

Infants' and toddlers' interests and inquiries: Being attentive to non-verbal communication



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Photos clockwise from left

Infants and toddlers express their interests and inquiries in various ways. This article explores how teachers in two diverse early childhood education and care settings noticed infants' and toddlers' non-verbal communication, and what was recognised as meaningful interests and inquiries. It draws on data from a two-year Teaching and Learning Research Initiative project currently exploring the nature of children's interests, inquiries and working theories. Particular attention is given in the wider project to interests and inquiries that link with children's families, cultures and communities. Findings revealed that infants and toddlers made real efforts to communicate their interests and inquiries to significant others, using a myriad of non-verbal forms of expression. This article argues that noticing and recognising infants' and toddlers' interests and inquiries requires teachers to be attentive to and knowledgeable about non-verbal forms of expression, and to actively seek out the valued perspectives of each child's family. Implications are presented for teaching practice in infant-toddler education and care contexts, including the importance of drawing on multi-layered understandings of each child to respond meaningfully to interests and inquiries.

Introduction

The early childhood curriculum *Te Whāriki* emphasises the importance of understanding and encouraging children's non-verbal communication styles in meaningful ways (Ministry of Education, 1996). This imperative suggests that teachers be attuned to infants' and toddlers' non-verbal cues, gestures and actions. It is argued that being attuned to infants and toddlers' non-verbal expressions enriches teacher understandings of early learning (Dalli, Rockel, Duhn, Craw, & Doyle, 2011) and enhances the quality of infant and toddler provision (Dalli, White, Rockel, Duhn, 2011). This article draws on findings from a two-year, New Zealand Council of Educational Research-funded Teaching and Learning Research Initiative project currently exploring the nature of children's interests, inquiries and working theories. It addresses one of the project's research questions: "How might teachers notice, recognise, respond to, record and revisit infants', toddlers' and young children's interests, inquiries and working theories?" Emphasis is given to how teachers noticed and recognised infants' and toddlers' interests and inquiries.

This article first discusses non-verbal communication and its potential significance to infants' and toddlers' interests and inquiries. It then introduces relevant theoretical perspectives. Following this, it describes scenarios of four infants and toddlers, along with teachers' and families' valued perspectives. This article argues that making sense of infants' and toddlers' interests and inquiries requires teachers to be attentive to and knowledgeable about infants' and toddlers' non-verbal communication, and to actively initiate dialogue with families to support this sense-making.

"Children purposefully observe events and experiences in their social and cultural contexts, such as homes and centres, with the expectation to participate, either immediately or at a later time, to further their understandings."

Defining non-verbal communication

It is vital that teachers understand and recognise non-verbal communication if they utilise observational data to enhance their understandings of infants' and toddlers' interests and inquiries. This study defined non-verbal communication as the ways in which infants and toddlers, with incomprehensible speech, engage communicatively with others, signal an interest in something or someone, or use peers and adults to achieve personal goals, in social contexts (Lock & Zukow-Goldring, 2010). During such engagement, it is acknowledged that infants and toddlers use and express non-verbal cues, gestures and actions in different ways, in response to the nature of interactions with significant others.

Literature focused on early communication reveals a wide range of non-verbal and expressive forms of communication. Examples drawn on for this study include body wisdom, eye movements, pointing, social referencing, emotions, vocal utterances and baby flirtation. First, "body wisdom" (Gonzalez-Mena & Widmeyer-Eyer, 2012, p. 181) refers to children's ability to coordinate and control their body movements as they explore their world. Second, where infants' and toddlers' eyes move to and what their eyes focus on the most can be an indicator of personal preferences (Gopnik, Meltzoff, & Kuhl, 1999). Third, pointing, which typically emerges in the first year of life, is the directing of attention to something of interest, to request something or to inform (Tomasello, Carpenter, & Liszkowski, 2007). Fourth, social referencing, or checking-in with others, signals a child's ability to read another person's emotions to evaluate a situation. It also refers to the

way an infant turns to a trusted other for reassurance or to gauge his/her feelings about an uncertain situation (Berk, 1996). Fifth, a child's emotions, such as smiling, frowning or giggling, can be a good metric for children's understandings and inquiry, as they often indicate what is going on in the mind (Gopnik, Meltzoff, & Kuhl, 1999). Sixth, vocal utterances are sounds that comprise cooing and babbling in the first months, which later form more distinctive sounds unique to the cultural community in which the child is a member (Gopnik, Meltzoff & Kuhl, 1999). Finally, "baby flirtation" (Gopnik, Meltzoff, & Kuhl, 1999, p. 31) is an infant's ability to coordinate and time his/her gestures, vocalisations and expressions to be in synchrony with the gestures, vocalisations and expressions of others. For example, a baby will coo and smile in response to the cooing and smiling of a significant other as they interact. Overall, knowledge about these and other forms of non-verbal communication can assist teachers to gain insight into infants' and toddlers' potential interests and inquiries.

Noticing and recognising interests and inquiries in theory

Observing and identifying non-verbal forms of communication is an initial step to noticing and recognising infants' and toddlers' interests and inquiries. Yet, the notion of observation can be problematic. Purposeful observation, defined as "a deliberate, active process, carried out with care and forethought" (Smith, 1998, p. 40), requires an awareness of and thoughtful consideration for the learner, which takes time to develop, particularly in regard to the child who is not yet able to verbalise his/her own thoughts. Further, what the observer sees is affected by his/her knowledge about the child and theories

of learning, cultural filters, images of the child and personal experience (Alcock, 2012; Peters & Kelly, 2011). Therefore, it is vital that teachers acknowledge the subjective nature of observation in order to understand the personal nature of the lenses utilised. Teachers can also benefit from professional knowledge concerning meaningful observation. This might include different types of observations that include attention to non-verbal cues, which may encourage teachers to see beyond their own lenses.

Meaningful observation involves paying attention to the subtle characteristics and intricate details of each child's non-verbal cues and actions. This close attention requires that teachers keep their "eyes wide open... to the breadth and detail of children's learning" (Dalli & Doyle, 2011, p. 16) and give attention to the meaning of children's actions (Sands & Lichtwark, 2007). Teachers might also aim to get as close as possible to the child by looking and listening-in, or looking more closely at the child's ability to make sense of what they see, hear and feel (Goodfellow, 2012). Together, these strategies suggest that observing infants and toddlers closely involves thinking deeply and analytically about the non-verbal communication that is seen.

Teachers can draw on relevant theoretical perspectives to support their analyses of non-verbal communication. Csikszentmihayli's (1990) psychological theory of flow suggests that an optimal experience, or "flow activity" (p. 72), is one in which a child pays intense attention to something or someone, has little self-consciousness and no sense of time. Infants' and toddlers' play, which can be a highly enjoyable and self-fulfilling experience, is potentially a flow activity and therefore, an important

context in which such observations might take place. Rogoff, Paradise, Arauz, Correa-Chavez and Angelillo's (2003) theory of learning through observation and intent participation, later referred to as intent community participation (Paradise & Rogoff, 2009), emphasised learning as a socially and culturally constructed process. Children purposefully observe events and experiences in their social and cultural contexts, such as homes and centres, with the expectation to participate, either immediately or at a later time, to further their understandings. Overall, teachers who draw on the above-mentioned theoretical perspectives can potentially deepen their understandings about what infants' and toddlers' non-verbal expressions and actions might mean or represent.

Noticing and recognising interests and inquiries in practice

The findings described in this paper come from a wider Teaching and Learning Research Initiative project. This qualitative study is utilising participant observation by teacher-researchers to generate field notes, photos and videos of children in their everyday centre context. This paper draws on scenarios of four infants and toddlers and teachers' perspectives of these scenarios and conversations with families, including some portfolio documentation related to interests and/or inquiries. Children's scenarios are then analysed and discussed with reference to non-verbal forms of communication and relevant theoretical perspectives to highlight perceived interests and inquiries. The voices of teacher-researchers: Lindy and Bianca from Myers Park KiNZ Early Learning Centre, and Daniel and Trish from Small Kauri Early Education Centre, are reflected in italicised text that provide some background as to the diverse families these children are part of. Both families and teachers who know these children well have provided input into the interpretation. Nevertheless, the project team acknowledges that some uncertainty is still inevitable when interpreting infants' and toddlers' non-verbal forms of expression (Elwick, Bradley, & Sumsion, 2012). Without verbal clarifications from children themselves, there is always potential to misread children's intentions or for other interpretations to exist.

Scenario 1: Mia washes her doll in the centre bathroom.



Description of scenario – Mia was observed washing her doll in the basin with the liquid soap, moving to the shub to rinse her doll with the hand-held shower head, and then walking back to the basin to rinse her doll again. Mia was silent throughout the scenario. When a teacher asked her if she needed a towel, Mia disregarded the question, continuing with her play. Mia did not appear perturbed or interrupted when a young child walked into the bathroom and observed her.

Lindy's perspective on the scenario – *Mia has just turned two. Her father is a New Zealand European and her mother is South African. She has a 7-month-old sister and has been interested in dolls for some time. We thought Mia was acting out the bathing of her baby sister, checking the water temperature on her wrist and going through the process of soaping and rinsing her dolly. The teacher in the scenario also noticed the strong element of sensory exploration as Mia enjoyed the tactile sensation of the water from the hand shower and the taps at the basin. The teacher's response was not to interfere and to give Mia the time and space to continue exploring on her own. Mia was focused on what she was doing, and her responses to the teacher showed that she did not need a teacher to be involved.*

Lindy shares the family's perspective – *Mia's parents watched the video clip at home and Mia's mother explained that using the soap and the hand shower was how Mia washed herself in the bath. She did not think that Mia was re-enacting bathing her sister, as Mia had not been involved in the process. However, the Mum and the two girls all bathed together, so Mia would have seen her mother washing her sister.*

In addition, Mia's portfolio contained a story written by one of her parents about Mia at nine months old, highlighting Mia's interest in cooking at home: "Mia is very interested in looking at people and things, and loves to be part of everyday activities – cooking at home means she sits up on the countertop ... while I am busy preparing food. Watching intently at everything I do, no matter how mundane it may seem." Then, when Mia was 13 months old, one of her parents wrote a story endorsing Mia's involvement in family-related events: "Whenever we are busy in the kitchen ... we sit you on the countertop (in a safe place) and you help mummy bake". Both excerpts suggest Mia has opportunities to observe and be actively involved in particular events at home.

Analysis and discussion – In the scenario, Mia's non-verbal forms of communication appeared to reflect her interest in and inquiry into washing a baby. She used her whole body to participate in the process of washing her doll by walking around the large bathroom, leaning over and into the basin and shub and repeatedly handling and turning the doll when showering it. Mia's eyes remained fixed on her doll, the basin and the shub, reflecting her concentrated efforts on her self-initiated task. Mia's quiet and focused approach reflected a flow activity (Czikszentmihayli, 1990) as she appeared engrossed in what she was doing and paid close attention to the steps involved in the doll-washing routine. Mia did not ask for the teacher's help, even when the teacher checked to see if she needed a towel. On the other hand, the teacher's quiet presence appeared to have afforded Mia the opportunity to sustain her inquiry in her own way. The family's comments about Mia's interest in cooking at home, and the scenario of Mia acting on prior knowledge of washing a baby with soap, water and the shower head, reflected Paradise and Rogoff's (2009) notion of intent community participation as Mia was invited and supported to be involved in experiences at home that are then represented in her play choices at the centre. In particular, Mia's interest in washing the doll appeared to have stemmed from observing and participating in bath-time at home with Mum and her baby sister, despite her mother not realising the link at first.

Scenario 2: Neil explores two hats



Description of scenario – There are two scenes of Neil, both in the centre's outdoor playground. First, Neil was observed leaning against the garden and repeatedly handling a blue woolly hat. He babbled and moved his leg up and down, and looked directly at the teacher. Second, he was observed sitting on the concrete exploring a yellow hard hat and attempting to play peek-a-boo with the hat. In both cases, a teacher stood nearby and verbally interacted with Neil as he explored each hat.

Bianca's perspective on the scenario – *Neil is 18 months old and lives with his parents in a household together with his cousin who is 15 months and his parents. Both his parents are of Indian descent. Neil's exploration of the blue woolly hat was important to us, as it appeared Neil was making attempts to independently get his hat on his head. I left Neil to problem-solve on his own until Neil initiated engagement from me. I interpreted this as a call for help so I put his hat on for him. It is important to us to give children time to problem-solve and make their own discoveries. Three months on and I observe Neil once*

again putting on a yellow hard hat. This clip is important to us as it shows a continuation of his investigation of hats. Again, I did not interfere with Neil's exploration of the hat. Recently, teachers have observed Neil putting objects on his head that look like hats, for example, baskets.

Bianca shares the family's perspective

– *Discussing this clip with his mother we discovered that Neil engages in similar activities at home. She describes that play as similar to what we are seeing with the yellow hard hat. Mum acknowledged that from an early age, they have been playing peek-a-boo type games as well as a game which involves placing something on his head and clapping when it falls off. Other teachers tell us that he continues to have an interest in placing objects that resemble hats on his head.*

Analysis and discussion – Neil's non-verbal forms of expression appeared to indicate an interest in and inquiry about hats. His eyes moved between the hat and the teacher, revealing an interest in both the object and the trusted adult. Also, his interaction with the teacher had a playful and rhythmical-like quality to it as he expressed vocal utterances when the teacher was quiet and he was quiet and attentive when the teacher talked. This reciprocity, coupled with his smiling and happy disposition, reflected evidence of baby flirtation (Gopnik, Meltzoff, & Kuhl, 1999). Further, links to home were represented in his explorations after Mum provided insight about a game involving hats that she and Neil often play at home, which may have links to a cultural game. Mum's insight gave teachers an opportunity to move beyond their initial interpretation of the hat as only an object, to recognising the hat as representing something more significant, that is, his participation and involvement in game-playing with Mum.

Scenario 3: Brooklyn with the indoor and outdoor ramps



Description of scenario – Brooklyn was first observed indoors, rolling a car down a wooden car-park ramp and then using his whole body to climb on and over the ramp. During the exploration, Brooklyn made a few sounds and briefly looked over at the teacher. Brooklyn was then seen outdoors, where he observed an older boy go down a wooden ramp on his bike. Brooklyn then playfully persisted in walking across a wooden plank, behind an older boy who cycled across it. Brooklyn made it across the plank by shuffling along with one foot on the plank and the other on the concrete.

Daniel's perspective on the scenario

– *Brooklyn is 16 months old and lives at home in Mangere Bridge with his extended family. Brooklyn is of Māori descent. Indoors, Brooklyn was very careful how he took a car to the edge of the wooden car-park ramp and then nudged it over and down the ramp. He made noises just before he pushed the car, which sounded to me like 1, 2, 3, go ... It looked like there was a lot of exploring and learning going on in the footage. I wonder if Brooklyn was trying to work out ideas about space, and how his body fits into spaces. It looked like he was trying to fit onto the ramp, and maybe use it to slide down. It also looked like he was investigating spatial concepts as well as the effects of gravity on both a small car, and his body. When playing outdoors, I had set up some ramps for another boy to ride one of our bikes over. I had seen how*

interested Brooklyn was, and how he was intently watching our other children on the ramps. Again, like the car-park ramp, he watched the effects of the ramps on something with wheels – in this case the bike – and then he decided to try it out with his body too. I wonder if through these things Brooklyn was forming working theories about ramps, gravity, movement – wheels versus legs, and the way he fits into the space around him.

Daniel shares the family's perspective – We showed the clips to Brooklyn's great grandfather who was very proud of Brooklyn and mentioned that they spend a lot of time at the nearby park where Brooklyn is an active explorer, and very brave as he climbs up the ladders, uses the slides and climbs over swinging bridges.

Analysis and discussion – Brooklyn expressed multiple non-verbal cues, gestures and actions as he explored the ramps. Together, these expressions appeared to highlight an interest in ramps and how they work. For example, he smiled, appearing happy during his exploration. He expressed vocal utterances as he pushed the car down the ramp, perhaps revealing his thinking about how the car might go down. Brooklyn's body wisdom (Gonzalez-Mena & Widmeyer Eyer, 2012) was apparent indoors, when he manoeuvred his whole body over and across the top of the toy ramp successfully, and outdoors, when he crossed the plank by balancing himself using his feet. In both situations, Brooklyn did not indicate he needed the teacher's help. However, during his indoor play, he briefly checked-in with an adult by looking over to the teacher who was standing nearby. Brooklyn's indoor play reflected a flow activity (Czikszenmihayli, 1990) because he concentrated, took his time, and was fully involved as he explored. Rogoff et al's (2003) notion of observation and intent participation was also evident in his outdoor play, when he keenly observed an older boy on the ramp with the expectation of participating at a later time. We saw this participation as Brooklyn negotiated his own way across the wooden plank. Brooklyn's interest in ramps was clarified and supported by his great-grandfather's explanation of Brooklyn's interest in slides, climbing and swinging bridges in his local community.

Scenario 4: Xavier sees the birds and a dog in the outdoor playground



Description of scenario – Xavier was seen at the top of the slide repeatedly pointing at the birds in the outdoor area. He got up and moved away from the slide to get closer to the birds. As he neared the birds, he watched them intently as they flew away. As he continued to watch them through the centre fence, he heard a dog bark from a parked van outside the centre. He pointed to the dog whilst looking at the teacher, then moved towards the teacher and uttered sounds that signalled an interest in the dog. The teacher verbally responded to Xavier's non-verbal communication. When he reached the teacher, he again pointed at the dog and expressed more vocal utterances.

Trish's perspective on the scenario – Xavier is 18 months old and has attended Small Kauri full time since he was 6 months old. Xavier has an older sister who is 4 ½ years and she also attends the centre full time. Both Xavier's parents work full time. Xavier has Samoan, Māori and Pākeha heritage. Xavier uses a lot of sounds and other non-verbal language, such as pointing, to express his ideas and his thinking. I wondered at the beginning of the scenario when he was at the top of the slide, saw the birds and then began to

walk down the hill, whether he had become 'lost in the moment' and forgotten that he wanted to slide as he paused and then walked back up and slid down the slide. It was almost as if he was saying, "Now where was I?" I felt as the teacher present, that I would verbalise what I felt Xavier was trying to say to me so that I could encourage his verbal language. I also did not stop the flow of what was happening for Xavier by suggesting that he be careful about where he walked on the garden.

Trish shares the family's perspective – I gave the clip to his Mum to watch at home. Her comments were that Xavier loves animals, especially dogs. He also enjoys trips to the park where they often feed the birds. She also spoke about his attempts to communicate his ideas and how easy she is now finding it to understand what he is telling her.

Analysis and discussion – Xavier's non-verbal forms of expression signalled his interest in birds and dogs and a desire to inquire more about them. He moved freely in the outdoor area and used pointing to draw his and the teacher's attention to the birds and the dog. He also made several attempts to make eye contact with the teacher. Xavier smiled and frowned as he watched the birds and dog, suggesting he felt content but perhaps frustrated he couldn't get to the animals as he wished. His emphatic vocal utterances directed at the teacher, coupled with his repeated use of pointing, revealed his desire for something to happen, which we interpreted as him wanting to get as close to the animals as possible. Xavier appearing to forget to go down the slide suggested a moment of flow (Czikszenmihayli, 1990) as he focused intently on the birds. Xavier's interest in these animals was clarified and supported by Mum's explanation that Xavier loves seeing dogs and birds when they go on family excursions.

Implications for teaching practice

In the present study, gathering multiple perspectives about each child's non-verbal expressions enabled teachers to recognise infants' and toddlers' efforts of inquiry, that is, the real and repeated efforts to communicate meaningful interests and inquiries to significant others, using a myriad of non-verbal forms of expression. It also endorsed the importance of collaborative relationships between teachers and families in order to focus on infants' and toddlers' everyday learning in the centre. Notably, several implications for teaching practice were highlighted. First, it is important for teachers to know how

to attentively observe the subtleties of and potential meaning behind infants' and toddlers' non-verbal communication. The table below summarises the non-verbal forms of expression the project team identified in the above scenarios, examples of repeated actions observed, and some analytical questions asked during such observations. Teachers in other settings might adapt something similar by identifying their infants' and toddlers' non-verbal forms of expression, noting down associated observable actions, and considering some analytical questions to make some sense of what is being observed. Second, it is

vital that teachers engage in reciprocal dialogue with families about their child's non-verbal communication to construct shared understandings of meaningful interests and inquiries. Third, drawing on these shared understandings alongside relevant theoretical perspectives, such as Czikszentmihayli's (1990) notion of flow and Rogoff et al's (2003) intent participation, might help teachers to respond more appropriately to infants' and toddlers' efforts of inquiry. Finally, it is vital that teachers remain flexible to the unique and varied ways in which infants' and toddlers' engage in their interests and inquiries.

The non-verbal communication we identified.	Examples of what we observed.	Examples of analytical questions we asked ourselves.
"Body wisdom" (Gonzalez-Mena Et Widmeyer-Eyer, 2009, p. 181)	<ul style="list-style-type: none"> • Whole-body involvement. • Coordinating and controlling body movements to explore. • Using gross motor skills/large muscle groups to manipulate. 	<ul style="list-style-type: none"> • How is the whole body being used and how are we supporting this? • What/who is being explored and manipulated so thoroughly and why might this be? • What does this whole-body engagement/awareness mean regarding interests and inquiries?
Eye movements (Gopnik, Meltzoff Et Kuhl, 1999)	<ul style="list-style-type: none"> • Eyes/gaze repeatedly lingers on something or someone. • Eyes turn swiftly to and fixate on something or someone. • The child is wide-eyed with focused attention. 	<ul style="list-style-type: none"> • Where/who do the eyes repeatedly move to (and away from)? • What/who is at the end of the lingering gaze and how do we respond? • What does this lingering gaze mean in terms of interests and inquiries?
Pointing (Tomasello, Carpenter Et Liszkowski, 2007)	<ul style="list-style-type: none"> • Outstretched arm and straight finger. • Persistent use of pointed finger at something or someone. 	<ul style="list-style-type: none"> • What is intended by this pointing - to direct attention towards something/someone, to request information or to inform? How do we support this intention? • What might this pointing mean in terms of interests and inquiries?
Social referencing [or 'checking-in'] (Berk, 1996)	<ul style="list-style-type: none"> • Turning briefly to a trusted adult during exploration. • Stopping to look up at an adult with a smile or frown or other facial expression. 	<ul style="list-style-type: none"> • Why might this child be checking-in with the adult - for reassurance, guidance or feedback? • What messages does the adult send back with his/her facial expressions? • What might his/her checking-in indicate in terms of confidence to explore/inquire?
Emotions (Gopnik, Meltzoff, Et Kuhl, 1999)	<ul style="list-style-type: none"> • Display of emotions during interaction or independent exploration (e.g., smiling, giggling, or frowning). 	<ul style="list-style-type: none"> • What thinking, understanding or inquiry might be behind these emotions and how do these inform our teaching decisions?
Vocal utterances (Gopnik, Meltzoff Et Kuhl, 1999)	<ul style="list-style-type: none"> • Uttering a range of sounds (e.g., cooing, babbling). 	<ul style="list-style-type: none"> • When are their sounds uttered and how do we respond? • What pattern of sounds is evident? • What might these sounds be communicating in terms of the child's interests and inquiries?
"Baby flirtation" (Gopnik, Meltzoff, Et Kuhl, 1999, p. 31)	<ul style="list-style-type: none"> • Child's gestures, cues and vocalisations are timed and coordinated in response to the gestures, cues and vocalisations of the interactive partner (e.g. cooing when partner coos). 	<ul style="list-style-type: none"> • How is this child being playful or reciprocating in this interaction? • What range of expressions and actions does this child share with us and how are we responding? • What words and tone of voice are we using in our response? • What interest or inquiry might be reflected in this flirtation?

Conclusion

In summary, the scenarios and associated views from teachers and families highlighted that a collaborative approach to analysing video data of infants' and toddlers' interests and inquiries was valuable. Theoretical knowledge about non-verbal forms of communication and learning in community contexts, such as homes and centres, enhanced the interpretations. Such interpretations afforded by reviewing video data several times alongside professional knowledge about non-verbal communication and relevant theoretical perspectives enhanced teachers' practices with infants and toddlers. In particular, teachers were better able to notice, recognise and respond to the ways in which infants and toddlers made sense of the people, places and things in their world. This finding provides evidence for the argument that, in order for teachers to support infants' and toddlers' efforts of inquiry, teachers need to be attentive to and knowledgeable about recognising non-verbal forms of expression and collaborating with families, and to be flexible in their responses.

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