Children's informal learning at home during COVID-19 lockdown

Roseanna Bourke, John O'Neill, Sue McDowall, Maria Dacre, Nicole Mincher, Vani Narayanan, Sinead Overbye, and Renee Tuifagalele

NZCER
Rangahau Mātauranga o Aotearoa

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

This report is available at https://www.nzcer.org.nz/research/publications/learning-during-lockdown

New Zealand Council for Educational Research
P O Box 3237
Wellington
New Zealand

www.nzcer.org.nz

ISBN 978-1-99-004018-4

Children's informal learning at home during COVID-19 lockdown

Roseanna Bourke, John O'Neill, Sue McDowall, Maria Dacre, Nicole Mincher, Vani Narayanan, Sinead Overbye, and Renee Tuifagalele

2021

NZCER
Rangahau Mātauranga o Aotearoa

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

Contents

Acknowledgements

This research could not have been completed without the generous support and involvement of many people:

The Children's Research Advisory Group, their families and whānau, and their school.

The 178 children we interviewed, their families and whānau, and their school.

Ros Pullen (registered psychologist) for the development of an interview research protocol to ensure the safety of children.

Our research assistants and transcribers: Ella Bourke, Danielle Hodson, Mathilde Lutnant, Aprille Mincher, and Huidan Niu; and our additional interviewers: Nicola Bright and Teresa Maguire.

NVivo guru and workshop facilitator, Dr Lyn Lavery from Academic Consulting.

Project sponsor and peer reviewer of multiple report drafts, Dr Rose Hipkins from NZCER.

This project was part of NZCER's Te Pae Tawhiti Government Grant programme of research, funded through the Ministry of Education.

Summary

The national COVID-19 lockdown during school Term 1 2020 provided a unique context to investigate children's experiences of informal, everyday learning in their household bubble. In Terms 3 and 4, 178 children in Years 4–8 from 10 primary schools agreed to participate in a group art-making activity and an individual interview about their experiences.

The research adopted a strengths-based approach on the basis that most children are capable actors in their social worlds. This report documents children's accounts of the multiple ways in which they negotiated the novel experience of forced confinement over a period of several weeks with family and whānau.

The report is rich with children's own accounts of their everyday living and learning during lockdown. To foreground children's descriptions and explanations of their lockdown experience in this way is an acknowledgement of their right to express their views on matters of interest to them in their lives, and to have those views listened to, and acted on, by adults. Similarly, the approach reflects a growing educational research interest in student voice: enabling children to articulate their experiences so that adults can use this knowledge to better respond to and support children's learning aspirations and needs.

This research report does not speak for all children or all children's experiences. Nevertheless, it does provide valuable insights about the phenomenon of children's informal and everyday learning during lockdown, gained from a group of children for whom it was a mostly positive experience, and through which they learned much about themselves as persons and as members of a family and whānau.

Several months after the event, children in this study were able and willing to recall their experiences of learning during lockdown. They could identify social, cultural, and historical dimensions of their learning at home. Some children were able to recount rich, detailed stories about their lockdown experience and the ways in which they organised their days and activities. For some others, their days were largely shaped for them by family and whānau members, but even so, the children were able to explain what they enjoyed, or did not, and why.

Variations in children's learning across the group highlighted the complexity of learning that each child experienced, and the importance of having social relations, environments, and contexts that encourage and support their learning. Children demonstrated an understanding and appreciation of the value of this learning.

Informal learning at home during lockdown is not to be confused with school learning. It is not formally "assessed" or "measured" in the ways children commonly experience at school. Nevertheless, informal self-assessment and family and whānau assessment of children's learning was evident throughout their personal accounts. Children themselves and their family and whānau regularly made judgements about the value of children's informal learning that occurred during lockdown. It was evident from children's accounts that they and their valued others had observed the acquisition of new or enhanced knowledge, skills, and dispositions, and had identified growth in the children's learning.

Seven themes emerged from qualitative analysis of the interviews with children:

1. Learning new structures and routines in the bubble
2. Learning from and with whānau
3. Learning about and through language, culture, and identity
4. Learning through life events
5. Emotional dimension of learning
6. Learning about and through digital technologies
7. Self-directed and self-regulated learning.

Children described developing and adapting to new daily structures and routines during lockdown. They spoke about their changing appreciations of time and the role it played in what they could choose to do, when, and how. Many were quick to realise that schoolwork tasks could be completed more efficiently than at school, through self-determined patterns. These provided them with more time to engage in play, pastimes, hobbies, and interests, and make contributions to the everyday life and work of the household using the resources available in the home and immediate environment.

Children learnt constantly from and with family and whānau. Many reflected enthusiastically about spending extended, intimate time together and could explain how lockdown time together differed from their normal shared family and whānau time. Dealing with intensified sibling, parental, or other relationships, or having valued others who were unexpectedly either absent or present during lockdown, all helped children learn how to negotiate their lockdown living environment. Children talked about the enjoyment of learning more about their family and whānau, their involvement in a range of family- and whānau-related activities, and learning who in the family they needed to approach for help with particular forms of learning, such as cooking, construction, gaming, and arts and crafts.

For children from minoritised cultures, in particular, lockdown provided an extended opportunity in the home to be introduced to or to more fully immerse themselves in aspects of their heritage language and culture together with their valued others. It was clear from their accounts that children treasured these more intimate encounters with their parents' or grandparents' childhood and lives elsewhere. Moreover, the particular blends of language learning, cultural practices, domestic rituals, and retold intergenerational stories they experienced in lockdown were significant for their identity formation—both their sense of self and sense of belonging. Many children talked in ways that suggested lockdown had provided them with new or intensified experiences of learning about and through their heritage language and culture. Some children acted as teachers of older and younger family and whānau members and sometimes it was they who initiated family and whānau practising of language and culture through their own desire to learn more.

During lockdown, children were challenged in how they marked both cyclical events such as birthdays, Anzac Day, and Easter, and unanticipated life events such as the illness or death of a family member or pet. Lockdown forced them and their family and whānau to make adaptations to their customary ways of marking special occasions. It was evident from their accounts that many children gained a rich understanding of the principles, traditions, and cultures that underpin these events. Children were able to talk about how they individually reconceptualised and experienced the life events, but also about the emotional effects of life events on family and whānau, and the importance of family and whānau modelling and support for their own experience.

Emotional dimensions of learning were evident throughout children's accounts. Children talked about how they learnt to understand, control, and work with their emotions. Lockdown itself was a time of

heightened individual and collective sensibilities in the household bubble. Consequently, children became more acutely aware during this period of the full range of their emotions. They variously described feelings of empathy, anxiety, anger, boredom, frustration, contentment, happiness, joy, and "flow". They were also able to articulate the strategies they developed to support themselves, and sometimes their siblings or parents, through both stressful and relaxed times.

In addition to the widespread use of digital technologies to access and participate in schoolwork and watch educational television during lockdown, many children described using them for leisure, in their personal non-formal and informal learning activities, and for communicating and staying in touch with schoolmates, friends, and family and whānau members outside the household bubble. Browsing, watching instructional videos, gaming, using editing and social media applications to create and share digital content were frequently mentioned, as were broadcast and streamed content services. Some children described choosing to be online for extended periods of time, some others having their access monitored by adults. Most children described spending their free time during lockdown on a mixture of online and offline activities and passive and active pursuits. Children talked enthusiastically and knowledgeably about their learning through digital content, games, and communication technologies, and also about discovering new uses of technologies, alone, through observation of others' actions online, or with the assistance of more proficient siblings or adults in their household.

In their explanations of how they learnt through the course of lockdown to exert greater influence over and understanding of their schoolwork, leisure, and housework activities, children demonstrated self-directed and self-regulated learning. Lockdown produced situations that required and enabled children to use their own resources, ask their own questions, and to be motivated to action by these questions. Children identified and took opportunities to participate collaboratively or on their own in real-life, real-time opportunities for personally meaningful learning.

Many scholarly and mass media commentaries on children's experiences of lockdown have been characterised by what children were missing out on, what they would be unable to do, and the harm or delay to their learning that would occur as a consequence. Children's own largely positive accounts of their informal and everyday learning during lockdown act as a powerful and necessary rejoinder to what adults have assumed would be children's experience.

This report foregrounds children's own largely positive experiences, words, and reflective analyses of learning within their household bubbles during lockdown. Certainly, some children talked about the constraints or restrictions imposed by lockdown but many more children's accounts conveyed a sense of "freedom". This included freedom to determine what and how to approach their learning, freedom to roam, freedom in one's use of time, and freedom to make choices and decisions. Collectively, one might reasonably describe these as an experience of *freedom to learn*.

Their accounts reveal children's ability to adapt readily and pragmatically to the circumstances in which they find themselves and to find and create solution-focused approaches to their learning—in all its many dimensions—within a cognitively, affectively, and socially challenging setting. In short, the children we spoke with revealed to us their natural ability to survive and thrive. They reinforced our view that children can and do learn capably and with agency in their childhood worlds. Alone and with the support of family and whānau, children can and do create the necessary conditions for learning in challenging times.

Introduction and overview of the research

> *Take care of our children. Take care of what they hear, take care of what they see, take care of what they feel. For how the children grow, so will be the shape of Aotearoa.* (Dame Whina Cooper)

This research set out to explore children's experiences of learning during the national COVID-19 lockdown in Aotearoa New Zealand in 2020. Much of the scholarly analysis and mass media commentary on children's experiences of COVID-19 lockdown, locally and internationally, has been written from the perspective of adults, and about issues that are of principal concern to adults. Common assumptions in these adult analyses and commentaries are that: (i) children have irrevocably "missed out" or "fallen behind" on essential formal learning during lockdown, in both quantity and quality; (ii) informal learning in the household bubble is a poor substitute for formal learning at school; and (iii) that children's informal and everyday learning during lockdown has little or no relevance to their formal learning at school.

In this research study, a key aim was to document and analyse children's experiences of their informal and everyday learning during lockdown, from their perspectives, and in their language. The study adopts a strengths-based approach to examining children's learning, based on the position that children are shown to be inherently capable and adaptable learners in their childhood worlds. Our assumption was that the household would in actuality provide rich opportunities for informal learning through the children's participation in the ordinary activities and relations that emerged in the bubble. We believed it would be possible to capture children's many learning strengths and positive learning experiences of and during lockdown, provided only that we made the effort to see and document the everyday world through their eyes.

To access these childhood worlds we used a group art-making activity as a form of stimulated recall of memorable aspects of the children's experience of lockdown, together with a semi-structured interview with each child to enable them to choose which and how much of the recalled aspects of their lockdown experience they wished to share with us.

Conceptual framework and methodological approach

The conceptual framework and methodological approach of the research had three primary considerations.

First, we were committed to pursuing a Child's Rights agenda, acknowledging that children have the right to express their own understandings of their learning given they know how they experienced their time, what they valued, and how they learnt during lockdown (i.e., not their families and whānau or their classroom teachers on the children's behalf). Article 12 of the United Nations Convention on

the Rights of the Child (UNCRC), ratified by New Zealand in 1993, articulates children's right to have a say in matters that affect them. Consequently, children's views are valid in their own right, and their experiences, interests, and aspirations must be fully considered in matters of their own learning.

Second, the research takes a "student voice" approach to the methodology and conceptualisation of the research, noting that children's rights and student voice are not one and the same. A voiced approach requires methods that provide appropriate space and enable children to give their voice (in this instance through visual art and spoken word). Additionally, as part of the research commitment to facilitating meaningful student voice and children's right to authentic participation, a Children's Research Advisory Group (CRAG) was recruited prior to the main study, comprising several children from the same age range as children in the study.

Third, the research foregrounds the *learning* children experienced in their formal, informal, and everyday contexts within lockdown through the everyday practices and relations in which they participated while in their household bubble. Consequently, while "school learning" was self-evidently an important contextual factor in this research, our primary focus was the children's informal learning at home, in the broadest and most inclusive sense of the term.

What do we mean by "learning"?

The report is based on our explicit and implicit assumptions as researchers about what learning is. Our view of learning in this research is broadly sociocultural. It is informed by theories of learning and the learner drawn from both kaupapa Māori and the Western tradition.

For example, the English language version of *Te Whatu Pōkeka* (Ministry of Education, 2009) describes three kaupapa Māori concepts, articulated by Charles Royal, that refer to generic phases of children's learning and growing:

> Mōhiotanga—what a child already knows and what they bring with them highlights new beginnings, new knowledge and new discoveries;
>
> Mātauranga—This is a time of growth for the child. It denotes a phase of increasing potential, negotiation, challenge and apprehension when dealing with new ideas; and
>
> Māramatanga—This is when a child comes to understand new knowledge; a phase of enlightenment, realisation and clarification. (p. 49)

Moreover, explain the authors, what the child brings to the learning context "includes not only their inherent strengths but also their traditions and history, their whānau and their whakapapa" (p. 49). Learning in this sense is irredeemably social and cultural, and links past, present, and future. The child cannot be understood solely as an individual but only and also as an integral member of their whānau. Equally, learning itself cannot adequately or fully be understood as an individual activity but, rather, needs to be viewed in terms of the reciprocal relations and interactions of teaching and learning, that is, as ako.

Relatedly, in the Western tradition, a sociocultural perspective on learning is interested in the ways the person's learning takes place within their cultural, historical, and social contexts. Learning occurs both within the individual and between people:

> All learning implies the integration of two very different processes, namely an external interaction process between the learner and his or her social, cultural or material environment, and an internal psychological process of elaboration and acquisition. (Illeris, 2009, p. 8)

For Illeris, in the internal process, the content of learning contributes to the learner's understanding and capacity. Content includes not only knowledge and skills but also "opinions, insight, meaning, attitudes, values, ways of behaviour, methods, strategies etc." (p. 10). The learner is trying to develop the ability and capacity to deal practically with life challenges. In Illeris' model, the incentive to learn "comprises elements such as feelings, emotions, motivation and volition" aimed at achieving continuous mental balance and sensitivity (p. 10). The third dimension of Illeris' model is the interactive impulse to learn, and "this may take place as perception, transmission, experience, imitation, activity, participation etc." (p. 11).

Rogoff's (2012) concept of "intent community participation" as a form of informal learning practice is also relevant to analysis of the interaction process between the child and their environment that is a major focus of this research. She states, "This type of learning occurs when children are included in a wide range of community activities and observe, contribute, and receive support and feedback from others" (p. 45). Lockdown household bubbles are just such communities.

Finally, our view includes both adult and child perspectives on learning. This project drew on a recent study in Aotearoa New Zealand of primary school-age children's own conceptions of their informal and everyday learning using the CRISPA Framework (Bourke et al., 2018a). CRISPA comprises the dimensions of Culture, Relationships, Identity, Strategies, Purpose, and Affect (or Emotion) which, together, provide a heuristic to explore children's varied conceptions of their learning and learning relations, and the relative sophistication of their conceptions.

Ethics approval

A full ethics application was reviewed and approved by the Massey University Ethics Committee and by the NZCER Ethics Committee. Information sheets, and consent forms, for the CRAG, child participants, and their parents were sent to all potential participants. All children we interviewed provided written parent and child informed consent prior to the day of the interview. At the time of their interview, researchers verbally re-confirmed with each child consent and willingness to proceed.

Children's Research Advisory Group (CRAG)

The CRAG was recruited from a school not in the main study. The purpose of the CRAG was to provide feedback on the value of children's involvement in the research, advice on the questions developed for the interview schedule, and whether additional questions needed to be added. The CRAG took place prior to the research with four of the researchers present. The group comprised four Year 8 students (two girls and two boys).

The CRAG children described how they initially experienced stress on learning about the lockdown, but that they quickly adjusted and learnt new things about their family and whānau, themselves, and their learning. Their contributions provided useful insight into the care and sensitivity we needed to use in the main study interviews with all children.

The children provided advice on the interview questions that were revised for the main research. The CRAG participants judged that other children would find participating in the research fun and would be interested in sharing their opinions and having an impact for others.

They considered that some children might choose not to participate if they wanted to protect their privacy, if they did not enjoy school learning, if something bad had happened that might bring back bad memories, if they did not enjoy lockdown, or if they experienced social anxiety.

The CRAG participants believed children should have their say in the research because they have insider knowledge, and it might help improve how we do things. They also noted that everyone has a view on whether lockdown was hard or easy, and that people should know what life was like for children.

Participants

Lockdown occurred in Term 1 and Term 2, 2020. Recruitment and data gathering for this study took place in Terms 3 and 4. Recruitment and data gathering for this study took place in Terms 3 and 4. Recruitment took place through the schools. Participating children were visited on site at their schools, or at their homes if that was the family and whānau preference.

The research team carried out 178 interviews with children in Years 4–8 across 10 different schools. The majority of the children interviewed identified as NZ European (46%) followed by Māori (26%), Pacific (15%), and Asian (8%). The sample also included children who identified as German, Sri Lankan, African, and Other European (see Table 1).

The number of participants in each school varied from seven (school 4) to 34 (school 1) (see Table 2). Through existing contacts of the research team, recruitment targeted diverse, lower-socioeconomic, English-medium schools in the lower half of the North Island. The final sample covered a range of deciles. Eight of the schools were urban or suburban and two were semi-rural.

The majority of interviews were school-based (n = 165), although we gave the option of home- or community-based interviews, or interviews via Zoom. Three families chose home interviews, and a further 10 children opted for Zoom interviews.

Children from the younger target year groups, Year 4 (n = 49) and Year 5 (n = 50), together comprised more than half of the overall participants (55%). The smallest proportion of participants was from Year 7 (n = 17), with 37 participants in Year 6, and 25 participants in Year 8 making up the rest of the sample. All schools included girl and boy participants. Of the 178 children interviewed, the majority (57%) were girls (n = 101). Boy participants constituted 43% (n = 77) of the sample.

TABLE 1 **Children by ethnicity**

Ethnicity	Total (n =)	Percentage
NZ European	82	46
Māori	46	26
Pacific	27	15
German	1	<1
Sri Lankan	1	<1
Asian	15	8
African	4	2
Other European	2	1
Total	**178**	**100**

TABLE 2 **Children by year group**

Year group	School 1		School 2		School 3		School 4		School 5		School 6		School 7		School 8		School 9		School 10		Chln (n =)
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
Year 4	1	0	1	2	1	2	5	2	3	6	8	4	5	4	3	2					49
Year 5	1	5	3	5	5	2			3	3	3	1	6	4	5	1			3		50
Year 6	7	6	2		2				5			3	3	5	1	1				2	37
Year 7	3	2	1									1			2		6			2	17
Year 8	3	6	1	1								2			1	1	7	2	1		25
Totals	15	19	8	8	8	4	5	2	11	9	11	11	14	13	12	5	13	2	4	4	178

Artwork activity

We began the research at each school by inviting the children as a group to create individual artworks with the collage materials we provided (these form the illustrations that appear in the various sections of this report). The artworks were to depict their activities at home during lockdown (we consciously avoided use of the word "learning"). We showed examples of collages we had made of our own experiences during lockdown or made our own artworks alongside the children. The purposes of the art activity were to: (i) help children to remember what they did during lockdown as they chatted informally about these events with their peers and the researchers; (ii) begin to build relationships with the researchers in a fun and non-threatening environment before the individual interviews began; and (iii) produce an artefact that would help as a conversation starter and prompt for children during the interviews.

Some children depicted many different aspects of lockdown, while others chose to depict just one or two important events. Some children depicted events they would have liked to have happened during lockdown but that did not occur in reality, or home-based resources that they would have liked to have had access to. These included examples such as a skylight in the bedroom with stars showing through, and snow (when lockdown actually occurred during late summer). In some interviews with younger children it became apparent that, several months after lockdown, they occasionally blended together lockdown and pre- or post-lockdown events in their accounts.

Interviews

Given we had a team of 11 interviewers who worked in teams across the schools, it was important to ensure continuity and consistency based on a common interview schedule (Appendix A). The research team agreed strategies for follow-up, prompt, or probe questions in addition to those on the interview schedule. For example, we knew from previous research that a simple, highly effective prompt with children is, "Tell me more about that".

We were aware that the lockdown could have included an event or period of time that, for some children, evoked memories of anxiety, trauma, or illness. While it was likely that families would decide not to participate if they deemed the child would not benefit from the research, a detailed protocol was developed for researchers when interviewing children. Its purpose was to ascertain

the level of support required in the event a child's response necessitated further action or input. These protocols were developed with the support of a registered psychologist to ensure the safety of children. The protocol guidelines were to be initiated if a child made a statement, or the researcher observed a visual response from the child, that raised a concern about the child's wellbeing. The protocol enabled the researcher to determine the level of risk to the child (low, medium, or high) and the guidelines provided advice on how to engage with the child and whether and how to take the matter further if the situation warranted it. In the event, the few concerns that were identified by interviewers for team discussion were minor in nature.

Data analysis

All interviews were recorded and later transcribed verbatim. Following transcription of the audio recordings, the interview transcripts and images of each child's artwork were uploaded into the NVivo12 software program. We took a broadly grounded approach to the data analyses, with no pre-determined themes, categories, or vocabulary. The themes reported here were derived through iterative individual and collective coding of the data by all members of the research team working in two groups and also as a combined whole team. Each group drafted a narrative account for an initial sample of codes using a subset of coded interview transcripts. The whole research team met together and via Zoom to discuss the draft narratives and how best to write them in a way that privileged the learning that occurred and the child's voice.

Once a prelimary framework of more than 50 codes had been identified across the entire dataset, the researchers met as a whole team in a workshop facilitated by an external expert to review the codes, rename and combine as necessary, and to finalise a Codebook with 34 codes and descriptors for each code (Appendix B). The 34 codes were then clustered into seven themes as identified in the results section. During the course of writing the thematic narratives, some of the codes were moved from one theme to another to better maintain the coherence and integrity of the theme.

The final seven themes were:

1. Learning new structures and routines in the bubble
2. Learning from and with whānau
3. Learning about and through language, culture, and identity
4. Learning through life events
5. Emotional dimension of learning
6. Learning about and through digital technologies
7. Self-directed and self-regulated learning.

Data presentation

For this report, we made the decision to apply standard orthography and to lightly edit direct quotations from the children's interview transcripts. We did this to remove spoken word conventions such as "umm", "er/ah", "sort of", "actually", and "like" which can interrupt the flow of the child's explanation when seen in written form. We removed some repeated words or phrases if the child simply self-corrected or was trying to find a better word to express what they wanted to convey, where this did not alter the meaning of the statement. We removed some short prompts or probes from the researcher where these appeared to add nothing to the discourse exchange. Finally, we combined successive extracts from some responses where it helped to unify a child's complete description or explanation of a phenomenon.

This report provides a holistic representation of children's worlds during lockdown. The data are reported by theme and sub-theme. We have not reported the data by child ethnicity or individual school. Quotations are identified by year group and gender (e.g., Year 4 boy), as confirmed with the child during interview.

Structure of the report

The conceptual framework developed for this study commits us as researchers to prioritising children's own experiences, views, and descriptions of their informal everyday learning. Consequently, we have structured and written the report to enable the reader to engage directly with children's lockdown bubble worlds. Based on our analysis of the data, we have structured this engagement by section, or theme, and sub-theme.

The contributing sections are rich with direct quotations from the children. Wherever possible, we have used quotations that reveal something of the child's own intentions, reasoning, and decision making. Our researchers' thematic narrative weaves together the children's words within each section to highlight patterns and variation of children's experience in plain language.

At the end of each section there is a short "making sense" commentary that teases out from the narrative some relevant links between what the children collectively told us about their learning in relation to the theme, and what we already know from contemporary learning theory. Positioning the sense-making at the end, rather than the beginning, of each section is also consistent with the view that, in so far as it is possible in this genre of report, the reader should engage with the children's views of their childhood world.

The conclusion briefly summarises the main learning for adults from the report. Future scholarly publications from the study will investigate particular aspects of children's lockdown experience in greater depth.

Learning new structures and routines in the bubble

> *Basically at school you learn about stuff to help you with, if you're going to get a job and stuff, they're trying to train you for that, but at home it's like cooking is work. If you're ever going to get further in life and you want to save money, you can do home cooking and not always go out for tea. You can cook for yourself and you don't have to rely on other people to do things for you. At school they don't really teach you about doing housework and cooking, stuff like that. But at home I learnt some of that stuff, because I had to do it myself. That was quite a big difference.* (Year 7 boy)

In this section the children identify what and how they learnt informally through lockdown in terms of daily routines and structures in their household bubble. Some children were entirely dependent on adults or older siblings to create structure for them, while others discovered what worked best for them in their particular household and schoolwork contexts.

Newly developed routines and structures were identified by children and their families and whānau as they grappled with different conceptions and experiences of "time" and "day" and the challenges and opportunities of being "locked down". This created learning opportunities through new combinations of indoor-outdoor and active-passive ways of being, the obligation to undertake chores and housework, choices about when and how they ate, the type of activities, tools, and artefacts they engaged with, and even when and how they undertook their schoolwork, and who determined this.

School day routines

Schoolwork was typically referred to by the children as "work", rather than "study" or "learning". The unknown aspects of going into a lockdown bubble were mediated somewhat because it began during an end-of-term school holiday.

Due to the short notice of national lockdown, when the new term began schoolwork for many children was limited in scope and consequently the major difference in structure and routine for the child was adjusting to a much shorter work day, or to a narrower range of set schoolwork tasks:

> Instead of doing it for 6 hours, I would only have to do it for like an hour and a half and then I would be finished. I had the normal stuff to do but there wasn't really any other stuff 'cause it was just writing, maths and literacy and not anything else. (Year 8 girl)

For some other children, having access to social media applications such as *Messenger Kids* meant that they could still connect easily with classmates and friends both to talk about homework and also to play with each other. Most of the children spent the schoolwork day in the home and in its

immediate physical surroundings with one or more caregivers on hand, most frequently their mother, to help maintain the predictable study–interval–study timetable routine:

> So Mum's school is nothing playing. Math, writing, and then eating which is fruits, healthy food, PE, and then literacy, and then music time, but then play time. And then morning tea, and then math. Prototec and Prodigy. Play time, eat and then the last thing is make a lunch. (Year 5 boy)

Some children also had to learn to accommodate schoolwork within a more complicated social bubble arrangement, such as a parent who was an essential worker, or who worked through the day online, or a multi-generational household where everyone was doing their own thing:

> There was [my brother], my dad was busy doing work, my mum was on her phone in bed, and my grandma and grandpa were downstairs. We were on devices the whole day. (Year 4 girl)

Lockdown afforded children the opportunity to explore and adjust to the implications of having greater self-determination of their schoolwork strategies, and to personalise the way they engaged in it:

> I liked it a little bit more because I got to listen to music but it was kind of harder doing writing so I turned it off during writing. (Year 6 boy)

Such personal choices gave them insights about the tacit effects of normal classroom routines and, especially, of peer relations on the amount of schoolwork they complete, and how long it takes:

> It seems that I had more time on my hands because at school I sit next to my friends so it takes me longer to do my work because I like talking to them but at home I just get through the work, get it done. (Year 8 boy)

Some realised that they had to find their own ways to make a constructive space for learning in the bubble:

> And I'm basically in the backyard, on my trampoline, 'cause it's always been noisy with the people I've had inside, so I have to always go outside for my learning 'cause it's peace and quiet. (Year 4 girl)

Older children commonly talked in ways that suggested they were expected to take responsibility for organising their own schoolwork day, and in doing so discovered that they could positively influence time and workload challenges:

> I was definitely learning a lot less, because I didn't have as much resources and I didn't learn as much. But I thought it was definitely a lot less stressful than school learning was. Firstly, I was in the comfort of my own home and I could listen to music and grab snacks if it'd help me focus. And at any time, I could just take a breather, put it down and then come back. So, it was easier for me to keep my focus. (Year 8 girl)

Some of the younger children also enjoyed the flexibility that lockdown offered; for example, by getting an early start to the schoolwork day. Some others were encouraged to be responsible for particular tasks associated with their schoolwork:

> I woke up in the morning really early so I could watch the home learning TV. It's because it only went on at 9 am and I was, like, I better not wake up too late, otherwise I'll miss it. 'Cause my mum likes me watching it because I can't just do nothing. (Year 4 girl)

Some children disliked the absence of clear boundaries between the "schoolwork" and "not-schoolwork" parts of the day, but did enjoy having multiple family and whānau members around with whom they could spend time during the day and from whom they could seek help when needed.

Feeling greater autonomy over school day routines was valued by the older children in particular:

> Doing schoolwork at home. I just enjoyed it more because I did it in bed and I could do it for as short as I want or as long as I want and it was just more sort of dictated by me, not in a bad way but a good way. (Year 7 boy)

Having the freedom to organise the day to suit one's personal energy levels and need for rest or breaks was viewed more positively than working to adult-determined deadlines at school:

> It was way easier than having to get up, because usually at school I'd be tired for the first hour or two. I liked that I could do work whenever I wanted. At school you've got to do things by a certain time or you've got to do it over lunchtime or something, but at home I could do it, have a little break, go on my tablet a little bit and then go back to the work that I was doing. (Year 7 boy)

Exercise and outings

Children generally enjoyed some degree of freedom to move in and out of the home as they wanted, and to mix up study, play, and exercise activities during the day. Children exercised both individually and as a family and whānau unit. Children became acutely aware that exercise and being outdoors promoted physical and mental wellbeing in the bubble:

> We played on the trampoline every single day except for on rainy days we stayed inside and played with our soft toys. Every time I got stressed in learning, I got to go outside and jump on the trampoline. Only 5 minutes break, and then I'd go back. It was my idea. I was getting really frustrated, and I almost threw my book on the floor because I was so angry, I was doing algebra. (Year 6 girl)

The absence of road traffic during lockdown meant that some children were given more freedom to roam. One child would confidently take early morning rides as far as the house where her friend used to live:

> I'd just go there as my stop sign and then just ride back home. I would just go on my own, alone. I would always wake up and get ready and my parents would still be sleeping. I'd always get back there just when they woke up. (Year 5 girl)

Other children went on regular exercise outings such as running or biking with one or other parent. In contrast, one child whose father lived elsewhere commented on differences in local outings in Levels 3 and 4:

> When we were in level 4 I couldn't see my Dad so we mainly did things with my Mum but when we were in level 3 my Dad would come down every now and then just to spend the day with us or something. He would take us down to the park. (Year 5 girl)

For some of the younger children, counting teddy bears displayed in windows was an incentive to exercise:

> We went out for a lot of walks and we walked around our block and we counted how many bears we got and there was 55. (Year 4 boy)

For some others, more tangible incentives were needed:

> My brother wasn't so keen. He said 'I'll only do it if I get a reward'. I just thought to myself, at least I'm with my family and it's better than being on my device. (Year 6 girl)

Memories of supermarket shopping in Level 4 lockdown were limited to travelling and remaining in the car while one adult went into the store. In Level 3, some children did participate. One girl realised that, due to the product sanitising protocols in operation, if she put items in the cart they then had to be purchased!

> Basically, we would just go in there and I would always choose out my own stuff and I'd just put it in the cart. And my Mum would have to agree with it. (Year 5 girl)

Chores and housework

Children commonly helped out around the home during lockdown. For some, the experience was simply of doing more chores than usual:

> I would help clean up. I would empty the dishwasher, stuff like that. That was usual but we did it a lot more since we were at home a lot. (Year 6 girl)

For others, lockdown provide novel experiences:

> We helped my grandparents out a little bit because they couldn't go out anywhere or else they might get it [Covid]. Going to the supermarket for them and things like that. (Year 6 boy)

Also, being at home with an ever-present working father throughout lockdown was a new experience for some:

> I used to help my dad. Because he had to work like non-stop so I would bring him cups of tea and stuff. He is now a team leader so is doing a role on a computer so we would bring him stuff if he wanted or grab him nuts. (Year 6 boy)

Some children could recall the sheer physicality of housework:

> I cleaned my room, I did some vacuuming. I'm getting $15 next week for doing a lot of jobs. I always do jobs. The wood one took about an hour and 30 minutes. The drill was heavy. My arm was sore and my legs were sore. (Year 4 boy)

But for some, doing chores was just a fact of life they had learnt from an early age:

> The cleaning. I washed the dishes, vacuumed, scrubbed the bathroom, scrubbed the toilet, mopped the floor and cleaned out our wardrobe. Just me, and my older brother. I'd done it before. I knew how to do it when I was just five. (Year 5 girl)

For others, doing housework appeared to be a relatively new experience, and took them longer to be able to appreciate the satisfactions it provided:

> I had so much chores. Vacuum the whole entire house, make the bed. Make my bed, pull the curtains in the house, make the little ones' breakfast. And then I had to take out the washing off the line. I had to clean up the toys, I had to clean up my room, too much. Yeah, I enjoyed it but I wasn't really happy at the start. I just did it. My mum just told me to do it and my brother and sister helped me with the front, because they make all of the mess and I have to clean up the front. Even though I don't make the mess. (Year 4 boy)

In some households, relatively modest chores were allocated to children according to a rota:

> Every day we had to do the number and then whatever one we do we had to do that. It was chores. I like doing the washing because it's the easiest. There's also doing the dishwasher, cleaning up your room and looking after Hershey, and give her dinner. (Year 4 girl)

In contrast, for the rural and lifestyle block children, lockdown provided opportunities to contribute to everyday farm work around the property, and this work differed in scale, complexity, and responsibility from, say, housework, gardening, or looking after pets:

> Sometimes, I did some jobs without being asked once in lockdown. So I fed the teenage ewes and rams and basically I also fed the cows without being asked. I also got to drive the digger into the shed. I've also done it with the quad bike my Dad has. I drive it to the council paddock, which has all the beehives and stuff and then I'm kind of an excellent driver on the quad bike so I'm really good at parking in the shed. (Year 5 boy)

Eating routines

For one child, it took a while to appreciate what lockdown would mean in terms of having enough food to eat:

> I do remember having to go grocery shopping. The first time that we heard that we might be going into Level 3 or 4, Mum spent 4 hundred something groceries on 2 weeks of food. And that lasted about 3 or 4. I thought Level 4 and 3 would be 'no leaving the house', 'you can't go out' or anything. You'd have to stay inside and if you wanted to go out, you'd only be able to go in your backyard and not go grocery shopping or anything. But when I heard it wasn't that, I was better because if we run out of food I'd be like 'Mmm'. (Year 5 girl)

In the home, the novelty of readily available snacks while doing schoolwork was commented on by some children:

> We were allowed to have snacks while we were doing our work. Normally at school you are not allowed to have snacks while doing your work. And you can watch some TV as well while doing work as long as it doesn't distract you. (Year 7 boy)

More broadly, eating and the pleasure of eating food, alone or together, and in unusual quantities or variety appeared to take on a greatly heightened importance and sensuousness for some children:

> Food was a massive part, I loved food. We had lots of good food during lockdown. For pudding two nights in a row we had this giant chocolate éclair that my stepdad had made and it was giant. Lots of nice meals. (Year 8 boy)

Making and eating special treats during lockdown evoked pleasurable memories of spending time together as a family and whānau for another, younger child:

> We all got to make our own [sundaes]. Mum got the ice-cream, so there was heaps, there was chocolate, goody-goody gum drops, vanilla and cookies and cream ice-cream and there were nuts, melted Moro bar sauce, the whipped cream in the bottle. I went mad with whipped cream. I just went super high (laughing). (Year 4 boy)

The lockdown bubble provided opportunities to try new dishes and unfamiliar ingredients or tastes:

> We started Hello Fresh and one of the meals came with a chilli and I thought it would be fun to try it. I tried the red chilli and that didn't go so well, I ended up eating an ice block. I tried the green chilli but that wasn't as bad as the red chilli. (Year 8 girl)

Lockdown also gave some children more opportunities to try out their cooking abilities, or to commend a sibling's culinary knowledge and skills:

> Sometimes it's just the two of us and sometimes during lockdown [my sister] would be the one to cook 'cause she has amazing recipes from her high school. During lockdown she made these delicious chicken quesadillas and she made amazing stuffed potatoes. They've got cheese, ham and capsicum. They're delicious! It was mainly her and Dad. I am not the biggest, I don't even know how to make those so I left it to [my sister] and Dad. (Year 6 girl)

For one child (below) the image that came to mind was eating food from the farm, and for another child, the need to find good "fast food" and "favourite food" options in the absence of pre-packed school lunches were a strong lockdown memory:

> I got really hungry because I wasn't really doing much so I just decided to eat a bunch of food. I just found whatever I wanted that was quick and easy. Most of the time I had two minute noodles. Most of the time I would have it on my own, but there were sometimes that no one was busy so my brother and I could make the lunch and then we could have it with our Dad. His favourite, baked beans and eggs. (Year 5 girl)

PICTURE 1. **Our animals**

That's our neighbour's fat cat. And my butterfly and my cow because we ate her. Her name was Dolphy and we ate Bambi. And we had a cow called Bubblegum. (Year 5 girl)

Making sense

These children's accounts of how they and their families adapted to the opportunities and challenges of living together in a lockdown bubble are consistent with the view that informal teaching and learning are: (i) fundamentally embodied experiences; and (ii) mostly interwoven throughout the fabric of ordinary, unremarkable everyday activities (O'Neill & Bourke, 2014). In this sense, children learnt how to cope and thrive by "doing" lockdown.

Each family and whānau bubble drew on a range of material and non-material resources and also on their existing funds of knowledge gained through the messiness of ordinary life (González et al., 2005). All these helped them to collectively negotiate their way through lockdown.

Unremarkable aspects of family and whānau life such as eating, housework chores, and exercise took on heightened meaning and purpose during lockdown. Practising new routines and developing new habits in the household bubble provided multiple opportunities for children to gain richer appreciations of their learning strengths (Bourke et al., 2018a).

For the children, however, it was changed patterns of schoolwork and the schooling day that often radically altered their appreciation of how they might more meaningfully exercise autonomy and self-determination in their learning.

Learning from and with whānau

> *My mum is Samoan. In Samoa she had a different learning. She learnt different ways than how New Zealand learn, so I learned a different way, like how my mum taught me.* (Year 5 girl)

In this section, we explore how the children engaged with their learning alongside their family and whānau. The children we interviewed described family and whānau dynamics in their bubble that involved varying combinations of people, each supporting learning in different ways, including intergenerational learning.

The shift from school to home learning during the lockdown period meant that, overnight, many parents and siblings, and sometimes grandparents or other extended whānau members, became teachers to other children in their household. This made the learning experience different from school in many ways. Lockdown allowed parents to become more familiar with what their children learn at school. It also provided opportunities for children to be taught a range of different, everyday skills by their parents and wider family and whānau, and consequently to be guided by these others' expertise and interests. In some cases, children also took on a teaching role, sharing their own knowledge with their siblings, parents, and wider family and whānau members.

Time with family and whānau

Physical proximity, shared confinement, and the inter-dependence of all family and whānau members were key features of lockdown learning. While adults often supported the formal learning of their children, at times children supported the learning of their parents; for instance, with regard to "task expectations" of school-based work. One child noted that he helped his father learn:

> When I was doing my homework if he didn't understand it, I'd try to teach him and tell him what it is. (Year 6 boy)

Children often relied on adults (and sometimes older siblings) to keep them connected to their formal schoolwork and established routines. One child noted that this also included where the learning was to take place; in this instance, the bedroom:

> At home Mum lets me go into her bedroom and then we would go into ours. She would tell us to come out an hour later to see how much work we had done. If we hadn't done enough, we have got to do more. If we have done how much work we need to do that day we would go have some free time till the other person is done. (Year 6 boy)

Some children found that school learning at home was quicker and more efficient as they were able to negotiate how they learnt best, with the help and support of family and whānau members who knew them well:

> And what's also different is they [parent] want to see how you do it. Instead of the teacher telling you, 'Oh you do this and that', you have to figure out what you have to do. I had some help because I didn't know how to turn fractions into decimals and decimals into percentages and percentages into fractions. I just didn't know. So, I had help from my brother. And now I'm the smartest in my class! (Year 6 boy)

Learning depended on family and whānau members' own experiences of schooling and learning, and these adults often used different strategies from those of the children's teachers at school:

> What [my grandma] does is she shows me step by step instead of just telling me the equation and then helping me. *(Is that an easier way to learn?)* Yes, because you don't have to just think of—just try to copy it by looking at it. But if you do it step by step it's more easy. She shows me at the start and then does it step by step. (Year 4 girl)

Some children recounted teaching or facilitating the learning of their younger siblings, or, in some instances, supporting the learning of older members of their family and whānau:

> I was teaching my Mum a bit of some piano. She really wanted to learn the piano because there are so many songs she wants to play so I have been helping her a bit. I have just kind of been showing her where to put your hands and positions and how to learn it easier. (Year 7 girl)

PICTURE 2. **Online math**

So, we had to do this online math and I was really bummed out about that but Dad helped me and he taught me an easy way to get it and learn it and to get it correct without a calculator and all that. Basically I had to do a lot of reading [with Dad] and that sort of taught me how to read a bit faster. (Year 5 girl)

Children used their own knowledge and strategies to help others in their household learn new things, sometimes taking on the role of teacher:

> And then my brother got the same maths, so he definitely needed help, and I could barely understand it. Then when I was taught my dad's way, I did understand what they meant, it was just a little confusing at the beginning. So I was finished mainly before 9.00am, and then sometimes I would do some in the evening if I was just too tired. It was pretty quick and easy for me. I never found anything really super challenging. (Year 6 girl)

Life skills

Children learnt life skills from their parents and family and whānau. These ranged from simple concrete tasks such as learning how to sew from a grandmother to more complex abstract skills that involved helping their family and whānau cope with lockdown. Many of these skills were either taught by family and whānau members or learnt alongside them "on the job" in an apprenticeship style of learning:

> That kind of learning is like life learning, or sports learning. Life learning is different. When I'm at school I don't really care about studying because I already think that I can do lots. (Year 6 boy)

One child learnt woodworking skills from his father while helping him set up basketball hoops. Children were also involved in learning skills relating to more challenging tasks such as setting up a security system for the home and helping a father lay down concrete:

> I learnt how to lay concrete down because we were doing a new driveway. So, I learnt how to lay the concrete down and then also mix it and also probably learnt to build while we were building the soccer goal. (Year 8 boy)

As children were able to spend more time at home with their family and whānau members during lockdown, they had more opportunities to learn life skills, some independently, but most from or alongside their family and whānau. Children also learnt skills relating to basic household tasks:

> My mum taught me how to do the washing machine. I'm still learning it. She taught me the dishes. (Year 6 girl)

The impression given in many interviews was that the lockdown bubble intensified or accelerated the expectation that children would take on substantive responsibilities in these areas. As a consequence, children engaged in developing and expanding their existing everyday skills:

> I knew already how to cook, but I didn't really know baking. My dad is a chef, so he taught me about baking. (Year 7 girl)

Some of the skills that developed with help from family and whānau were related to the child's existing interests:

> I also did some sewing. I've always liked sewing, but I always just start projects and then have a lot of unfinished projects. I didn't do too much in lockdown. I should've done more. I've been sewing an elephant, my mum helped. She taught me what the stitches were. (Year 7 girl)

Other life skills learnt from family and whānau were related to the environment; for instance, one child spoke about learning how to fish during lockdown from his father. Children were also involved in various gardening tasks with their parents and whānau:

> I plant some stuff because I put some flowers down, and I do a lot of gardening so I put some gardening gloves on. I have planted a lot of peas and corn. My peas are starting to grow and I can start taking them off and eat them. I haven't put them in a food yet. Learnt how to garden from my mum. (Year 5 boy)

Some children were involved in learning novel life skills from their family and whānau that extended beyond daily routine tasks or chores:

> I learnt how to cut hair. My uncle owns a barbershop so he gave me tips and stuff, how to cut hair, so I started to cut my dad's hair. (Year 6 boy)

Children also learnt valuable interpersonal life skills from their parents and whānau, such as how to relate to others or to help their family and whānau members through tough times:

> I think once my Mum cried, and I made her feel better. She was crying because she didn't want to be in lockdown anymore and I told her that it would be okay, it wouldn't last forever. (Year 4 girl)

Children also told stories of how they learnt to get along better with their siblings during lockdown:

> My sister, she was stressed. I told her not to. I made her a smoothie and that calmed her down. I taught her how to do times tables. I made these cards, with the answer on the back and the question on the other side. I had a whole list, then the answers. I flipped them over. If she gets it wrong, she loses one card in her pile, if she gets it right, she gets to keep it in her pile. Sometimes my sister said, 'No I want mum to do it' because I'm annoying to her a lot of the times. She's annoying to me a lot of the time too. We have a bunk bed, she was on the top, and she was snoring all the time, so I had to go sleep in mum and dad's bed. (Year 6 girl)

Since children were limited in who they could interact with during lockdown, they found ways to relate better to other people around them. This allowed them to work through conflicts and help their family and whānau members through stressful situations. Some children reflected on the deeper lessons they had learnt from such experiences, such as how to persevere and be resilient:

> You have to be very resilient. A couple times that we tried to put the mesh in, it didn't really work, so we tried two different ways. One was drilling a screw into it and hanging it on that, and the other one was putting it in and then putting everything around it and trying to make it stick. (Year 6 girl)

Connecting

Some children said that it was easier to learn from their family and whānau because they had a deeper connection with one another. The adults in their lives knew how to communicate with and teach them in ways they could understand:

> Learning from my dad, everything makes a little bit more sense because I have a deeper connection with him. Every now and then, my dad would help me out, but also every now and then he would give me the ingredients and let me experiment, to see if I actually did learn anything. (Year 8 boy)

Children were able to engage with their parents' areas of expertise in ways that felt "easier":

> I guess it felt different from school because I have a different connection to my mother than I do to the teachers at school, and so it was easier because she would know how to better phrase something to help me understand it. (Year 8 girl)

Spending time together during lockdown brought some children a feeling of closeness to the family and whānau members in their household. This was made possible through members sharing their knowledge in a manner that may not have occurred had it not been for the intimacy of lockdown, and children getting to know them better as a result. For one child:

> [My stepfather] taught me stuff in the army like how to read the sun and see how much hours is left during the day. (Year 7 girl)

Learning from family and whānau led to children gaining a deeper understanding of self and how they learn, or what they particularly enjoy learning about. Cooking and baking were often a focus of family and whānau time, togetherness, and greater independence in the kitchen.

Children also valued having family and whānau on hand to ask questions when they were confused or needed help, often providing them with strategies that worked well. The unique situation of learning in a smaller environment was also noted, with family and whānau often seen as having more time than the classroom teacher to explain difficult concepts:

> I learnt how to meal prep and cut veggies correctly. Some nights I would cook dinner by myself with no help because mum had taught me how to do it. I know how to cook rice now and pasta, which it's actually so easy to cook. My sister also taught me how to make bread rolls and make bread in general. She taught me how to just leave it and then come back and carry on with the next step. (Year 8 girl)

> I quite liked it when I had my mum and my dad around 'cause they could help me show, 'cause they taught me actually times and you flip them around a bit and then they're exactly the same. So as long as you know your times you know your divided-byes, and I knew my times, so I was really good at my divided-by, there's the odd one I get stuck on. (Year 4 boy)

Similarly, there was a sense of confidence in children participating in valued activities alongside family and whānau, practising with them and becoming increasingly independent. Importantly, multiple opportunities were presented during lockdown for children to take risks and learn from them:

> I advanced my sewing skills and learned to touch type. I learnt sewing with the help of my mother by the sewing machine. I learned how to use a sewing machine, and so if I got in some trouble I'd know how to fix it now. If I made a mistake, I could fix it. If I needed help with anything I'd call her over, and she'd show me what to do and help explain for next time. (Year 8 girl)

Interests and strengths

Lockdown often required children to innovate and adapt to the resources they had available—the people around them being one of these important resources. This kind of learning was commonly guided by family and whānau members but was also driven by the child's interests and the things they were good at.

Learning was frequently hands-on and involved giving children the opportunity to immediately practise skills after observing and having them demonstrated:

> It was kind of a different feeling, cooking, a proud feeling, the first time I made something. It's like taking 100 steps in one big step. Home learning was kind of fun. (Year 6 boy)

The people in their household passed on knowledge and skills that they had, which were related to the things that they loved, and which children may not otherwise have learnt:

> Learnt how to garden from my mum. Also have carrots, purple dragons. Purple dragons are a type of carrot that save heart problems. It looks like a normal carrot on the outside, but when you cut it, it looks purple inside. (Year 5 boy)

Some children gained a deeper understanding of their culture, such as learning about history in Samoa from their father, learning German, or helping a sibling with te reo Māori:

> I helped my sister with her Māori class, because she's in intermediate and does Māori. My dad's Māori. My sister likes to learn new languages, and I know how to speak Japanese and Māori, but she learned how to do Spanish, not really Māori. So I helped her with a couple things like that. (Year 6 girl)

One child discovered a talent for singing and was strongly influenced by their parents' differing tastes in musical genres. Musical instruments were mentioned often, where family and whānau contributed further to skills already established; for example, playing the guitar:

> The first thing I did in lockdown was playing my guitar—learning new songs, writing new songs and playing guitar and then when I come together with my cousins I know how. (Year 6 boy)

Others learnt to play an instrument for the first time by engaging with platforms such as YouTube, and family and whānau.

The backyard was a place of active learning and problem solving during lockdown through the building of treehouses, obstacle courses, and the like. Some children actively explored interests in the insect world and were able to give detailed accounts of their discoveries:

> Managed to get my brother to help me look for the bugs and he's like, 'Let's go looking for bugs again!', and I'm like, 'Ok'. And we went on for, looking for bugs. Also, he found this weird bug that had a shell, but it was a spider, a Daddy Long Legs, and it had a snail shell on it. (Year 6 boy)

Children were also able to articulate the processes they went through to accomplish tasks and demonstrate their understanding:

> I made pasta for the first time from scratch, which was cool. I learned how ravioli's made, and it was really interesting. Because I was so used to thinking that pasta just came hard in a box, because that's how it usually is, but it was actually really good, it was the best ravioli I ever had and I didn't want to go back to normal ravioli afterwards. My mum decided that it was something we were all going to do as a task, so me, my mum and my sister all did it together. We made one vegetarian mix, because my dad's vegetarian, and then one with chicken in it for the rest of us. (Year 8 girl)

Making sense

Children actively identified the importance of family and whānau in their learning. This was often in situations where an older or more experienced adult or sibling facilitated and supported learning something that the child or family and whānau member regarded as useful knowledge. Examples of the child as learner, and the child as teacher, were both commonplace. The examples neatly illustrate Vygotsky's (1978) *relational* view of learning and development in terms of the *Zone of Proximal Development* (ZPD). The ZPD denotes the difference between what we can do independently and what we could potentially do with support through problem solving under guidance or in collaboration with others (Vygotsky, 1978).

For many children, simply observing their mothers, fathers, grandparents, or siblings undertake tasks, and then "having a go" was a powerful and fulfilling form of learning. Learning in this sense is embedded in the social and cultural context of children's lives (Rogoff, 2003), and through *Learning by Observing and Pitching In* (LOPI) (Correa-Chávez et al., 2015) with family and whānau and community. All these forms of social or relational learning were a conspicuous feature of lockdown life in many of the stories children told us about their time in the household bubble.

Learning through language, culture, and identity

> *I wanted to learn Samoan for next year, but also to communicate with my Aunty because she doesn't really speak English. She doesn't really talk to me, but I want to be able to talk to her because no one else really does.* (Year 8 girl)

Being surrounded by family and whānau for the entirety of lockdown meant that children were living in an environment that was culturally congruent and familiar to them. For some families, lockdown provided a safe space to slow down and reconnect the vital relationships between language, culture, and identity. This was particularly so for children from minority cultures, and those whose cultural and linguistic identities are not acknowledged in the English-medium schooling system.

The quotations used in this section were chosen only from instances where a child themselves made the connection between an activity and their own identity, culture, and heritage. The accounts come from children representing multiple ethnicities, including Māori, Samoan, Indian, Burmese, and French. We acknowledge that everyone has a culture, but here we discuss things that children explicitly talked about as being specific to their culture and heritage, highlighting the way identity can shape learning.[1] In this sense, identity serves as the foundation for all cultural and language learning.

Making connections to a heritage language

During lockdown, children were able to use and learn languages other than English in the context of their own home. Often, these were languages with which children had an identity-based connection, a "heritage language". A heritage language forms part of the child's cultural heritage and identity, even if the child cannot speak the language themselves. Some children we spoke to already used their heritage language at home all the time. It was their first language and their entire family spoke it too. For others, parents may have been able to speak the language, but not the child.

Almost all of the language learning that took place for our participants during lockdown was of heritage languages. Few children mentioned a language with which they had no personal connection.

Lockdown allowed children with heritage languages other than English to practise, learn, and be immersed in their language with their families. Learning from home allowed children who were fluent to learn through their heritage languages, instead of their usual English-medium classroom. One child explained a game he and his father had created, which involved hiding and finding different types of flowers. The names for these flowers were learnt in the child's heritage language:

1 We do not include here, for example, discussions of culture related to intersections of social class, urban/suburban/rural lifestyle, faith community, exercise, popular culture, or mass media, all of which were present to a greater or lesser extent in the interviews.

> Most of the flowers have Burmese names so we only said Burmese names. That's the only language I speak with my parents. We can only speak Burmese in the house, no English. (Year 6 boy)

Some children spoke about their personal connection to heritage languages, with some having lost the ability to speak them. For these children, having the time to re-learn their heritage language during lockdown, guided by family members, was valuable:

> (*Do you speak Samoan at home as well?)* No, we speak English. They make us speak Samoan if we go out shopping and stuff, so they're like 'Don't touch that you ding-dong', and they're like 'Say it in Samoan', so we just stop talking. (Year 8 girl)

> I came to New Zealand when I was 6, and I forgot about Fijian straight away, so my dad's been trying to reteach me, and I've been going to these Fijian classes. Over lockdown too. If I said something in English my dad would say, 'No, what is it [in Fijian]?' (Year 7 girl)

> My dad started teaching me how to [speak Samoan], because next year in college I want to learn Samoan. It was actually kind of easy. I only know like 'Hi' and 'How are you?'. (Year 8 girl)

The connection between identity and language provided strong motivation for these children to learn, as did having valued others in their lives who knew and spoke the language well. Some children found themselves wanting to learn the languages of certain family members to be able to communicate with them and get to know them better. Lockdown provided the time for them to do this. Online resources also proved valuable for language learning for some children:

> I was learning French on Duolingo, and plus on my dad's side, his mum is from France, so I wanted to be able to speak more to her in French as well. (Year 8 boy)

Using and teaching language

With some heritage languages, children were the language experts in their household, and were able to share their language knowledge with their parents and others in their home. Because some children had learnt te reo Māori at school, and were more confident speakers than their parents, they used their expertise to teach members of their whānau more about te reo Māori:

> I helped my mum learn more about te reo Māori. I helped my mum pronounce some words and learn some more karakia that we would do at school. I taught my mum some of the words from the karakia, and she knew what the words meant but she didn't know what they meant all together. (Year 6 girl)

One child, who identified as Indian, taught her mum how to speak English during lockdown. In other situations, older siblings taught younger siblings how to speak their heritage language:

> My brother didn't get much work from school because he's 7, so I set up some tasks for him. He doesn't really know how to speak Hindi, so I set up some tasks for him on how to speak our language. He was alright, and I helped him. My mum spoke Hindi around me, so I learned from a baby. My brother knew a few words before, but he didn't know how to say sentences. So, me and my sister helped him. We said 'The dog jumped over the fence' and he had to translate that, and he had to do it from English to Hindi and then he got it and he had to try to say it. (Year 7 girl)

In these instances, children were connecting themselves and their family and whānau members back to their language, culture, and identity:

> I put the two different flags of Germany and Russia [on my collage] and that's because I learnt the languages of them a tiny bit. I'm pretty sure my family is connected with it, most of my family members can speak a few sentences of it. It's part of my family a little bit, but also, I think it's a cool language and has a cool history and background. (Year 8 boy)

Culture

Being at home meant that children from minoritised cultures were fully immersed in their own culture for the entire period of lockdown. Their accounts suggested this was affirming for their cultural identities. For these children, lockdown was an environment where tikanga and cultural practices particular to each family were able to be incorporated into everyday life and routine in ways that would not usually be possible, or fully possible; for example, with parents at work and children at school. Having a culturally congruent space led to the establishment of new routines, incorporating things like prayer, reading religious texts, cultural dances like kapa haka, and cooking food that was specific to the child's culture, into family and whānau daily life:

> First, we have a shower, then we eat dinner, and then we watch movies after we come back, and then we brush our teeth, then we pray to God for a good day tomorrow. (Year 5 boy)

> We used [incense]. We're still doing it. We just made it usual because we did it in lockdown. We didn't do it before lockdown, we just started in lockdown. (Year 5 girl)

Picture 3 is a Year 8 girl's depiction of cultural practices and rituals embedded in everyday life during lockdown. The presence of the cross, representing faith, is an indicator of specific culture and religious beliefs, and is surrounded with images that represent less sacred things, like having music lessons or eating fruit.

PICTURE 3. **Cultural practices**

This is one where we do artwork, my family. This one here is whern we have music lessons with my siblings. This one is when we have to eat morning tea … The cross is when we have church or have to read the Bible. (Year 8 girl)

For many children, new routines resulted from their family and whānau collective response to the COVID-19 crisis. In choosing to practise tikanga and cultural rituals in the lockdown environment, families and whānau were able to take advantage of lockdown as an opportunity to reconnect with what mattered most to them. For some, due to the busyness of life after lockdown, these cultural practices stopped when they returned to school. For others, lockdown was a catalyst for starting these practices, which then continued afterwards. For example, one child talked about the new experience of shared prayer:

As with language teaching, some children were leaders in their home environment, able to pass on cultural knowledge, as well as learn it from others, and to be affirmed for doing so:

> I taught my sister how to Samoan dance. She's 2. I dressed her up in all my clothes. She's really good at it. Because at school we have a kapa siva group, and they teach us, and I want to do that. So, I'm starting with teaching my sister, and my Nanna was so proud of me. (Year 8 girl)

Identity

Spending increased time with parents and whānau allowed children to have more conversations with their family and whānau members. In many cases, children ended up learning more about their parents, where they come from, and for migrants, what their home country is like. This happened in many different contexts. In some cases, parents drew parallels between their own experience and their child's experience, allowing for such conversations to become teaching and learning opportunities.

In some instances, even apparently mundane daily activities provided a starting point for children to learn more about their culture and heritage. This demonstrated that even where the activity is not explicitly "cultural" in nature, it can still be culturally bound, particularly when framed as a potential learning context by family and whānau members:

> With gardening I didn't know how to do it, so my mum had to help me a lot because I'd never planted anything before. I didn't know. And so she taught me a lot of ways, because she used to do it back home in India. So, she taught me how to garden. She said that in India the fields are all empty, they're full of crops but it's really hard to find a space where you can garden. I'm from the North, and I didn't know much from there. And I just found out that we're really close to other countries. So, in the North we do dancing, but then when I looked at a dance video from other countries it kind of looked the same as others, so that was pretty cool. I asked my parents and they said, 'Yeah we're pretty close to those countries with culture'. That's what my parents told me. It was cool learning that. It was interesting. (Year 7 girl)

Children enjoyed these opportunities to get to know more about their family members, and some explained how this had made them feel closer to each other:

> My family spent a lot of time together and we got to know each other a bit more. My dad had a lot of stories he didn't tell us before, and it was quite unexpected because I didn't really expect that from them. From his childhood. He said that he was very naughty as a kid and he didn't tell his parents a lot of things, so it was okay for us to tell him secrets and stuff. We learned his funny stories. My mum had stories from her childhood. Her friend had encounters with a ghost, she told me, and I was scared but it was interesting. (*Did you feel like you got closer together?)* Yes, closer, a lot closer. (Year 7 girl)

Some children learnt about their culture and heritage through the anecdotes their parents told them about their own childhood during the extended periods of time together that lockdown provided:

> Walking up to Mt Victoria, because it took so many hours with my dad. We were talking. When my dad was little, he used to go up the hills with his friends and his dad was getting angry at my dad, so he just told me his life and his story. He was living in India. (Year 5 girl)

Parents shared what their past was like with children, including their past experiences of school. This allowed children to compare the way schooling works for them to how it was for their parents in different cultural settings:

> Things were very different because my mum is from the Philippines and the school's different there. (Year 5 girl)

As well as learning about family and whānau members and culture, children also learnt about their people, and the history of their communities. This type of learning occurred through having other people to educate them in the home, through self-guided research, or sometimes by coincidence:

> We watched Papa Kainga TV, and also the Aotearoa Show. It has a lot of things leading up from the Triassic period till now, of the evolution of how Aotearoa came to be now. I enjoyed watching and learning more about my country's history. I was interested because I learnt more about how Pākehā came and kind of stole our land. That got me really interested. (Year 6 girl)

Another child recounted how COVID-19 reminded her and her father of an historical event they related to personally:

> I guess I didn't really realise how new [COVID-19] was, and then I was asking my dad about it and he was like, 'It's new to me too!' And I was like, oh, wow. It reminds me of the influenza pandemic in 1918, the Samoan one. (Year 8 girl)

Some children also used books and research to learn more about their people and culture:

> My sister had to do this project about how to do our [Fijian] culture. I would go on her laptop and sometimes read it, then I had a bit more information. (Year 7 girl)

Some children described experiences that revealed they were exploring and practising their multiple cultural traditions and heritages:

> I was reading books and reading a bit about my religion. Since I am Muslim, I read about the Koran. Learning stories about it. Sometimes I use the Koran that has a translator. I was listening about Noah's Ark and stuff. My mum helped me, she listened to me and corrected me if I said some words wrong. It's in Arabic, but that's a different language to what we speak at home. Sometimes I speak Bahasa Melayu because my mum is from Malaysia. (Year 8 boy)

> Okay, so this one, I did it because I was like drawing heaps, and I like to draw Polynesian and Māori designs a lot. I did the cross or the crucifix because I read my bible a lot. The guitar is because I learnt how to play the ukulele. And I did that one because it's like Corona. And I also listened to a lot of Bob Marley. (Year 8 girl).

Making sense

Language, culture, and identity are closely interwoven forms of social knowledge. Language shapes the ways in which members of a group relate to the world, to one another, and to others. Identities are ways of knowing and being (Riley, 2007). Lockdown enabled children to reconnect with and strengthen

their own cultural practices and heritage language use. Lockdown presented a rare opportunity for families and whānau to spend extended time together as a group. Children were able to articulate what their family and whānau culture looked like and how it might differ from the dominant culture. They were also able to identify different activities, relations, and learnings as being culturally bound.

The home provides important contexts for the development of children's self-understanding and belonging in relation to family and whānau, and culture. For Māori, the home environment in particular has been cited as a traditional learning environment where intergenerational learning of language and culture took place (Mead, 2003).

Home enables children from minoritised cultures to be themselves. Home is also where children develop the ability and confidence to find their place in the world, and to embody their language, culture, and identity in all aspects of living and learning outside the home, including the classroom (Macfarlane et al., 2007).

Lockdown was affirming and empowering for children from minoritised ethnic groups, and children whose families spoke languages other than English in the home. Some children also helped or were helped by their siblings to make new, practical connections to their cultural and linguistic heritage. This shows that culturally and linguistically diverse children's experiences can vary considerably even within the same family and whānau setting (Rona et al., 2018).

Learning through life events

> *I cooked for my Dad's birthday. So we cooked a roast, a roast lamb and roast veggies and some potatoes. Then after we made our own ice cream.* (Year 8 boy)
>
> *I learnt how to celebrate a birthday in lockdown.* (Year 5 girl)

In this section, children describe their experiences of "life events" during lockdown. Some children experienced unusual or unexpected life events during lockdown. These included the death of a close relative outside of the bubble, illness within the family and whānau, the fear of escalating illness within the family and whānau, a near drowning during a family and whānau event at the river, the death of pets, and accidents such as breaking an arm.

Children also experienced celebrations and special occasions in very different ways from previously, such as their own birthday, or that of a sibling, parent, or friend, or an anniversary. Children had to learn to celebrate these events in new ways during lockdown because they could not meet their family and whānau as they would do normally, or have access to the range of materials, artefacts, and resources typically associated with those events.

National celebrations such as Anzac Day and Easter also occurred during lockdown and were identified specifically as a learning context by many children.

New ways of celebrating

Celebrating a birthday in novel circumstances led to learning that varied considerably between children. For some children, a lockdown birthday was a positive celebration. These children appreciated the flexibility that lockdown provided to spend the day how they wanted, even if this meant just watching TV and eating. For other children, the ability to spend increased time with their family and whānau was in itself a birthday "gift":

> It was good because I had something to look forward to. We got to spend the whole day for my birthday instead of Dad going to work. (Year 4 boy)

While some children enjoyed the increased time with family and whānau for their birthday, others found the isolation from their peer group difficult:

> I had to have it by myself and I usually have friends over for my birthday. (Year 5 boy)

Restrictions on the availability of certain types of food and presents affected children's birthday experiences. This included missing out on gifts that they were expecting, or not having birthday cakes to celebrate. Children compared experiences of birthdays before and during lockdown:

> My birthday was not the best, because usually, on people's birthdays, you get to go places and stuff. You get to get presents and stuff, but I didn't really get presents. Probably, my present was the cake but I didn't really like the cake, but I did like the cake. It was chocolate. But I didn't really like it. (Year 4 girl)

Instances such as these provided children with experiences and learning about managing disappointment, flexibility of planning, and resilience. Children reported how they were able to rationalise these disappointments and accept delayed celebrations. Delayed celebrations occurred after lockdown and, for some, provided an important belated recognition of their birthday during lockdown. Simple acknowledgements, such as their class singing happy birthday on their return to school, meant a lot to children. Enjoying delayed birthday parties also taught children that there were times in life where they needed to wait for the "right time" to celebrate important events.

These adaptations and shifts, together with family and whānau support, provided opportunities for children to develop resilience and flexibility. One child accepted not having her planned birthday pool party but still having the pleasure of being able to open gifts from her family and whānau:

> They were little things 'cause you can't really get much during the coronavirus. But I was still quite happy. I was planning for nothing. (Year 6 girl)

Another child's favourite present was a hand-knitted gift of her favourite animal from her mother. Several children commented that they had not expected to receive gifts on their birthday and were surprised when there were presents for them to open. One child reported that he missed out on a birthday cake due to shortage of ingredients, but commented although he didn't have a cake during lockdown:

> I am hopefully going to next year do it with my friend. (Year 6 boy)

Children recognised the wider societal consequences of COVID-19 and accepted its personal impact. They also showed creativity and ingenuity when celebrating the birthdays of others, exploring different ways to be involved in celebrations. When children were not physically present for the birthday of significant people in their life they mentioned using technology to connect and mark the occasion:

> It was my best friend's birthday, the one that I went to the beach with. So I Facetimed her on Messenger, because our parents were in contact, so then I could say happy birthday to her. (Year 5 girl)

Adaptations to birthday celebrations were also made when children practised social distancing:

> I actually had my birthday in lockdown. Three days after lockdown started, it was my birthday. And so two of my friends came to my doorstep. They'd knock, then step back, and I'd open the presents, it was really nice. (Year 8 girl)

Some children noticed how other family and whānau members celebrated their birthday, even when they could not be physically present. One child described how, because of "corona", her aunt couldn't come and dropped off a cake instead. Another child commented that her father made her cake because they were unable to go and buy one. Such acts of care and manaaki, love and aroha demonstrated to children that others were thinking of them and how to acknowledge them. These behaviours were reciprocated by children in their descriptions of how they celebrated the birthday of others. For example, when celebrating a family and whānau member's birthday, children often described the experience in terms of their contribution to the day. Children's experiences highlighted the importance of family and whānau, connection with others, and how children could acknowledge the occasion for important people in their lives. Several children spoke about baking cakes or making cards for family and whānau members. Children also enlisted the help of other family and whānau members to bake and cook.

Remembering others

Children experienced the Anzac Day and Easter national holidays during lockdown. National commemorations provided a way for children to experience unity outside of their bubble as the people came together to create new ways of remembering while adhering to lockdown restrictions.

Children reported participating in various "typical ways" of commemorating Anzac Day but which had to include new or adapted features due to lockdown. These commemorations included the baking of Anzac biscuits, creation of poppies, and the remembrance of those who had passed. Several children reported that these learning activities were set tasks, from either their teacher or learning TV, that involved acquiring new knowledge:

> I found out that the flowers represent dead people. (Year 7 boy)

Children mentioned the inclusion of members of their family and whānau in particular aspects of their and their shared learning:

> My mother's been baking for a long time. And during lockdown, my brother [and] my father actually learned how to make Anzac biscuits. (Year 6 girl)

For another child, Anzac learning occurred through trial and error while baking Anzac biscuits. The child explained that the first attempt used too much baking soda which meant all the cookies had to be thrown out. The child asked her mother for support and tried again, this time successfully.

Children shared knowledge about Anzac Day with those around them. For some children, this meant helping their younger siblings with their schoolwork. And for one child it meant helping in her own mother's Zoom classroom:

> Me and my mum did some baking. My mum had a Zoom call and I helped her do it. So we were making Anzac biscuits and showing her class how to do them, and I was reading them a book. My mum's a teacher. (Year 4 girl)

Not having access to the physical space of a classroom and materials during lockdown meant children needed to find and use learning materials from in the home. This resulted in creative explorations and expressions of Anzac Day. Some children made poppies, and others nailed their poppies artwork to their garden fences.

Other children mentioned baking, balloons, puppets, paintings, and assignments as ways to explore Anzac Day. Anzac Day also provided an opportunity for children to connect with family and whānau members, past and present:

> On Anzac Day we made these giant poppies that we stuck on the front of our house which was really cool and then we made some little ones and we took them down to my Grandad and put them on his grave. (Year 8 girl)

Children also discussed Easter, albeit less frequently than they did Anzac Day. Easter was nevertheless a significant event, one that had even attracted a popular high-profile champion. (During lockdown, only essential workers could move around the community. A media statement from the Prime Minister reassured children that the Easter Bunny was designated as an essential worker and was therefore allowed to work over Easter, delivering chocolate eggs).

For some children, then, chocolate was the focus of their Easter experience, while others spoke about quizzes and Easter egg hunts. One child shared the new shared experience of exploring the local forest where her father had set up an Easter egg hunt, for which her mother wrote the clues:

> Nope that was completely new, we've never had something buried or anything. 'Cause my dad is in the army. He has army stuff and he put it in this army container sort of thing and hid it down in the forest, buried. And he did tricks so it looked like it was digged over there, but it was over there. And then it looked like it was over there. Not there. So it was real confusing. (Year 6 girl)

Death and dying

For some children, lockdown meant travelling to stay with, and care for, an unwell relative. These children showed insight into the behaviour of adults who wanted to shelter the children from experiences associated with sickness and death. As one child noted, when at her "Poppa and Nana's" house they were asked to be outside at one point because:

> Our Mum didn't want us to be with them because we would be upset. (Year 5 girl)

Families and whānau were confined together for unusually long periods of time in their household bubble during lockdown. Children showed gratitude for the extra time spent with their family and whānau, and with their unwell relatives. Children talked about what they saw valued adults in their lives doing to model to them ways to navigate difficult life event circumstances. In this way, children learnt about recognising, managing, and processing grief through those around them.

The child's experience of death or dying during lockdown was evident in various ways. Restrictions during lockdown resulted in limitations on physical gatherings, which directly impacted family and whānau ability to hold or attend significant events such as funerals and tangihanga. Adults in the household bubble had to explore alternative ways to celebrate the life and to honour the death of a family and whānau member. Children talked about experiences that included delayed celebrations, and travel to socially distanced, intimate gatherings. One child, for example, described a trip to a local town to attend the funeral of a relative involving only 10 people.

Some children described changes to tangihanga. They spoke about how tikanga was adapted to meet the constraints of lockdown. One child described how the whānau were able to sustain important elements of tikanga in how they farewelled her "Nan":

> And then we made a big card so we can save it to take down south next month, for all my family who are coming. It's just some photos about all of our family, some people who have come and some people who have passed. We stuck some photos on from the computer. We're going to my Nan's kawe mate next month. It's a funeral without a body. (Year 6 girl)

Health and wellbeing

Mainstream media coverage and Ministry of Health messaging during lockdown continuously reiterated the imperative to "Stay Home, Save Lives". Children demonstrated their knowledge of both their own and their family and whānau health, and also of the importance of doing what they could to protect this. They understood that the impact of COVID could be different for family and whānau members with health issues:

> Dad was also, well now that I think of it, my whole family was at big risk at my house. Because my uncle has asthma, so does my Mom. My Dad is getting a tiny bit old and he has a knee problem and an eye problem. So, most of them were at risk. (Year 6 girl)

Other children highlighted the active role they played within their family and whānau where they learnt to manage their own disappointment at being in lockdown in order to stay home and keep members of their family and whānau safe. One child spoke about his brother's pre-existing health issues:

> 'Cause if he got the virus it could've made his breathing worse. I was pretty sad. 'Cause I couldn't play like outside most of the times. (Year 4 boy)

Other children spoke about structuring activities within their day to help with their fitness and health.

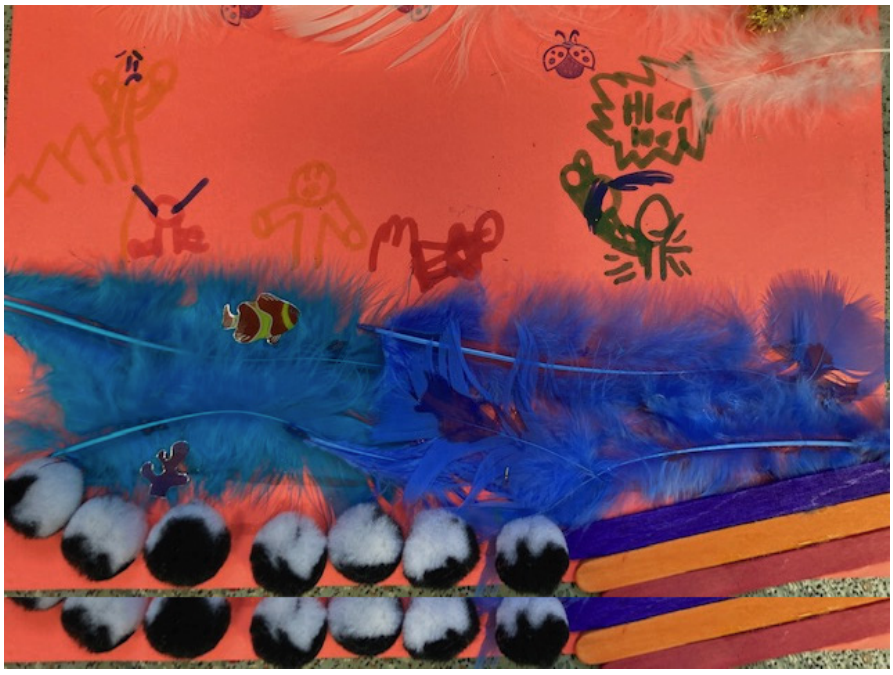
Some children learnt to negotiate their lockdown environment with the added complication of injury, including broken bones. One child reported visiting the Emergency Department to have an arm put in a cast and having to adapt his environment to be able to move around with an injury:

> I had a cast because on the first week of lockdown I had to go to hospital to get it cut open and get my arm free again. The Hospital ED stands for Emergency Department. I had to go there because I was riding my motorbike. I went up this jump and landed on my head and got concussed and couldn't remember for ages. (Year 8 boy)

While some children experienced a physical accident during lockdown, other children learnt through their emotional response to accidents. One child outlined an incident at the local river where he felt he was in danger of drowning during a family and whānau outing, along with his "Nan":

> I was getting deep, and deeper and deeper and the current was getting stronger and stronger. That's when I almost got pushed into the sea. Then I held onto Nan and then my cousin just swam to the nearest rock. I stayed on her because I don't know, I didn't know how to swim. But I can go swimming under water. So Koro grabbed at me and then I jumped off while trying to go off a rock and then he grabbed me again. And that's when I decided to go in the little [rock pool], and then I started to go to try and find some rocks instead. (Year 5 boy)

PICTURE 4. **Near drowning**



So when I was almost drowning, we wanted to go to the other side. (Year 5 boy)

New life

Lockdown provided opportunities for some children to experience new life. Children demonstrated their understanding of the interconnected concepts of life and death when new life was discussed in relation to a loss. For one child, after the death of his favourite chickens, he hoped that some eggs would turn into chicks:

> My chickens. I have lots and my two favourites died a little while ago sadly. All the rest are trying to run around and lay eggs that we can't find so that they can have babies. I don't want to find them so that they can have babies but everyone else doesn't. (Year 6 boy)

For some children, it was typical to be involved in the care of farm animals and concepts of pregnancy and birthing were part of their everyday experience.

For other children, these concepts were new. One child described her first experience of her guinea pig giving birth as "pretty gross". Similarly, another child was on a video call with her friend when the friend realised that one of her own guinea pigs looked pregnant:

> I had a lot of video calls with [friends]. In one of the major calls, Mary's guinea pig had babies. She was saying that her guinea pig looked really pregnant, but she didn't know when she was going to have babies. And then she closed the laptop in the middle of her sentence and hung up on us because she was just like 'Oh my goodness' and left, and then she said, 'Skittles is having babies!' The babies looked weird. We visited them after lockdown as well, and they were pretty big, and then me and my sister took one each. (Year 7 girl)

Making sense

Throughout their interviews children told us anecdotes or fragments of larger stories from their family and whānau worlds that made sense of their lockdown experiences. Among these, anecdotes about novel or unanticipated life events, both happy and sad, were often the most poignant and powerful. Clandinin and colleagues (Clandinin et al., 2016) refer to our experience and lifeworld in terms of stories. We all, adults and children, live storied lives. These stories help us to make sense of the world; they become our stories to live by. When we encounter new or unexpected situations and events, these "bump up against" our existing stories to live by and mean we have to adjust our view of how the world works (i.e., learn) in order to accommodate the new stories. During lockdown, many children experienced this bumping of their stories up against life events that were either new to them, unfamiliar, or were experienced in very unusual ways.

Children's descriptions of these life events typically highlighted the essential role that family and whānau have in children's experience of adapting and learning together (Rogoff, 2003). Children also demonstrated awareness of the effects of COVID on their immediate and wider family and whānau, and their community. In general terms, their stories to live by were interwoven with COVID, lockdown, and bubble threads. For some children, their stories included the heightened sensibilities, stress, and emotional impact of particular life events.

Through their accounts, children demonstrated to us that their learning was undoubtedly socially situated (Vygotsky, 1978). In these situations, children were able to adopt different roles and responsibilities according to the group in which they were participating, even in the periods that most challenged their understanding of, adaptability to, and resilience towards their childhood worlds.

Emotional dimension of learning

> *And I could see that other people were a bit stressed as well. I noticed some people that were normally 'chill' were on edge a bit.* (Year 7 girl)

In this section, the children talk about how they experienced their emotions in ways that enabled them to learn negotiation skills, influence their relationships with valued others, and to work through emotions that could be limiting such as fear. Importantly, they explored the concept of "boredom", of what this meant for their learning, and paradoxically, how boredom could be a catalyst for further learning.

Children spoke extensively about experiencing emotions such as boredom, fun, excitement, fear, and happiness during lockdown. The range of emotions reflected the diverse array of learning opportunities and everyday experiences that the children negotiated each day. Typically, children at home have adults to help them mediate the emotional highs and lows of routine household life, such as sibling and friend relationships. The lockdown bubble presented children with new opportunities to learn about their emotions, such as having much more time at play with their father than previously or learning to enjoy a sibling who they had never really got to know. Through these negotiations, the children learnt more about themselves, and about how to create their own conditions for relating to valued others within the home—or online. Children spoke positively of the way forced separation from established school routines and relationships created the space to renew and reshape relationships in the home.

Reactions to boredom

Initial reactions from many of the children to the prospect of lockdown were that it would be "boring". These thoughts were triggered by their swift separation from the known routines of school, classroom learning, and the loss of regular, face-to-face contact with their friends:

> So I was actually quite bummed because I wanted some human interaction. I felt a bit excited at first, because yay no school, no work. But then after a while it just got really boring and I missed all my school friends. (Year 8 girl)

In contrast, for some, lockdown was seen as a break from their habitual experience of school life:

> I was happy actually, because I don't really like going to school, it's really boring. (Year 7 girl)

Children's experiences of boredom also proved to be the impetus for new experiences and learning. Children reported engaging with their families and whānau in cooking and baking during this time, and at times they cooked *because* they were bored. For some children, this then developed into an interest:

> Over lockdown and after lockdown we did cooking. I can cook quite a bit now. I just need the recipe and the stuff and I can probably cook it. (Year 7 boy)

Baking also provided an opportunity to learn independently. Children commented on learning how to follow a recipe, with their confidence growing through practice:

> Basically I got really bored and I wanted to cook something. So, I decided to pull out the recipe book, one of the many recipe books, and I found the chocolate cake recipe and decided to make one. (Year 5 girl)

Outdoors frequently featured in children's responses to boredom. Outdoor pursuits provided opportunities for creativity and problem solving as well as chances to work with parents, siblings, and other family and whānau members. Some children created obstacle courses in the backyard while others built huts and tree forts:

> When we were outside it was kind of getting boring, and I basically live out on a farm and we have heaps of sticks and stuff in the backyard and some old tarpaulin that we were allowed to use and I had some nails and stuff. But only I was allowed to use the nails and the hammer because my little brother was too young. I was bored and me and my little brother made this big hut inside, it was kind of like a tent, but I wanted to recreate something else that was being able to be outside. So me and my little brother decided to make a hut. (Year 4 boy)

Children also responded to boredom by using YouTube to pursue current interests such as learning more about digital gaming or skincare and make-up tutorials:

> I never thought I'd do make-up, but then I found a tutorial and I was bored so I thought I would try something new. I had all the products, so I just thought I'd just try it and do it. (Year 7 girl)

Emotions and learning

Children described a range of other emotional responses to lockdown, particularly following the announcement that schools would be closing. For some, their emotional reaction was being "shocked" and for others it was sad, or scared, or being anxious. Children's responses echoed the general nationwide uncertainty of the period:

> I was nervous and also shocked because I didn't know how we were going to learn from home because it was all new to me, so I was all confused. Like, clueless. (Year 7 girl)

Some children also expressed a mixture of positive and negative feelings, or changing emotions over time:

> At first quite happy. Yeah, just a relaxing time. Just relax a little bit. But near the end it got a bit lonely. (Year 8 boy)

Another child described not only their own uncertainties but also an awareness of others' feelings:

> I felt a bit stressed because of all that had happened. It was just kind of stressful. Because of the virus and all that we had to do to make sure we didn't get the virus. And I could see that other people were a bit stressed as well. (Year 7 girl)

Children's initial emotional responses included their reactions to not being able to physically see their friends and other people at school. This appeared to be a hard concept to grasp; some children said they were "devastated". Externally imposed change therefore provided for important learning, such as the need to adapt flexibly to circumstances and find new ways to engage with their peers.

A major component of the schooling experience for primary-age children is the classroom teacher–student relationship and many children in the research talked about the prospect of missing their teacher during lockdown. This also included concerns over what would happen with their learning:

> I was sad that I couldn't see my teachers and my friends because there was a whole thing about school, where you meet new people and become friends with other kids. So I was a bit annoyed and sad about that, but you got to do what you got to do. (Year 8 girl)

Some children also talked about the everyday impact that bullying at school had on them prior to lockdown and the changed emotions of no longer having to negotiate this during lockdown itself. Consequently, for these children, lockdown provided relief and a chance to have a break from a person that either they did not get on with or felt bullied by:

> I was kind of happy because I get bullied. And I was sad because I like learning. (Year 7 girl)

Lockdown could also provide an opportunity to reset relationships:

> I was kind of having a bit of drama with my friends, and it was kind of good to get away from them for once. Sometimes when you're around people too much because you have to go to school every day, it gets a bit too much. Even though you kind of want to see them. (Year 7 girl)

> Yeah I got a break from [name] and now he still bullies me but now he likes me better. 'Cause now we play Prodigy during school and we sit next to each other and help out each other. It's like he got brainwashed. And he lost a bit of his memory of bullying me and stuff. (Year 5 boy)

The range of emotions experienced when lockdown was announced was also evident in children's descriptions of when it was time to return to school. Comments such as being nervous, anxious, and concerned all featured. One child reported that her anxiousness only settled once she was comfortable with her learning:

> I felt scared to go back to school. I had butterflies in my tummy. That was my feeling because I haven't seen people for a long time, like six weeks. I thought that I'd mess up my first day back from lockdown, and then they'd get angry at me. That's why I always get so nervous when I talk in front of people too. I felt like I wanted to run back home. I was worried about schoolwork, messing up hard schoolwork because I learned different things in lockdown than at school. Once it was morning tea, my butterflies disappeared because I felt more comfortable after learning, and everyone was nice. I guess some of them had the same feeling as me. I knew it because of the way they were acting. The first words I said to people were a bit wobbly; then, I just talked normally. At the end of the day, I thought, 'Oh no, school's finished, I'm so sad'. (Year 6 girl)

In contrast, some children were excited to be returning to school to see their friends and teacher, but not at the prospect of schoolwork:

> I was a bit excited to go back to school but at the same time, I wasn't that excited because we would have to start doing more schoolwork again. But then yet again I was excited to see all my friends at school and my teacher and stuff. (Year 7 boy)

Some children also talked about what they had missed from lockdown while reflecting on their return to school, such as missing the "peacefulness" of time in their household bubble:

> I felt like school was so crowded and I have actually gotten used to staying home. And then it was so crowded I was just like, I think we should go back home. But I was happy to see my friends again. (Year 6 girl)

Other children noted that, while it felt strange at the beginning, familiar routines and friendships were quickly re-established:

> It was exciting because I got to see all my friends. Then learning was a little bit different because I hadn't been in the classroom for a long time and then a few days later it just seemed normal just to be back at school. (Year 6 boy)

Exploring

Extended time at home allowed children to learn through exploring their interests, practising skills, and playing games they enjoyed both with family and whānau and independently. While for some, baking was simply a response to boredom, for others it became a strong interest during lockdown, or a process that revealed previously unknown "talents" to them:

> I learned the talent that I didn't know. It was singing. Dancing. And also baking, because I thought I couldn't cook and all that. And that was all because my parents told me that I had that one talent inside, the potential, yeah. (Year 8 girl)

Cooking and baking also provided natural opportunities to socialise with family and whānau and cook for family and whānau. Children commented on parents giving guidance and support in learning to cook and bake.

Learning through engagement in art and craft activities also featured in many of the children's responses. Some families purchased art and craft materials such as clay, paints, paper, pens, and colouring activities in the short time they had to prepare for the lockdown period. Art activities were often undertaken as a family and whānau or seen as a special time with a particular family and whānau member.

Children worked independently and practised their painting and drawing, with some noticing the improvement in their skills and abilities over lockdown:

> I found some ideas on what to paint online. I like landscapes and faces I guess. I saved the stuff from when I first started out, and there's lots of improvements. (Year 8 girl)

Another child described how she had improved newly acquired skills by taking photos of her make-up artistry and reviewing what she and her sister had done:

> My mum has a lot of make-up left over, so me and my sister did makeovers on ourselves and we would try until we got it all right. We would do it on my brother as well, like scary faces, and we'd take a photo and see the touches we'd have to make and the mistakes we'd made. (Year 7 girl)

Some children experienced learning a musical instrument such as the guitar or the keyboard during lockdown. Parents, neighbours (from a social distance), and YouTube tutorials were all drawn on for assistance. Opportunities also arose for some children to take the role of teacher:

> My younger brother is also learning. He got his own guitar for Christmas. I taught him a few chords. It was harder than the cooking. I guess teaching other people to do stuff is pretty hard sometimes. (Year 8 girl)

Children discussed their own specific projects. Some of these were prompted by their teachers while others were self-directed:

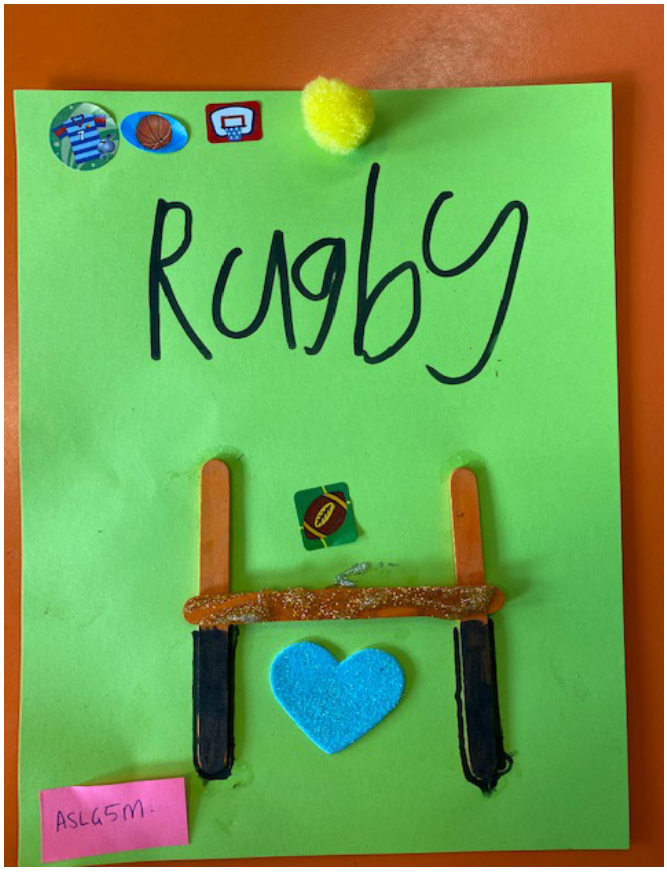
> Made crystals. You know, the crystals, it's like a science experiment. I did it by myself. One day I went in the library, before lockdown, and I found this science book and I read the part of how you

> make crystals and then I learned how to make crystals. Me and my mum did it first, and then I started to make crystals on my own. (Year 7 girl)

Other projects included New Zealand history, ancient creatures, sports, war, gardening (including identifying weeds), Greek mythology, learning languages, and learning more about their religion. One child explained how the backyard contributed to their particular interest:

> The one thing I loved through lockdown was me getting to learn other species of bugs. I just search under rocks for different bug but once I saw a spider that had the Black Widow sign, but it wasn't really a Black Widow. (Year 6 boy)

PICTURE 5. **Rugby**



I have got a rugby goal because I have got little rugby posts in the backyard. I have got a love heart there because I love rugby and that is why there is a big 'rugby' there. I have the rugby jersey, basketball and basketball hoop because I have got a basketball at home and I have got a basketball hoop. (Year 5 boy)

Lockdown was also an opportunity to spend time learning and practising sports skills. Children practised their skills in hockey, rugby, soccer, and gymnastic skills. They were often supported by parents or older siblings and, at times, they were also the teacher:

> I practised some moves I already knew and then, my brother. I was teaching my brother how to bowl in cricket, and he wanted to do batting. And I was teaching him soccer. (Year 4 boy)

Making sense

Children's cognitive development is influenced by their social interactions, cultural experiences, and sociohistorical dimensions of their environment. Lockdown provided extended opportunities for children to revisit known experiences and learning, and to identify new interests, experiences, and passions in unique circumstances. Relatedly, Glaveanu et al. (2020) argue that creativity is fundamental to society and involves spontaneous and improvised interactions. Creativity, as such, leads to societal progress "by changing the way people relate to the world, to others, and to themselves making them more flexible, more open to the new and, at least in principle, to differences in perspective" (p. 743).

The children in this study engaged creatively and flexibly with the lockdown bubble circumstances in which they found themselves. Children also engaged in metacognitive monitoring (Nuthall, 2007) whereby they were given opportunities to judge whether all sorts of experiences and routines were, for them, challenging, easy, familiar, unfamiliar, or boring.

While family and whānau members and digital tools such as YouTube were called on to learn new things and problem solve, these were not the only learning resources children used. Children also drew on their imagination and self-talk (Duchesne & McMaugh, 2019) to work through a problem, engage in play, or make creatively.

Learning through digital technologies

> *So basically, I do Roblox and Gacha Life and this game called Star Stable Online. And so, basically, I kind of just record it and then go onto my editor and edit it and then, I have to get parental permission before uploading it. Yeah, I kind of just upload it.* (Year 5 girl)

Digital technologies function in the same ways as more traditional technologies, such as the telephone, the radio, the pencil, or even spoken language. They can also function in children's play like traditional toys or games, or in children's creative endeavours, such as art and craft.

Most children described using digital technologies during the lockdown, and often for large amounts of time. Many children saw their use of digital technologies as a very important part of their lockdown experience. Children also described learning through their use of digital technologies, and using these technologies to learn with and from others both within and outside of their bubble.

Watching digital content

Most children described watching broadcast television, including learning TV; streamed content, for example on Netflix; and clips on social media such as YouTube or TikTok. Children's uses ranged from relaxation and entertainment purposes to acquiring new knowledge and skills.

During lockdown children were not able to access school resources or public libraries in the same ways they could do previously. They were therefore more reliant on information found online. Some children spoke with passion about the new knowledge they had acquired through reading, watching, or listening to online content. One child described learning "a lot of things leading up from the Triassic period till now" and about "the evolution of how Aotearoa came to be now" from watching Papa Kainga TV and the Aotearoa Show.

Many children also described learning new skills from watching online content, including playing an instrument, performing a new dance, doing science experiments, playing a new online game, doing art and craft activities, or learning a new language:

> I found an App that helps you learn how to play guitar, it's very easy, and I guess I followed that. You just follow the App and learn the chords. (Year 8 girl)

> I learnt to do a string artwork. It's like get string, put it in a paint bottle, then get it out, get a piece of paper, put it there in a weird shape, then place the string in, and fold the paper. I have one in my bag. It was on YouTube, on Five Minute Craft. I was like, that's a cool idea. You don't have to use paint and get it perfect. (Year 6 girl)

Children often got help from adults or siblings. Some children commented on the affordances of digital technologies that helped them to learn, such as the slow-motion and replay functions on TikTok to make it easier to learn the steps of a dance.

Creating digital content

Some children described creating their own digital content by filming themselves dancing, singing, or playing music to post on TikTok or YouTube or by making home movies. Creating digital content tended to be a collaborative activity that involved working and learning with others:

> So, we were making a movie, and so [a friend next door] would stay in his yard and we would stay in ours. But he would be in the middle of his yard for his act and we would be in the middle of ours and we would have a two metre distance. So he would stand on his tramp. And then I could do my act, and then I would hold the iPad and he does his act. I'm really into that sort of thing, I like acting and coming up with stories that could be acted or stuff like that, movies. (Year 6 girl)

These creative activities often required children to use technical skills, solve problems, and persevere to get the desired effect:

> I created my own video, I don't know how to explain it, I threw a ball and then it would go to different cut scenes, bouncing off things, and going into the hoop. Just like pausing and playing, so pause when it was in one shot and then play again. (Year 8 boy)

> We were meant to put [our movie] together on iMovie, but because we have an old iPad we couldn't send it through to the iMovie app. So we didn't end up being able to put it together but we watched it as though it was put together so that was fun. (Year 6 girl)

Platforms such as YouTube and TikTok provided an audience outside of their bubble which would otherwise have been inaccessible to children. For some children, even the *assumed* audience of TikTok was enough to motivate them to practise and record performances:

> I think I did a few drafts, but I never post. Yeah, surprisingly. I did dance ones. I was on TikTok a bit. (Year 8 boy)

Playing digital games

Children described learning how to play new games, and how to play games they were already familiar with, better. These games included construction games (e.g., *Minecraft*); strategy games (e.g., *Castle Crush*); war games (e.g., *Clash of Clans*); racing games (e.g., *Gran Turismo*); first-person shooter games (e.g., *Call of Duty*); simulation games (e.g., *Flight Path Simulator*); collaborative problem-solving games (e.g., *Among Us*); suiting games (e.g., *Tetragon Fortress*); narrative games (e.g., *What Remains of Edith Finch?*); role play/hangout games (e.g., *Royale High*); and games designed to support basic maths, spelling, or reading skills (e.g., *Mathletics*).

These different types of games differ in sophistication and provide different learning opportunities, but all are dynamic and designed for interaction. They provided players with choices and allowed different possibilities. It was this aspect of online gaming that most engaged children.

Some children described learning new knowledge from the games they played. Others described learning new skills and capabilities. One child developed their fine motor skills and dexterity, and also perseverance, experimentation, and problem solving through a simulation game:

> It's called Flight Path Simulator and you get to fly planes. But sometimes, this is really annoying to me, sometimes when I hold it like this, the flap just goes down so I have to go like this for the flaps to go up. It's really annoying. (Year 5 boy)

Many games provided children with opportunities to enter a fantasy world, to "dress up" (i.e., their avatars), take on different characters, role play stories of their own devising, and use their imaginations through creative play:

> Playing with my friend was really cool because I was Killer Croc and he was Lex Luther. Lex Luther can turn into the size of Killer Croc and he can go invisible. And Cyborg can turn into a washing machine so that no one can see his face. (Year 4 boy)

Some games, such as *Minecraft*, provided children with opportunities to learn through creating:

> I can make my own choices and world and do what I want. You can follow the story of it, like what you're meant to do, or you could just build whatever you want, houses, mansions, anything. (Year 8 boy)

Other games provided opportunities to develop strategy, tactics, and problem solving which children usually described in detail. Some of these problem-solving strategy games such as *Among Us* required children to collaborate with others, engage in collective decision making, and reach consensus:

> There's this tactic where if everyone bunches up, you can just kill someone, and then no one would know if you were the imposter. You have to discuss and see who goes into the vents, because the killer can use the vents but the crew mates they can't, so that's how you know who the killer is. And at the end you have to vote and eject someone and it'll tell you if they are an imposter or a crew mate. (Year 5 boy)

Other children described opportunities to learn perspective taking, empathy, and critical analysis, as in the narrative game *What Remains of Edith Finch*?:

> It's about this girl's family who have a curse, and they all die at some point. It's interesting because you get to see the point of view of each family member. And you get to play as them. There's interesting dialogue. (Year 7 girl)

There were examples of children building up their skills and knowledge over time through multiple engagements with complex games and transferring their learning from one part of a game to another:

> I remember this one bit. There was a dragon slide in their pond. The first time I looked at it I just heard the dialogue I was like, hm, I didn't know that was there. When you've played it a lot of times you know what to look for. (Year 7 girl)

There were also examples of children transferring their learning across different online games.

Some children provided themselves with new challenges or creative opportunities by choosing to play games in innovative ways to meet their own purposes, rather than conforming to the typical course of game play. One Year 8 boy, for example, described how, instead of throwing TNTs into the mines, like "you're supposed to" he threw them at the ground for fun "to make them explode".

Creating digital games

The line between playing and creating online games is somewhat artificial, as many online games provide the opportunity for coding and creating digital content. Children enjoyed these opportunities to create their own games:

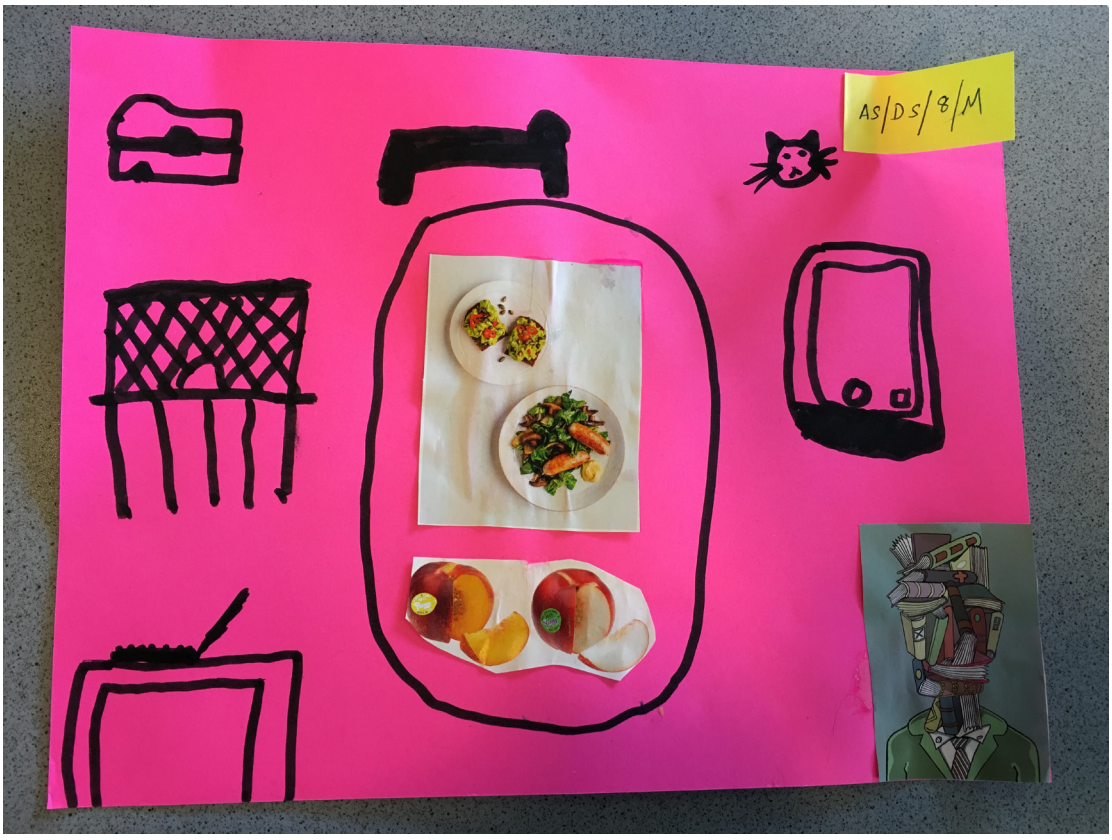
> Tenka was definitely new for me 'cause we don't do it much at school. It's basically like Prodigy but instead it's coding, you can make your own like characters and stuff. (Year 5 boy)
>
> You can make your own game on Roblox and it can be about anything you imagine. If you wanted to make a horse game, you could make that. I would usually make an 'obby'. An obby is like an obstacle course. You could make jumps and stuff. (Year 5 girl)

Many game-creating platforms provide a space to share the new games children created with others, to play the games made by their peers, or to modify them to meet their own purposes. These platforms provided children with an audience for the games they created, and also the opportunity to converse which added to the sense of being part of a wider community.

Children mainly learnt how to make digital games with and from others—usually more expert peers—by engaging with them on various platforms, by watching them play on YouTube, by playing alongside each other in multiplayer games, and by discussing tactics in online chat rooms:

> Just being able to get inspiration for my own videos. You get a lot of inspiration on what to do next in that game. You get to find new people that you use as an inspiration. (Year 5 girl)

PICTURE 6. **Gaming, coding, and filming**



I have just got a little bit of representations of what I did over lockdown. … That symbolised going on my phone and also a special video that I did. Bed because I like sleeping. My computer representing my work and my trampoline which is jumping and code blocks because I did some coding. (Year 8 boy)

Communicating with others using technologies

Digital technologies enabled children to learn with others during lockdown in ways that would not have otherwise been possible. Children connected with family and whānau and friends outside of their bubble in a range of ways through emails, Messenger, Instagram, Facetime, Zoom, and online games with the functionality to chat with others.

Some children used social media to learn from or teach friends or family and whānau how to do new things, such as how to apply make-up or how to carry out a sports training exercise. Others learnt with peers in the process of carrying out a collaborative activity together such as playing a multiplayer game. Those involved provided each other with feedback in real time as the game progressed, reflected on their game play afterwards, and discussed tactics for future game play.

Others sought out friends online as learning companions. It was learning and creating together that was important, and the use of digital technologies made this possible:

> I made my own books, and I called my cousin and we made them together. We video chatted and made books together. She made one of me and I made one for her. They were about when at lockdown how we couldn't see each other, and the books were called 'Sad Goodbyes'. We made different pages. They had words and told a story. It took pretty long to make. (Year 4 girl)

One child described contacting her friends to show the new bike and scooter tricks they had learnt. Another described texting her friends after posting on TikTok, presumably for them to watch and provide feedback.

Some children engaged with those outside of their bubble in projects competitions, games, or challenges of their own devising:

> We would do a competition with grandma and we would each take turns choosing a picture to draw, and we would each try to draw them. Then we would video grandma and show them. Her pictures were great because she's a great artist. (Year 4 girl)
>
> We would play another game with grandma where you had to take a photo close up of something and they'd try to guess. I took a photo of a book, and they didn't guess that. I also took a photo of the piano in close up. They did guess that one. Grandma would take a photo. It was like spot the difference. She would take two photos and take away some things and move them. And we would write them down on the text messages. (Year 4 girl)

Using digital technologies in new ways

During lockdown, many children needed to use technologies in ways they had not done so before to complete and share schoolwork, to interact with their teacher and class, and to stay connected with their friends, acquiring new skills in the process:

> I learnt a lot about technology in lockdown, like how to edit stuff. My mum taught me some of that. I got this computer to use, and it's a whole new way of doing stuff, so I learnt how to do caps and things like that. (Year 7 boy)
>
> The only thing I really did learn was on my iPad and how to send recorded messages to my friend. [My friend] taught me. First she told me by texting me but then after I learnt how to do it, every message we sent was a recording message. (Year 6 girl)

Some children described learning more about themselves in an online context, such as the consequences of spending too much time gaming without a break, and how to self-regulate time online:

> Most of the time when I played the Nintendo Switch for too long I start to get like a small headache. (Year 5 boy)

> Now that I know a bit more I can control myself with PlayStation. Usually I used to go on PlayStation and just not stop. Now I do take breaks a bit. It's because I get bored sometimes. If you keep playing when you're bored, you lose the wanting to play anymore. I have little breaks so I can get something to eat and stuff. If I'm playing a game I'll usually play one or two matches and have a break. (Year 7 boy)

Others described learning how to manage the challenges associated with using technologies in new ways:

> During lockdown we had to do a lot more online stuff, and it was kind of challenging. I learnt how to be more resilient because it's one of our active learner traits. I kept on going and kept on trying with my online learning. (Year 6 girl)

Some described learning how to negotiate the online world, such as how to make new friends:

> I hadn't made any online friends before lockdown. First you need to get in contact with them, and then it's just a process of slowly just playing more and more with them and building their trust, and then you can get this really strong connection with someone. And eventually after lockdown I actually met one of my online friends in real life, and we had a lot of fun. (Year 8 girl)

School-initiated uses of digital technologies

The school-initiated uses of digital technology were very important to many children. It enabled them to access interesting, age-appropriate, online content and keep them connected with their teachers and classmates.

However, comments from children with experience, skills, and interests in using digital technologies suggest that they saw their own activities with digital technologies as more challenging, creative, and fun than both the online and the offline activities provided by their teachers. Several talked about enjoying lockdown because they would do their schoolwork quickly so that they could get on to activities they had designed themselves to do using digital technologies:

> So, I like making games myself, so over lockdown I found it fun to code a few things. We are encouraged to do our schoolwork up to lunchtime and then after lunch, we were encouraged to learn something new or try something or do something out of the ordinary. (Year 8 boy)

These children also talked quite differently about the games provided by their schools and the games they chose to play themselves:

> So, it's like, it's not a math game or anything. It's this really fun game. (Year 5 boy)

> Read Theory is just this comprehension like app. And then this is this fun game that I like playing in lockdown. It's called Roblox. (Year 5 boy)

> I was doing Prototec. It's a math thing where you've got to get all the math questions. It's just a maths sheet that's online. (Year 8 boy)

In general, children found their own choice of online games to be more challenging than those provided by school. They also tended to find the games they chose themselves to be more creative and more engaging, with some experiencing a "state of flow" (Csikszentmihalyi, 1990) when entering the game world:

> Well it feels like I'm out of the real world and I'm actually in the game. In Minecraft you're just a dude made out of blocks and I don't really know how to explain it but as soon as I turn on the game I'm focusing and I feel like I'm actually part of the game, I'm inside the game. I'm not in my body anymore. (Year 8 boy)

Making sense

For most children, lockdown meant more time on devices. Many described using digital technologies for relaxation and entertainment purposes. Several described engaging with content that some adults would consider questionable (e.g., swearing and violence). However, many children described using digital technologies to meet goals or pursue interests that were important to them in the online and the offline world, to exercise their imaginations, to be creative, to learn from or teach others, and to build and maintain relationships.

Some uses of digital technologies described by children were solitary, but many involved collaborating—and learning—with others inside and outside of their bubble. Digital technologies provided children with the opportunity to gain feedback on, and an audience for, the products of their learning.

The children who spent a lot of time on devices did so because they found their online activities to be engaging. Children described enjoying the autonomy, challenge, and choice involved in the digital activities they carried out. This was especially so for online games, a finding consistent with other national and international research and commentary (Bolstad & McDowall, 2019; Gee, 2003, 2013). Some of the children who spent large amounts of time gaming described learning to regulate and vary their use of screen time to avoid boredom or fatigue. Students enjoyed school-initiated uses of digital technologies to connect with others in their class.

The other main school-initiated uses of technology tended to involve practising skills, searching for information, and presenting work. This finding is consistent with findings on the main uses of digital technologies in New Zealand classrooms (Bolstad, 2017). The use of digital technologies to create new content during the level 4 lockdown or play the more complex online games tended to be ones that children initiated themselves. These findings suggest that despite general adult concerns about screen-time, the use of digital technologies made a positive contribution to the lockdown experience of many children.

Self-directed and self-regulated learning

> *I taught myself magic tricks.* (Year 6 girl)
>
> *I learned things by myself. I was a little bit scared because you are going upside down which is scary. So I had to have a mattress before I do it. It was kind of bad because the mattress got wet from the grass but I think my brothers were too scared to do it.* (Year 6 boy)

Self-directed learning can be either self-initiated or through guidance of peers, siblings, and family and whānau. It takes place when the child identifies and takes *ownership* of their own learning. This section focuses on self-regulation, a critical aspect of self-directed learning. Self-regulation occurs when the child consciously *identifies and incorporates* the strategies and purpose that determine how and when to learn.

All children were assigned school-based work during lockdown, While many were connected to their classmates and their teacher online at different times of the day, many also spoke about the freedom of being able to organise their days without external control. This afforded the sense of becoming more self-reliant, autonomous, and independent, being able to make decisions, and therefore being accountable for their own learning. Many children were aware of differences in how they explored this relative freedom and ability to choose their activity in the first few weeks of lockdown, and how, over time, they became more confident and courageous in their ability to self-direct their own learning.

Being freed to a greater or lesser extent from "timetabled" learning meant that they had to question their motives towards learning. They embodied this aspect of their learning through games, play, hobbies and interests, walks or bike rides, and even within schoolwork activities. This sense of freedom and choice, or autonomy, enhanced the ability to regulate their learning in ways, or to degrees, they may not have experienced before lockdown. For many children, simply being able to finish assigned schoolwork by mid-morning meant they could then focus on other aspects of their life and learning that were important to them.

Self-directed learning and risk taking

Independent and self-directed learning came with risks, both real and imagined. Often, children talked about the incidents that arose during their exploration of the outdoors as well as inside. These included falling out of a tree, hiding in "treacherous" places, getting told off for accidentally snapping off tree branches, shooting a sister in the face with a Nerf gun, getting involved in "prank wars", hiding balloons to be popped to scare a brother, and getting a "hiding" for removing the sister's clothes from her drawers:

> Me and my sister played hide and seek outside, tag hide and seek. I hid in the most treacherous places ever. In my backyard there's a hill and that leads into a forest. You know what I'm doing in that forest! I went into the forest and in the middle of that forest there was a tree. It's deep, there's a lot of plants like deep. I hid in those plants, hoping not to get bit by the spider. And then I realised my sister was up there so I climbed high. The tree was about as tall as holy family house. And then I just hid in the top like, 'Don't find me, don't find it'. She found me. I was like, 'Oh, I should've realised this plan. This tree has no leaves.' (Year 6 boy)

A child gave an example of learning new trampoline tricks:

> I learnt how to knee flip and I was getting close to backflipping but I was too scared of it. But I learnt how to do an aerial—a no-handed cartwheel. I saw videos of how to do it and I thought 'That looks cool' so then I decided to try it. I was thinking about doing the backflip but then I realised I didn't really need to do a backflip anyway and I might break myself if I did it. (Year 6 girl)

Another child talked about learning a new trick through observations of his sister who had already mastered the technique, identifying what he was trying to achieve and directing his learning:

> I've started gym, jumping and then doing a cartwheel, land on my hands and then roll over. And then I started jumping and trying to flip around, but I still can't land the flip. I can do a flip around but I can't quite land it. My sister can do a flip and she goes 'Weee', and then goes off to the side. (Year 4 boy)

Play as a form of self-directed learning

In their free time, children typically directed their attention to their own interests, using the resources available to them. One child recalled learning to use a skateboard found in the shed:

> I thought that looks fun so I chucked on a helmet and went to the shed and just started to roll. And I fell off multiple times but you just got to get back up and try again. So that is what I did. So now I am still learning how to ride a skateboard but I know it pretty well. (Year 8 girl)

Activities such as Lego were played more than they would have been at "normal" times. One child was very proud of making a three-room eight-chaired fort from blankets. Children talked about being alone at times and at other times actively involving siblings or parents:

> After dinner my sister and me would go out and play on the tramp until like 7.00. Then we would come inside and put on these headlights that Dad has for mountain biking. We would play soccer in the dark and we would have to guess where we are. It was really fun. We would trip up on each other and stuff. We'd go to the messy-as place up the road. I would ride my bike there for about half an hour, get real muddy and then go home and wash off. I'd go with my sister or parents sometimes. (Year 6 boy)

When playing alone, children self-directed their attention to making up their own game and its rules, or simply following the instructions provided with an existing game. They were not reliant on adults to structure or determine how they engaged with the activity:

> I just used my imagination, I would just think about something and try and put it together. (Year 8 boy)

This free association with play and the ability to self-determine their focus was often described as fun. Imagination and risk taking were also identified by children as part of their learning through play. If something seemed "cool", children were more willing to try the activity. When children determined

what games they were to play during lockdown, they made their choice based on what they liked, but also what they had immediate access to:

> And then the darts because I like to play darts. I played it a bit during quarantine. I just played it with my dad mostly. I went into different rooms in my house that I haven't been in for ages. Like our games room which has a bunch of books and puzzles and stuff and that was fun. So I looked through everything. (Year 8 girl)

Sometimes self-directed learning occurred when stimulus or artefact was provided by a parent or other member of the family and whānau. For example, on being given a Nerf gun by his mother, a child recounted:

> We would go to the garage because there is a little concrete path to it. So we would put up dinosaurs with the garage behind it and put a mat down and get our Nerf guns and try and hit it. (Year 6 boy)

The children talked about ways of being with, and negotiating their play with, their siblings. Often this meant preventing a younger sibling from "destroying" artwork, or towers or games that had been assembled. As one child observed, he found a way to manage this:

> You kind of don't want to make it really interesting, you kind of have to hide it. (Year 6 boy)

Independence and inter-dependence

Children recognised that they needed to create their own goals and persevere towards them without necessarily having an adult watching over them:

> I had to be a lot more independent because I didn't have a teacher watching over me. I had to have more perseverance because if I didn't get it right I had to keep trying. (Year 8 girl)

Children also recognised the motives of others in the family and whānau, such as the mother needing her own time-out which dictated the choice of their own activity:

> Every day we went on a walk or biking. If it was raining we'd just bring an umbrella and go on a walk. My mum didn't want to go, so my dad and my little sister went because my mum said, 'Go outside, you need fresh air!' but she wasn't even getting fresh air. I told her she needed to get fresh air and she said, 'I'm too busy cleaning the house'. She needed a break from us, so we went. (Year 6 girl)

Self-regulated learning included the ability to determine what others were doing in relation to the game, task, or activity, and then intentionally adjusting their own behaviour based on their perceptions of others:

> I was playing hide and go seek or tag with my family. When my dad is 'it' I will stay in the corner. I was like really laughing and looking at my dad. When I see my dad, I've gotta go fast! (Year 4 boy)

Some children could explain how their engagement in an activity, and their role in it, was determined by being with a valued other. The children directed their attention to *who* they were with and *what* they are doing. Such activities were enjoyable. They involved social wellbeing and implicitly learning the rules of games, or the skills of conversation:

> I would take walks. My whole family, we'd go for this mental health walk quite a lot, and it passed my best friend Rosa's house on the walk, so I would sit in her driveway and she would come outside and we'd social distance talk for about half an hour. That was one of my highlights, I loved talked with Rosa. And then we'd walk back home. It always made my day. (Year 8 girl)

Children also knew how to direct their attention to eliciting emotional responses in others. This form of self-regulation had a direct impact on those around them:

> Just drawing, sometimes hide and seek with my little brothers. I'd jump and they'd scream, but not really loud. (Year 5 boy)

Caring for self, others, and pets

Children directed their learning to self-care or care of their pets. Children also identified a range of ways they learnt in relation to their own wellbeing and self-care. It was clear that for some their learning during this time was heightened by a focus on their health, their looks, or their fitness, as well as their eating, hobbies, and entertainment:

> I did a lot of skincare while I was in quarantine. I didn't really do much of that before quarantine but in quarantine, I didn't really have much else to do. So I just found something. (Year 8 girl)

Children also demonstrated heightened awareness of their own health and came up with creative, home-based solutions to address this. For example, one child identified their shower as a self-prescribed treatment plan for hay fever:

> I spent most of my time in the shower so I didn't get a blocked nose. The steam helps your nose not get blocked. (Year 6 girl)

Another child mentioned discovering an allergy to animals which became evident during lockdown:

> I learnt that I was allergic to my animals. That didn't turn out well but that is okay. I am allergic to their fur. (Year 8 girl)

Children talked about the way they cared for, and learnt from, their dogs, pigs, spiders, chickens, cats, kittens, horses, birds, guinea pigs, and other home and farm animals. The self-directed learning was in part determined by the pets' perceived needs, and the games the child wanted to play. Even naming of the pets became an interest:

> I had a pet spider and I named him Bob, for no reason. One day I went to check on him and he was gone. I was sad. He was my little spider friend. He had two long legs at the front, and short ones at the back. He was a small one. He was friendly. I went through different names for him, his first name was Frederick, then it was Shakira, then it was Courtney, then it was Bob. And then after Bob he was Shannon, and then I named him Bob again (laughs). And then Bob ran away. So poor Bob was missing. I was sad. I hope he'll come back one day. (Year 5 girl)

Children directed their learning in the care of their pets. This came in the form of making decisions about teaching their animals and noticing how the animals responded. One Year 6 girl tried to teach her cats, "but (they) didn't listen", while another tried to teach her cats to be friendly:

> I probably most enjoyed playing with my kittens and dog because we got the kittens the day after my birthday and I was trying to make them nice and friendly. Just cuddling them lots and giving them lots of attention. Also I'm trying to make sure that my dog likes them but at the moment he is quite scared of them. You would think the kittens would be scared of him but he is very scared of them. (Year 7 girl)

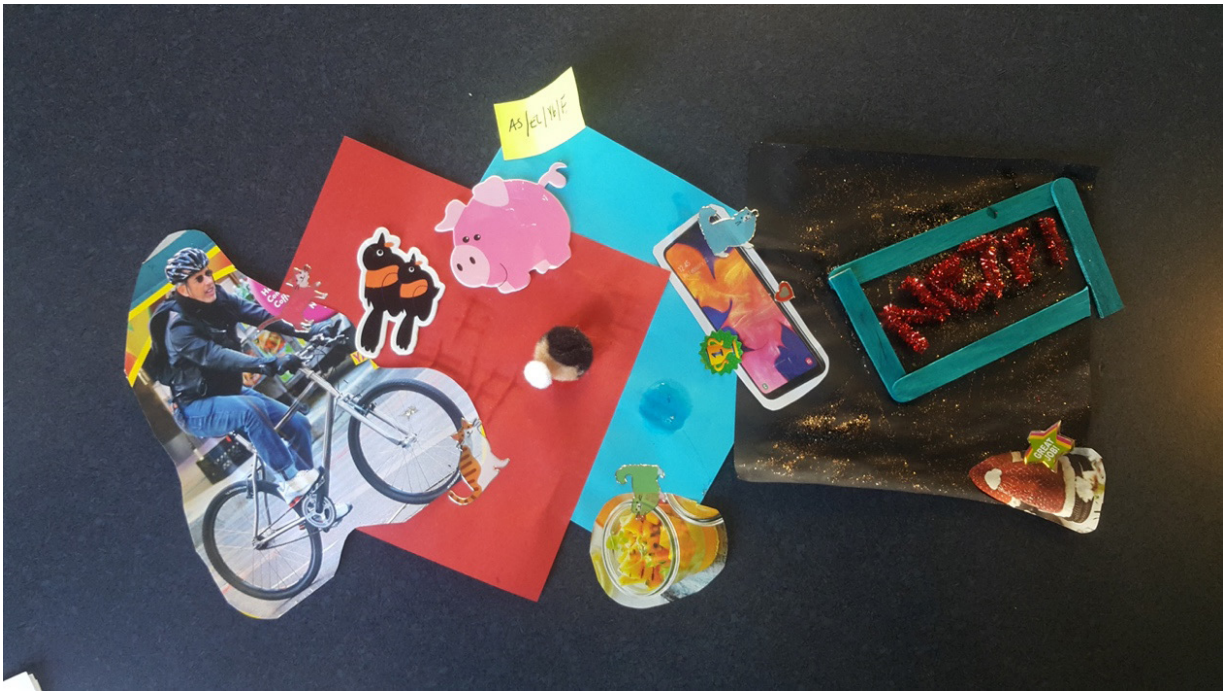
Other children cared for their pets by making them toys or treats. They learnt which materials or ingredients were best to use and how to make them:

> I made them lots of toys out of toilet rolls and stuff. I made treats out of their cat biscuits and catnip. They got really cuddly. They normally have to sleep outside because they pee all over the

curtains but in lockdown they didn't because they were actually better which was surprising. So they slept inside in my bed and that was pretty good because they don't like each other. They got along, I was quite surprised. (Year 8 girl)

As well as the baking, I made some treats for my cats and dogs. For my dog I made these little muffins out of vegetables and meat. I'd put them in these little cupcake holder things. And for my cat I made some little yoghurt popsicles that cats can eat. There was another programme about animals, and they have this website where you can make pet food. There's popsicles, muffins, ice cubes and stuff. I did it by myself. (Year 6 girl)

PICTURE 7. **Tricks on the trampoline**



I wanted to include a trampoline because I learnt some new tricks on it. I learnt how to like knee flip and I was getting close to backflipping but I was too scared of it. But I learnt how to do an aerial, a no-handed cartwheel. I saw videos of how to do it and I thought that looks cool so then I decided to try it. I was thinking about doing the backflip but then I realised I didn't really need to do a backflip anyway and I might break myself if I did it.
(Year 6 girl)

Making decisions

I would look out the window at my Nan and Grandad's. They live on a hill and they have loads of bunnies. They don't have bunnies but they're wild. There were always at least 2 or 3 out there. I would just draw them. I learnt that I'm really good at drawing bunnies. They would normally just sit and stare at me so I just drew them. (Year 6 girl)

The weather during lockdown influenced how and when children learnt, and they focused their learning tasks accordingly. For example, one child explained she did her homework and play games with her mother on rainy days. Others described opportunities presented by the extended lockdown such as learning chess from an older sister and father.

One child was required to stay at her Nan and Grandad's during the first 2 weeks of lockdown, because the family and whānau had just come back from holiday overseas and was not allowed contact. She recalled getting all her food delivered on a tray:

> I would spend a lot of time outside on my drift trike as well running around with the dog because they had a dog named Harley. My drift trike is green and black and you have to ride really fast and then turn the handlebars and it does 360's and it is really hard to get it good but it's really fun. I just figured it out. (Year 6 girl)

Lockdown gave children the time to explore old interests, and they directed their attention to aspects they had forgotten they enjoyed:

> I read one of my series that I had from when I was younger that I hadn't read for a while so I decided it would be fun to read what I had read back then from like 2 years ago. I read that and I started reading a few other books. (Year 8 boy)

Learning a new skill taught him by his father was important to another child who explained he used his computer to invest in companies on the stock market.

Making sense

All children commonly engage in self-directed and self-regulated learning in the home. Home learning is influenced by the child's particular cultural and social environment (Bourke et al., 2018a, 2018b; O'Neill et al., 2017). Home environment and learning context help shape what and how children learn. The range of novel or atypical opportunities that arose at home over the course of the 6-week period was a significant characteristic of children's lockdown learning experience. These included opportunities to take risks, to learn from, care, and play with pets, to exercise responsibility, and to make personal, practical contributions to the daily life of the household bubble.

Children's accounts demonstrated an ability to work out what was important to them, and where they wanted to focus their own learning. These determined the amount of time they invested in their learning, and who they encouraged to participate in their learning. At times children would choose to learn with valued others, and at other times to be on their own.

Self-regulated learners are more likely to be conscious of their own strengths and areas for development, and to adjust their actions accordingly. Lockdown enabled children to identify and hone their individual strengths, dispositions, and values, and to learn more about those of their family and whānau. Crucially, lockdown provided them with a unique combination of time, place, and freedom to acquire new knowledge and practise skills that were important to them. In this way, children had the opportunity to become more proactive in their learning. Many intentionally chose how to explore new knowledge or develop their skills (Zimmerman, 2002) so that they could better negotiate their lockdown childhood world.

The COVID-19 national lockdown environment produced situations that enabled and encouraged children to use their own resources, ask their own questions, and to be motivated to action by these questions. Children were able to self-direct their learning, and to participate collaboratively or on their own in real-life, real-time opportunities for personally meaningful learning. Children were able to establish personal learning goals and strategies, and be guided by these, and could effectively monitor their learning progress.

Conclusion

Compared to many other countries in 2020, Aotearoa New Zealand was fortunate to experience only one, relatively short 6-week period of national lockdown. While this was an unprecedented episode in the lives of children and their families and whānau, the evidence from children's accounts in this study suggests that it was not disruptive or protracted enough to create long-term issues for their formal learning at school. On the contrary, lockdown provided multiple opportunities for children and their family and whānau to engage in beneficial non-formal and informal learning in the home that may not otherwise have occurred.

Many children described their experiences of doing schoolwork at home in thoughtful and insightful ways. All homes and their immediate surroundings had human and material resources to engage and support children's informal learning during lockdown but the number and variety of these varied across households, as indeed did access to and the quality of online formal learning resources and support.

Children's accounts suggested that through the course of the 6 weeks they had acquired a deeper understanding of how to negotiate the conventional requirements and expectations of the classroom in their best interests. As a result of having been confined in the household bubble, many children had also become more aware of the ways in which they could deploy their personal learning strengths and attributes in both informal and formal learning contexts.

It is worth reiterating that the 178 children in this study do not represent the lockdown experiences of all children nationally. Nevertheless, given the opportunity, all children in the study could describe their learning, many in sophisticated and reflective ways.

What we learnt from the children in this study, for example, was that during lockdown they were guided by their own personal interests, as well as by their family and whānau interests. Both intentionally and unintentionally, children learnt diverse skills that they were able to describe and discuss with the interviewers. Children's accounts demonstrated that they were able to establish personal learning goals and strategies, and be guided by these, and could effectively monitor their learning progress.

As the children's approaches to schoolwork during lockdown suggest, strategies to learn and to self-assess meaningfully in the home setting have the potential also to enhance children's ability to self-direct and self-regulate their learning in the classroom and other formal learning settings. Provided adults are prepared to actively listen to them, children have an influential role to play in these respects as their experiences and insights can lead to a more comfortable and productive alignment between the everyday learning processes, activities, and relations that take place at home and those which of necessity occur in the classroom and at school.

While this was a small-scale, snapshot study of children's informal and everyday learning in a very particular set of circumstances, the findings do suggest several potentially fruitful areas for broader research, policy work, and teaching and learning practice in primary schooling. These are premised

on the view that major national and local decisions about schooling policy and practice must include children and young people's voices in matters that affect them.

As we have attempted to demonstrate through our approach to this research, this means ensuring that children's views are treated with respect from the outset when contemplating new initiatives in order to incorporate the distinct understandings that children have of their capabilities, interests, and social worlds. Such approaches would be a practical manifestation of adults' obligations to ensure that children can meaningfully enact their rights under the UNCRC.

One of these rights is to an education that helps every child to develop their personality, talents, and abilities to the full. In formal settings, such an education means adopting a view of learning that actively draws on the funds of knowledge that exist in children's homes and tangibly values the non-formal and informal learning that children and young people bring with them from their many other faith, activity, cultural, and social contexts, both physical and virtual.

Children's accounts of their informal learning reinforced both the central role of parents, grandparents, siblings, and wider family and whānau as teachers and learners in children's lives, and the vital importance of everyday relations and activities, and the cultural and linguistic milieu of the home, to children's development towards self-determination in their learning and living.

Conceptualising all learning in this way as relational, cultural, embodied, and emotional presents opportunities for children to recognise the importance of their informal everyday learning at home, and appreciate how the ability to self-direct, self-regulate, and self-assess their learning can be applied to other aspects of their increasingly complex and socially networked childhood worlds.

References

Bolstad, R. (2017). *Digital technologies for learning: Findings from the NZCER national survey of primary and intermediate schools*. NZCER.

Bolstad, R., & McDowall, S. (2019). *Games, gamification, and game design for learning*. NZCER.

Bourke, R., O'Neill, J., & Loveridge, J. (2018a). *The impact of children's everyday learning on teaching and learning in classrooms and across schools.* http://www.tlri.org.nz/sites/default/files/projects/TLRI%20Final%20Summary%20Report_Bourke%20ONeill%20Loveridge.pdf

Bourke, R., O'Neill, J., & Loveridge, J. (2018b). Children's conceptions of informal and everyday learning. *Oxford Review of Education,* 44(6), 771–786. https://doi.org/10.1080/03054985.2018.1450238

Clandinin, D. J., Caine, V., Lessard, S., & Huber, J. (2016). *Engaging in narrative inquiries with children and youth*. Routledge.

Correa-Chávez, M., Mejía-Arauz, R., & Rogoff, B. (Eds.). (2015). *Children learn by observing and contributing to family and community endeavors*. Science Direct.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper and Row.

Duchesne, S., & McMaugh, A. (2019). *Educational psychology for learning and teaching* (6th ed.). Cengage Learning Australia.

Gee, J. P. (2003). *What video games have to teach us about learning and literacy*. Palgrave Macmillan.

Gee, J. P. (2013). *Good video games + good learning* (2nd ed.). Peter Lang.

Glaveanu, V. P., Hanchett Hanson, M., Baer, J., Barbot, B., Clapp, E. P., Corazza, G. E., Hennessey, B., Kaufman, J. C., Lebuda, I., Lubart, T., Montuori, A., Ness, I. J., Plucker, J., Reiter-Palmon, R., Sierra, Z., Simonton, D. K., Neves-Pereira, M. S., & Sternberg, R. J. (2020). Advancing creativity theory and research: A socio-cultural manifesto. *The Journal of Crea tive Behavior*, *54*(3), 741–745. https://doi.org/10.1002/jocb.395

González, N., Moll, L. C., & Amanti, C. (Eds.). (2005). *Funds of knowledge: Theorizing practices in households, communities and classrooms.* Lawrence Erlbaum Associates.

Illeris, K. (2009). A comprehensive understanding of human learning. In K. Illeris (Ed.), *Contemporary theories of learning. Learning theorists in their own words* (pp. 7–20). Routledge.

Macfarlane, A., Glynn, T., Cavanagh, T., & Bateman, S. (2007). Creating culturally-safe schools for Māori students. *The Australian Journal of Indigenous Education, 36*(1), 65–76. https://doi.org/10.1017/S1326011100004439

Mead, H. (2003). *Tikanga Māori: Living by Māori values*. Huia Publishers.

Ministry of Education. (2009). *Te whatu pōkeka. Kaupapa Māori assessment for learning. Early childhood exemplars*. Learning Media.

Nuthall, G. (2007). *The hidden lives of learners*. NZCER Press.

O'Neill, J., & Bourke, R. (2014). Teaching and learning in everyday activities and settings. In A. St George, S. Brown, & J. O'Neill (Eds.), *Facing the big questions in teaching: Purpose, power and learning* (pp. 28–35). Cengage.

O'Neill, J., Forster, M., MacIntyre, L., Rona, S., & Tu'ulaki Sekeni Tu'imana, L. (2017). Towards an ethic of cultural responsiveness in researching Māori and Tongan children's learning in everyday settings. *International Journal of Inclusive Education, 21*(3), 286–298.

Riley, P. (2007). *Language, culture and identity. An ethnolinguistic perspective*. Continuum.

Rogoff, B. (2003). *The cultural nature of human development*. Oxford University Press.

Rogoff, B. (2012). Fostering a new approach to understanding: Learning through intent community participation. *LEARNing Landscapes, 5*(2), 45–51.

Rona, S., Forster, M., & O'Neill, J. (2018). Māori children's learning over the summer holidays. *Learning, Culture and Social Interaction, 17*, 69–78.

Vygotsky, L. S. (1978). *Mind in society*. Harvard University Press.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice, 41*(2), 64–70.

Appendices

Appendix A Semi-structured interview schedule

Throughout the interview think about the dimensions of informal learning
(Culture, Relationships, Identity, Strategies, Purpose, Affect/ Emotion—CRISPA)

CHECKLIST TO ENSURE FOLLOWING DEMOGRAPHIC IS COLLECTED
DATE:
Name of child
Double-check consent with child
Ethnicity
Year level (no age required)
Interviewer
Photo of artwork *—discreetly use a sticky note to put child's code on corner before taking photo [remove when giving back to child]*

Key points

- Listen out for the term "new" from the start of interview (this indicates the child is learning something or trying out something they had not done before, therefore there is an element of learning to explore.
- Do not take the child down a track you are interested in generally—i.e., this interview is not about curriculum, technology, or the difference between school and out-of-school learning. This may come out of the analysis.
- Take a photo of the artwork with permission although this was noted in the consent form. Let the child take their artwork away with them on completion of the interview. Spend no more than about 8 minutes on Question 1 (the collage)—you can come back to it through the other questions if you need.
- "*Tell me more*" typically produces four times more information than any other probe question.

1. [with artwork as artefact] Tell me about your artwork—what is in it and what is it showing?
   a. [identify key features, what they meant, who was there, how the child felt about these]
   b. Possible probe: Was there anything you wanted to include that you couldn't find a picture for?

2. How did you feel when you first heard there would be no school?
3. What sorts of things did you do at home?
   a. Who did you do things with and where did you do them? Did you go to any places outside of your home? What sort of places did you go to, who went with you, and what did you do there?
4. *[NB: This is likely to have been answered in question 3]* Did you learn how to do any new things at home? Did anyone help you? Or maybe you helped someone else at home?
5. What did you most enjoy? [or alternative, Did anything surprise you about lockdown?]
6. How was home learning different from school learning? Tell me about some of the ways that learning was different for you.
7. Did you discover anything new about yourself and how you learn new things or how you help other people at home learn new things? Learning during rāhui lockdown?
8. What was it like when you went back to school?

Appendix B Codebook from NVivo

Name	Description	Files	References
Accidents, Illness, and Death		5	5
Art		9	16
Boredom		12	13
Pictures		1	1
Celebrations	Birthdays, Easter, Anzac, (Mothers Day)	27	33
Chores and Housework		28	36
Cooking and Baking		70	135
Eating		22	25
Emotions		101	174
Entertainment		6	8
Movies		20	23
Netflix		9	12
TV		8	9
YouTube		16	21
Exercise and Outings	Walks, bike rides, visits to dairy or supermarket	24	55
Exploring your Passions	Passions that link with identity (e.g., I am a dancer, so I danced a lot, or I am Māori so I did kapa haka)	51	115
Family and Relationships	Parents, siblings, grandparents, aunts, uncles ...	26	80
Farming Aspects		8	9
Games	Online and traditional. Interactive and non-interactive	2	2
Sports		41	102
Traditional Games		26	36
Video Games		47	83
Hobbies and Interests	Activities driven by the child	56	128
Imagined Conversations		6	8
Independent Learning		12	23
Interesting quotes		13	20
Language, Culture, and Identity	Cultural practices/protocols. Includes language, dance, food, cultural knowledge, music	0	0

Name	Description	Files	References
Learning with and from Whānau	Includes any whānau (in or outside of bubble). Includes learning from them or teaching them something—a skill or how to do something new	90	290
Natural Environment and Outdoors		63	104
Gardening		17	26
Neighbourhood and Community		14	15
Parents' Work		23	26
Pets		38	68
Play and Toys		28	65
Projects		25	47
Relationships in your Bubble	Learning about people they were with during COVID—noticing different things about relationships	67	123
Relationships Outside the Bubble		34	67
Research Questions		0	0
1. Tell me about your artwork—what is in it and what is it showing?		142	142
2. How did you feel when you first heard there would be no school?		141	141
3. What sorts of things did you do at home? Who did you do them with?		139	139
4. Did you learn how to do any new things at home? Did anyone help you? Or maybe you helped someone else at home?		136	138
5. What did you most enjoy? Did anything surprise you about lockdown?		140	143
6. How was home learning different from school learning? Tell me about some of the ways that learning was different for you.		140	141
7. Did you discover anything new about yourself and how you learn new things or how you help other people at home learn new things?		140	141
8. What was it like when you went back to school?		141	141
School Work		90	185
Sedentary Activities	Couch Potato, Bed	8	14
Social Media		7	9
Socialisation or Lack of		22	37
Structure of Day		48	85
Teddy Bear Observations—not sure where to code		7	9
Unusual Things of Note		3	3

NZCER
Rangahau Mātauranga o Aotearoa

New Zealand Council for Educational Research
facebook.com/nzcer
@NZCER
www.linkedin.com/company/new-zealand-council-for-educational-research