plays in children's play. A child's play very often is just an echo of what he [sic] saw and heard adults do" (p. 11). This imitating with understanding was enabled via zoom.

> Shukla: … kids enjoyed playing roles. Like my kids are really young, only four kids who are coming on Tuesday, they are the only big group kids, and they really enjoyed. But the

> younger ones, kind of like copying them, pretending to be Rosie, like chicken walk, and things like that.

We also saw evidence of children's *imitation with transformative agency*. For example, Shukla discusses how her children added a fire pit into farm, and also through new actions, such as by milking a toy cow – both of which are not part of the story of Rosie's walk:

> Shukla: One kid came up with a fire pit, he wanted to add fire pit in his farm so he can have party around it. So maybe he observed that somewhere or he experienced that somewhere. Not in the setup here, but maybe at home or somewhere. And then one child came that he been to animal farm and he wanted to milk cows. … he was pretending too, milking a cow on a toy cow.

We suggest that Shukla's description of the children's play with the farm animals and the desire to add the fire pit, enabled agentic action by bringing into the play previous experiences to expand the narrative of Rosie's walk experienced through zoom. Vygotsky (2004) has argued that, "A child's play is not simply a reproduction of what he [sic] has experienced, but a creative reworking of impressions he has acquired" (Vygotsky, 2004, p.11).

The FDC context with the broad cultural age range of the children also gave possibilities to the younger children, in ways not expected by the educators, as Connie reports:

> Connie: I was a bit worried that my children were a bit young and hadn't really taken a lot in. They were very noisy during the [zoom] sessions, which is why we got muted quite a bit. But I was surprised today, my new coordinator came to visit, and the children opened the floor book, we were showing her the floor book, and they opened the page that they'd done the map of the farm. And they were able to completely and actually tell her the entire story and show her all the bees that they've drawn and the haystack and the pond. And I was just like, wow, that's quite remarkable that even this far on you can still be able to tell someone else the story and what you drew in the floor book. I thought that was quite clever of them.

The collective play with the common narrative on the zoom platform across FDC homes gave a common experience that was shown in the imitative actions of the youngest children as reported, but then realised in the explanations of the children when the coordinator visited,

and the younger children explained their map. These examples are illustrative of the characteristic of FDC where younger children experience what has been planned for older children in the multi-age group. As an institutional characteristic, this developmental strength can be explained as part of both the context and "the child's higher psychological functions, his [sic] higher attributes which are specific to humans, original manifest themselves in forms of child's collective behaviour, as a form of co-operation with other people, and it is only afterwards that they become the internal individual functions of the child himself" (Vygotsky, 1994, p.353; original emphasis).

In summary, we suggest that the role-play that took place on the zoom platform and simultaneously enacted in the FDC settings, gave developmental conditions for the younger children. This was because the children were supported to be in an imaginary situation, where adults changed the meaning of objects in their home and modelled mature forms of play. This opened the space for new play actions and storylines to emerge, such as the fire pit or milking a toy cow, to be brought into the collective imagining. Theorised in this way, zoom technology developed children's play through collective imagining and creating new play scripts as agentic matured play productions, rather than only staying as imitated reproductions.

Pedagogical concept of crystallised affective imagining

The third pedagogical concept to emerge from the study was in relation to how in FDC fantasy and reality were related. The following examples bring forward the fiction of the story of Rosie's farm, and the real-world imagining of mapping environments and designing farmyards.

> Shukla: I also give them opportunity to design their own farms.
> Meredith: Oh! I love that. Last day all the children had a go with that, even the school aged children. The little ones did not do on their own. But the others did a lot. Where we're going to put this? Where we find the pictures? And the actual map itself of the route around. What can we use for that role?
> … I had a school aged girl she said, I'll read the map and I'll take the map. And one of the children that attended, young Joanna that's three and a half but quite intelligent little soul. She says, "Oh, well here we are on the map". She's talking about where we were because they've got pictures to show exactly where they were. And after we've had our lunch we're going up there and we're going to go there. That was the snake house. She actually

had followed the map around to find out where it was, the age of three, three and a half. I don't know whether she would have been so conscious of the mapping had we not done the map.

Sasha: And the session that we've got the map, I had printed that map off and they were loving having that piece of paper to hold on to. So props were a big thing for us.

The maps made concrete the children's zoom play. Rosie's walk around the farm was initially embodied in Rosie's actions, actions became imbued with words, and the system of propositional language moved from a 3-D model of the farm (Figure 5) to crystallising the collective imaginary situation into a 2-D map (Figure 6). As Meredith showed, the concept of a map was then used by the children in their everyday lives when going on a nature walk. The map gave a new way to experience their everyday reality. As noted by Vygotsky (2004), "crystallized imagination that has become an object begins to actually exist in the real world, to affect other things. In this way imagination becomes reality" (p. 20).

Figure 5. Crystallised imagination – 3-D model

Figure 6. Crystallised imagination – 2-D map

We found that affective imagining emerged as children anticipated using the map to go to Rosie's birthday party. Each zoom session enabled a virtual amplification of emotional expressions across homes. The digital platform brought into the FDC homes another form of imagining that has not yet received the attention it deserves in the digital play research - the link between imagination and emotions. Closest is Marsh's (2010) identification of the use of emoticons. Vygotsky (2004) argued that relations between imagination and reality has an emotional tone, "every feeling, every emotion seeks specific images corresponding to it" (p. 18). We suggest there is a mutual relation between imagination and emotions when using a zoom modality.

Synthesis: Pedagogical model for zoom play

In our study, the storyteller and the educators created an imaginary situation each day through

the zoom platform, which was also mirrored in the homes, and then broadened into the community as the imaginary situation continued into everyday life. The study showed how a zoom modality brought developmental conditions into the FDC setting for the broad cultural age range of children – as is characteristics of FDC (Stratigos, 2015). Through educators' pedagogical practices, they gave new meaning to the everyday objects in the children's FDC setting (Vygotsky, 1966), and this supported the development of the younger children's imagination. Both mature and maturing forms of play co-existed through zoom platform distributed across FDC homes.

We also identified that collective imagining on zoom enabled words to be imbued with action, which in turn were realised within a system of prepositional language. The 3-D models with their system of prepositional language and action were then crystallised into a map, which in turn created new ways for children to read their own environment. The momentum was emotionally charged through zoom, and this created developmental processes which the educators and the storyteller resourced.

When the results are considered together, they can be operationalised as three interrelated pedagogical concepts that are in relation with each other as part of the zoom practices:

- Pedagogical concept of collective imaginings
- Pedagogical concept of a common narrative
- Pedagogical concept of crystallised affective imagining

The pedagogical concepts to capture the zoom practices are brought together and shown in Figure 7.

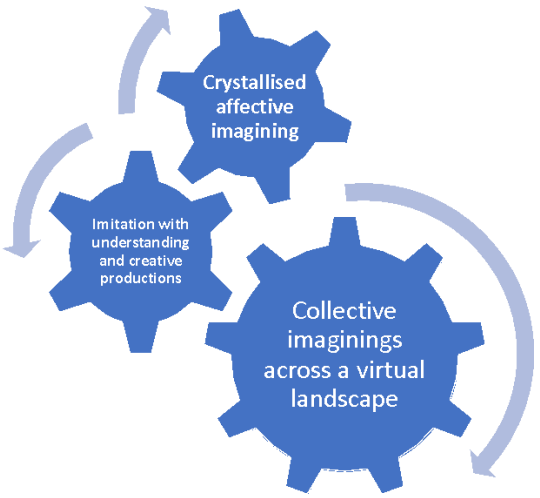

Figure 7. Zoom play as geographically distributed and affectively mobilised across FDC settings

Zoom play with its unique pedagogical practices enabled a geographically distributed and affectively mobilised form of play to take place across FDC settings. Figure 7 foregrounds what is new about children's actions in zoom play, but these practices should not be considered as occurring automatically when FDC educators and children come together on zoom. Rather, our research has revealed the pedagogical practices of zoom play as collective imagining brought forward by using a children's book, the building of a common narrative about Rosie's farmyard through a common story and problem to solve, and the affectively enabled play shared on zoom as each FDC home's individualised farmyard drawings in 2-D and 3-D models.

These collective imaginings and developmental conditions went beyond conceptions, such as convergence, fusing, percolating, amplified, or enmeshed as discussed previously. Figure 7 capture the relations and unity of zoom play on screen and children's activity in play in their home. This is important as a first step to what is known about the pedagogical practices associated with zoom play for FDC. But more needs to be known. We are researching in a constantly changing digital context, as seen through new apps being developed and new interfaces afforded for younger and younger children (Figure 3). Therefore, we can theorise that the FDC play we

observed was dynamically mobilised through the zoom platform as a generative and geographically distributed model that was constantly in motion and gaining momentum over time. The three relational dimensions are the conceptual cogs that drove play across FDC homes, and together these cogs help explain the new pedagogical practices brought forward through a zoom modality. However, these results and our interpretations should be viewed as one study of 7 FDC educators and 38 children and their families from one state of Australia.

Conclusion

Zoom interactions between adults, and between children, have featured as families maintain friendships and adults increasingly work from home. But we know very little about how children and FDC educators play across the digital platform of zoom. We know even less about what might be the pedagogical practices associated with zoom play, and therefore as digital modalities become familiar to families, it also becomes important to know what might be the pedagogical approaches for using platforms like zoom in FDC, especially because zoom appears to support FDC services with geographical distances and isolation.

In our research we sought to understand how FDC educators and children played together when using the zoom technology as a play platform or order to better understand the pedagogy that resulted from the digital practice. We learned how the imaginary play on the zoom platform enabled new developmental conditions that spoke positively to the unique characteristics of multi-age groups in FDC settings. We can conclude that our study identified the pedagogical practice of *zoom play,* which is a form of collective imaginings, a common narrative, and a crystallised affective imagining when digitally connected across a virtual landscape. Zoom generated in tangible form, representations of *affective imagining in drawings and models* in the respective FDC homes. The expansive geography of FDC was transformed into a collective imagining which was digitally enabled by *zoom* (Figure 7). This is symbolic of how zoom modality has digitally enabled new FDC practices that deal with tyranny of distance, but as Hartas (2020) has suggested, they also become part of the fabric of everyday life. These insights add to what is known about the pedagogical practices generally for FDC and specifically in relation to zoom play, thereby enabling and supporting new practices for play in FDC homes.

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