

Strnad Final Project: Toddler Development Report

Part 1: Toddler Development Summary: Ages 12-18 Months

1. Linguistic Development

I. 12-13 months old

For some context, by six months, infants can verbalize random consonants. Babies aged nine months should be able to say repetitive vowels and consonants (“mama, “dada”). By the time they reach their first birthday, toddlers should be speaking simple, two-syllable phrases and words. As opposed to children aged 9-12 months, however, they should say simple words like “mommy” and “daddy” intentionally, rather than just babbling. They should be imitating the speech and sounds of their parents as well. In terms of non-verbal communication, they can gesture to indicate wants and wave goodbye (some kids could be pointing). In addition, even if they cannot verbalize several words, they should still understand what others mean when they discuss everyday objects. For example, if a teacher asks: “Where’s your bunny?” a toddler of this age should be able to bring it over to her. Some children this age could even be speaking one to two words, although this is not a requirement.

II. 14-15 months old

By the time a toddler turns 14-15 months old, they should be able to speak one to three words, although some kids could be speaking up to 5. In addition, they should also be listening to the speech of adults and trying to imitate it, although it is not expected to be understandable yet. Kids also often invent their own words for everyday objects that are easier to say: for example, “A-roo” for kangaroo and “Ga-ga” for Grandma. While other letters, such as “l,” could pose a challenge, they should be able to pronounce words that start with b, c, and d, g. Toddlers this age should also begin to learn sign languages for specific terms, such as “more,” during snack time. They should also point to communicate.

III. 16-17 months old

By the time they turn sixteen or seventeen months old, many toddlers should be able to understand most of what adults are saying, but their own language may not be understandable. They should also be able to point to an object when asked (“Carter, where’s the lamp?”)

IV. 18 months old

By the time they turn one and a half years old, toddlers should be able to point out three body parts when prompted. They should speak up to 3-6 understandable words, and

some toddlers could speak up to 10 words. They should be able to follow simple, two-part commands (“Pick up the cup and bring it to me.”), point to and name objects in objects, and understand words like in, out, hot, and cold.

V. Linguistic Development and Communication Rubric:

1. Speaks simple repetitive syllables, babbles.
2. Points and gestures, creates own words for everyday objects (for example, wa-wa for water).
3. Answers simple yes/no questions (speaks 1-2 words), understands names for everyday objects.
4. Speaks five distinct words and follows one-step commands.
5. Speaks ten different words. Can point out objects and body parts upon request.
6. Follows two-step commands.

B. Social-Emotional Development

1. By 12 months old

At the age of 12 months, toddlers should start to display separation anxiety from their parents at drop-off time, and they’ll prefer familiar people and toys. They should try to imitate the actions of adults: for example, washing dishes and talking on the phone. Toddlers should respond to their names when called and enjoy playing simple games with people (Peek-A-Boo) and giving high fives. In terms of interpersonal gestures, one-year-olds should wave bye-bye to others and shake their head to mean no.

1. By 15 months old

By the time they turn 15 months old, kids should begin to show small signs of empathy. Many will also be attached to a favorite stuffed animal or blanket. When they need help or are in distress, they’ll point and gesture for help. Toddlers should laugh when they’re happy or when something funny happens. They should also display distinct moods and feelings, such as sadness, anger, independence, affection (usually to their parents), frustration, fear, and protest.

1. By 18 months old

By 18 months old, toddlers should also demonstrate emotion and behaviors, such as curiosity, pleasure, and warmth. They should still show affection to their parents and prefer familiar people as they did at a younger age, but at this age, they should start to feel more comfortable playing and exploring away from their parents. By 18 months old, kids should begin to play pretend (feeding a doll, putting a doll to sleep, saying “vroom vroom” while playing with a car). Toddlers should hand things to others, play ball with classmates, and begin to share a little bit. However, they should primarily engage in parallel play, in which they play alongside, but not with, classmates. In addition, toddlers

should begin to greet classmates and teachers and talk into a toy phone. Kids should be able to start saying “please” and “thank you.” Temper tantrums could also begin at this age.

IV. Social-Emotional Development Rubric:

1. Prefers caregivers to strangers, starts to show stranger anxiety. Responds to name.
2. Engages in parallel play with classmates and enjoys waving, saying hi to classmates, and games like Hide and Seek and Peekaboo.
3. Shows empathy and imitation during pretend play: for example, puts stuffed animals to sleep, tries to feed them
4. Continues to engage in parallel play but starts to show curiosity in other children. Displays several emotions (fear, protest, happiness)

C. Physical/Gross Motor Development

1. 12-15 months old

At the age of 10-12 months, babies should be able to pull themselves to a standing position and cruise, which is walking while holding on to a table or shelf. By the ages of 12-15 months, toddlers start standing steadily alone and walking, both alone and with a push toy (such as a shopping cart or a toy stroller). They should also be able to put a puzzle piece into a puzzle or other shaped toys. Some kids this age could also be able to run.

By the time they reach the age of 15 months, toddlers should be able to walk backward and stoop and recover (pick up an object on the floor without sitting down). In terms of gross-motor development, kids should be able to build a tower of blocks and scribble with crayons. 15-month-olds should also be able to take off their clothes with some help.

1. 15-18 months old

When they are 17 and 18 months old, toddlers should start walking up and down the stairs while holding hands with the teacher or the railing. In addition, they should be able to kick a ball, throw it underhand, and could start using a pull toy. Kids should also be able to pick up and eat snacks, use forks and spoons, and drink from a sippy cup. Toddlers should start running anytime from 18-24 months.

1. Physical and Gross Motor Development Rubric

2. Starts walking
3. Uses pull toy, completes a puzzle
4. Stoops and recovers (picks up an object on the floor without sitting down)

5. Walks backward
6. Builds a tower of blocks
7. Scribbles
8. Walks up the stairs while holding hands or railing

Part 2: Observations and Discussion of Findings of Study in the Hathaway Brown Infant and Toddler Center

This part of the report describes the finding of my observations of toddlers (who were roughly in the age range of twelve to eighteen months) at the Hathaway Brown Infant and Toddler Center **from October 2020 to March 2021**. The report will describe the development of each toddler individually first, and it will report on group trends at the end.

There were 5 participants in the study from the Toddler-2 classroom at the ITC; The first, #1, was 15.5 months old at the start of the study and 21 months old at the end. The second, #2, was 14 months old at the start of the study and 19.5 months old at the end.

The third, #3, was 13.5 months old at the start of the study and 19 months old at the end.

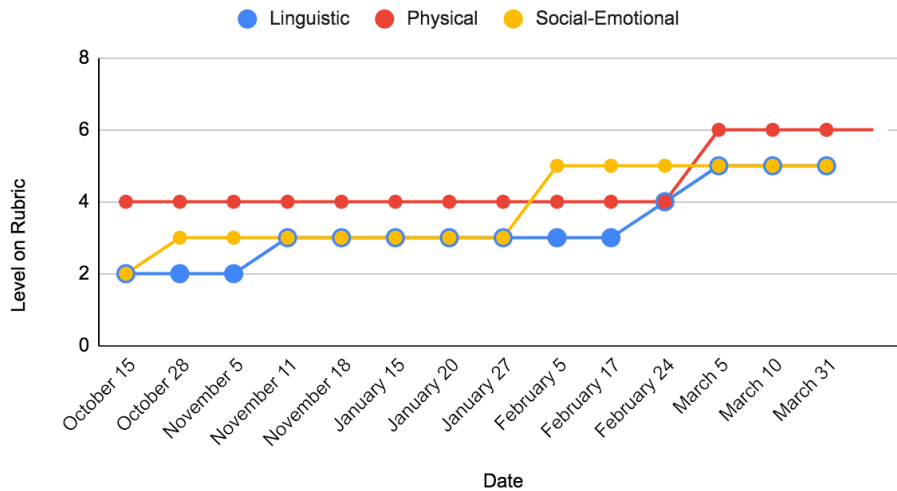
The fourth, #4, was 11.5 months old at the start of the study and 17 months old at the end.

The fifth, #5, was almost 10 months old at the start of the study and 15 months at the end.

Section 1: Participant 1 Development

Participant 1 was 15.5 months old at the start of the study and 19.5 months old at the end; they were the oldest participant in the project.

Participant 1 Development



Linguistic Development

Participant 1 showed consistent linguistic development growth over the course of the year. In the first two months, they pointed and used baby sign language to communicate, and by mid-November, they were speaking words like “Hi” and “Up,” recognizing body parts as well. In late February, Participant 1 began following one-step commands and speaking five distinct words. Just a couple of weeks later, they said ten unique words and pointed to objects I asked them to identify, achieving the highest level on the rubric.

Physical Development

Participant 1 moved up the levels on the Physical Development rubric more slowly, but they met the appropriate age benchmarks. By the second observation, they were walking with a push toy, and in November, they climbed on the classroom slide and tunnel and rolled over. By January, Participant 1 would slip into yoga poses, and in March, they were stacking towers of blocks and riding a rocking horse toy.

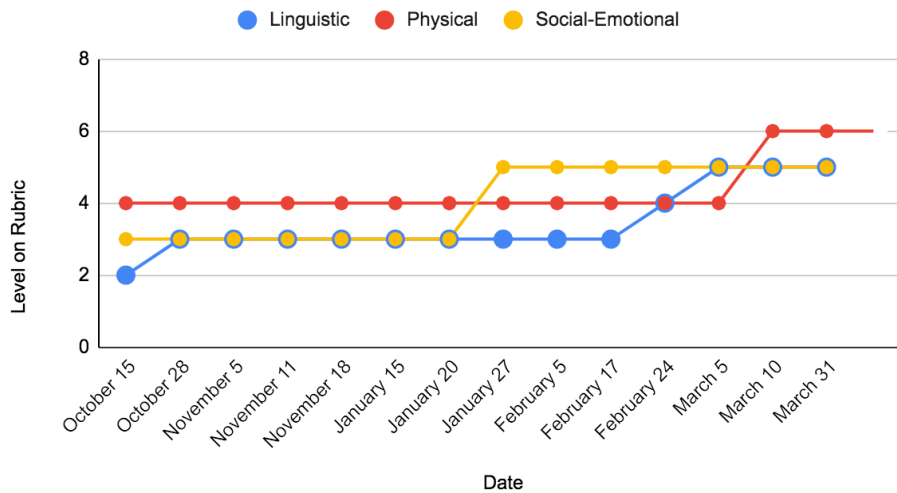
Social-Emotional Development

Participant 1 seemed to be the most social toddler of the bunch. They were always excited to see people when they entered the classroom and loved interacting with others. Participant 1 was also the most expressive about their emotions. Even in October, when I was new to the classroom, they smiled at me often and gave me high fives. Participant 1 would also imitate my actions, initiate peekaboo games without prompting, and try to share toys with me early on in the year. By mid-November, they started to interact with classmates in simple games and display distinct emotions, experiencing mood swings throughout the afternoon. For example, they would make it

clear how upset they were when a classmate took their toy. By February, Participant 1 was showing empathy and engaging in pretend play with toy dolls. In March, they started to share toys with other students, illustrating how they were beginning to show interest in interacting with their classmates. By the end of the study, they consistently displayed clear moods (sadness when not taken on a walk, for example) and occasionally fought with other students over toys.

Section 2: Participant 2 Development

Participant 2 Development



Section 2: Participant 2 Development

Linguistic Development

In the fall, Participant 2 was quick to respond to their name, gesture for what they wanted, and shake their head in response to questions. In November, they were making up their own words for everyday objects. Participant 2 said distinct words like “Hi” and “No” and imitated the sounds of others in the winter. By March, Participant 2 was pointing to their shirt, shoes, and classmates upon request, and they were speaking five words as well.

Physical Development

Even on the first observation, Participant 2 was doing yoga poses and rolling over for fun. They quickly climbed on the tunnel and playground equipment. By November, they

were pushing the table and sliding across the classroom, and they played with a toy train. Participant 2 was consistently jumping, quickly squatting and standing up repeatedly, attempting to climb on a rocking chair, and sliding up the tunnel on their stomach throughout the spring.

Social-Emotional Development

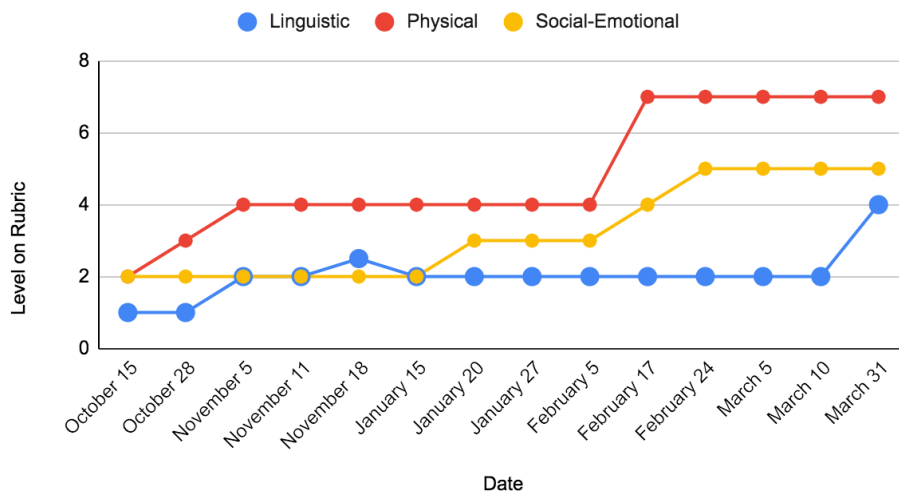
Participant 2 enjoyed playing games like peekaboo and interacting with others, more so as the year went on. Participant 2 was slightly less prone to displaying emotions (such as laughter and frustration) than the other students, but they still consistently met benchmarks and moved up the rubric levels.

In October, Participant 2 would laugh, smile, and look confused when a classmate near them looked upset. They engaged in parallel play and interacted with me, imitating my movements, waving, playing peekaboo, and reaching for my things. Participant 2 handed books to other students as well, and they engaged in parallel play. When Participant 2 was upset (a parent was late, for example), they would display increased separation anxiety when a teacher left the room.

Participant 2 became more interested in other children in January (they also said hi to me for the first time!) In addition to pointing, waving, and smiling at me often, they patted another participant's hair and smiled at a nearby infant. They responded to their name consistently as well and began to show stronger mood swings as the winter progressed, quickly switching from happily playing games to having a meltdown. By the spring, they were happy to see their friends when they entered the classroom and continued to seek interactions with others.

Section 3: Participant 3 Development

Participant 3 Development



Linguistic Development

Participant 3 started the year speaking in simple, repetitive syllables and babbling. They responded to questions like “Can you bring me the book?” in November, and they were pointing and gesturing to indicate their wants. By March, Participant 3 was speaking five distinct words and responding to questions consistently.

Physical Development

At the start of the study, Participant 3 was starting to walk. The following week, they were playing with puzzles. By early November, Participant 3 was stooping and recovering, displaying quick growth early on in the study. By February, Participant 3 was scribbling on a drawing board, demonstrating fine motor skills, and continued to do so until the end of the study.

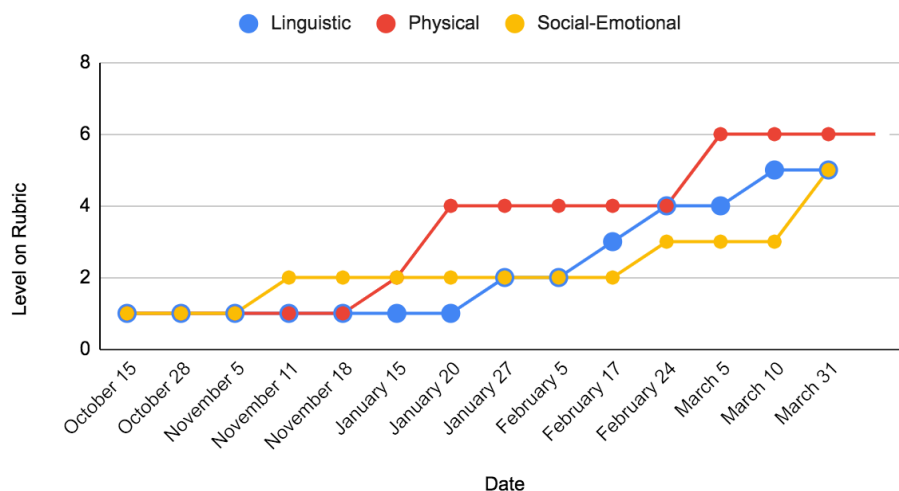
Social-Emotional Development

Participant 3 was the toddler who consistently displayed the most separation anxiety, although it did taper off towards the end of the year. They were excellent at pretend play and imitation throughout the year.

Participant 3 displayed extreme separation anxiety for most of the fall, getting upset when a teacher would leave the room for a few minutes. Participant 3 started engaging in parallel play with other students in January and enjoyed playing peekaboo with me more than they had earlier in the year. They smiled and waved at the infants in the next classroom, and they definitely cried less than they did in the fall. By mid-February, Participant 3 engaged in pretend play and showing empathy, caring for a toy doll, and started imitating my actions frequently. Participant 3 continued to share, interact with classmates, and display less separation anxiety until the end of the study.

Section 4: Participant 4 Development

Participant 4 Development



Section 4: Participant 4 Development

Though the second-youngest of the group, Participant 4 displayed speedy growth, quickly catching up to the levels of the oldest two by the end of the study. Participant 4 was the most vocal of the group, and they were quite social as well!

Linguistic Development

At the beginning of the study, Participant 4 spoke simple, repetitive syllables and started to learn baby sign language. In the winter, they started pointing and gesturing (shaking their head, for example), and they said “hi” to me for the first time. In mid-February, Participant 4 learned a phrase: “Uh oh!” and came over to me when I called their name; by the end of the month, Participant 4 was speaking around three distinct words and pointed to classmates when I asked them where they were. In early March, they said five unique words and continued to point out objects consistently. By the end of the study, Participant 4 was very chatty, speaking ten distinct words, following one-step commands, and using phrases like “thank you.” They experienced the quickest growth in the final two months of the study, moving from levels 3 to 5 in just three weeks.

Physical Development

At the beginning of the study, Participant 4 was army-crawling (creeping), pulling to stand to play with a toy, and cruising. They rolled a ball and shook the baby gate often as well. In early November, Participant 4 was crawling normally and swiveled around while sitting on the floor and played with a toy train.

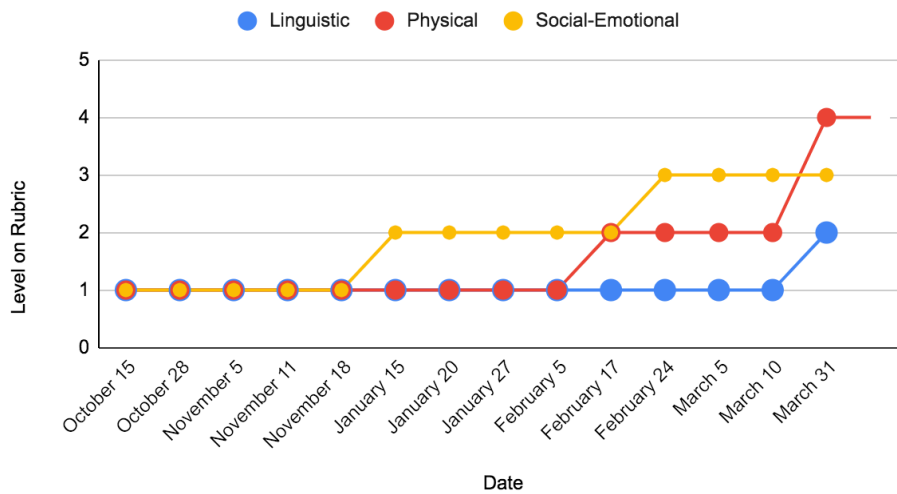
By mid-January, the first observation after winter break, Participant 4 was walking confidently. They also climbed the classroom toy tunnel, played with a ball scooting down the stairs, and stooped and recovered, reaching many significant milestones. By February, they were climbing up on a chair independently and going down a slide, and towards the end of the study, Participant 4 rid a rocking horse toy.

Social-Emotional Development

Participant 4 was very social from the beginning: they came to the gate to meet me and were happy to play peekaboo with me. Participant 4 appeared excited when a teacher entered the room and smiled and waved to others often. In mid-November, they started to display some separation anxiety, getting upset when a teacher left the room, but also began to show an interest in playing simple games with classmates. In January, Participant 4 was coming up to the gate with a book for me and smiling and waving to their classmates; they loved seeing the infants in the classroom as well. In February, Participant 4 began to show signs of empathy both in pretend play (they hugged and talked to their doll) and with other toddlers, as they handed an upset classmate a toy. By the end of the study, Participant 4 was beginning to show distinct moods and sometimes clashed with classmates over toys.

Section 5: Participant 5 Development

Participant 5 Development



Section 5: Participant 5 Development

Participant 5 was the youngest toddler in the study. They were only ten months old when the study started, explaining why their rubric scores are lower. Towards the end of the observation period, Participant 5 started to display growth in the Physical and

Social-Emotional categories. For example, they learned to walk and stoop and recover in February and March.

Linguistic Development

In the fall, Participant 5 babbled and spoke simple repetitive syllables. In January, they tried to imitate me when I said words like “hi” and “glove,” and in February, they said simple words like “mama.” By the end of the study, Participant 5 was pointing and gesturing, and they started to use phrases like “Uh oh!”

Physical Development

In the fall, Participant 5 crawled and pulled themselves to a standing position, often shaking the classroom’s baby gate. In January, they crawled through the classroom tunnel, rocking a rocking chair and pushing the baby gate’s button. Later that month, Participant 5 began cruising and walking with a push toy, and in February, walked for the first time, though they fell shortly after. The following week, they were walking longer distances and going down the slide. In early March, Participant 5 appeared close to stooping and recovering, bending down to push a toy car. By the end of the study, they were squeezing their own applesauce pouch.

Social-Emotional Development

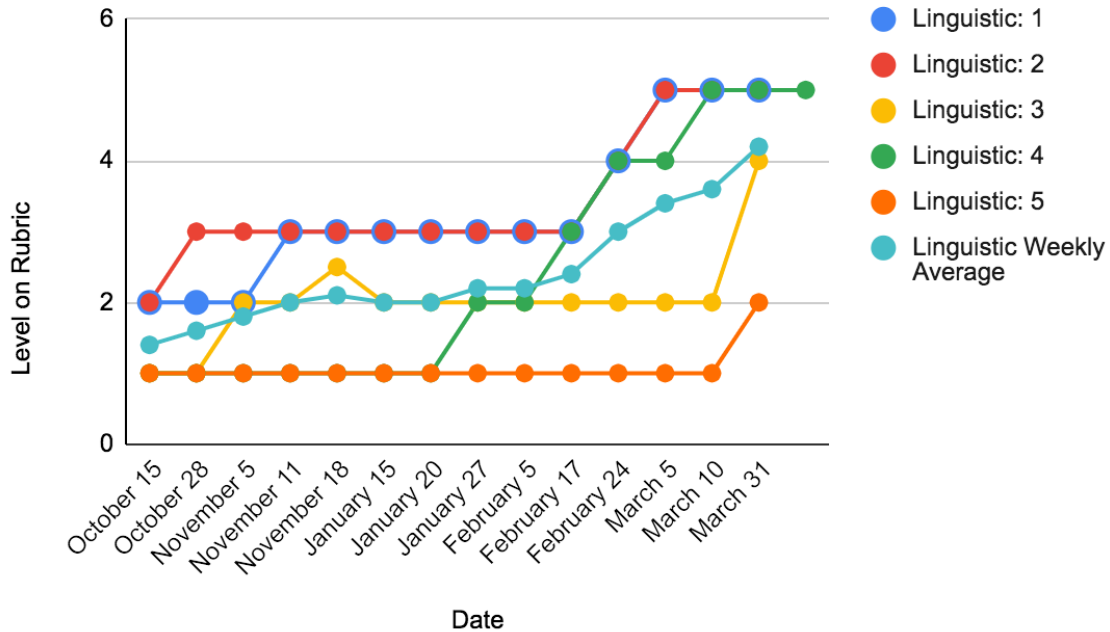
Participant 5 responded to their name throughout the fall and displayed some separation anxiety, crying when a teacher put them down or left the room. They appeared more upset when they were tired or sad. By November, Participant 5 became more social; they came to the gate when I asked them to, felt my glove, and smiled at me when we played peekaboo. In January, Participant 5 handed a toy to another classmate, starting to get involved in parallel play, and they continued to happily play peekaboo with me. In February, they imitated the actions of adults by wiping the table and interacted with the infants in the next classroom over, smiling and pointing at them. As the study ended, Participant 5 continued engaging in parallel play more often and interacting with others.

Discussion

Group Averages

Group Averages for Linguistic Development

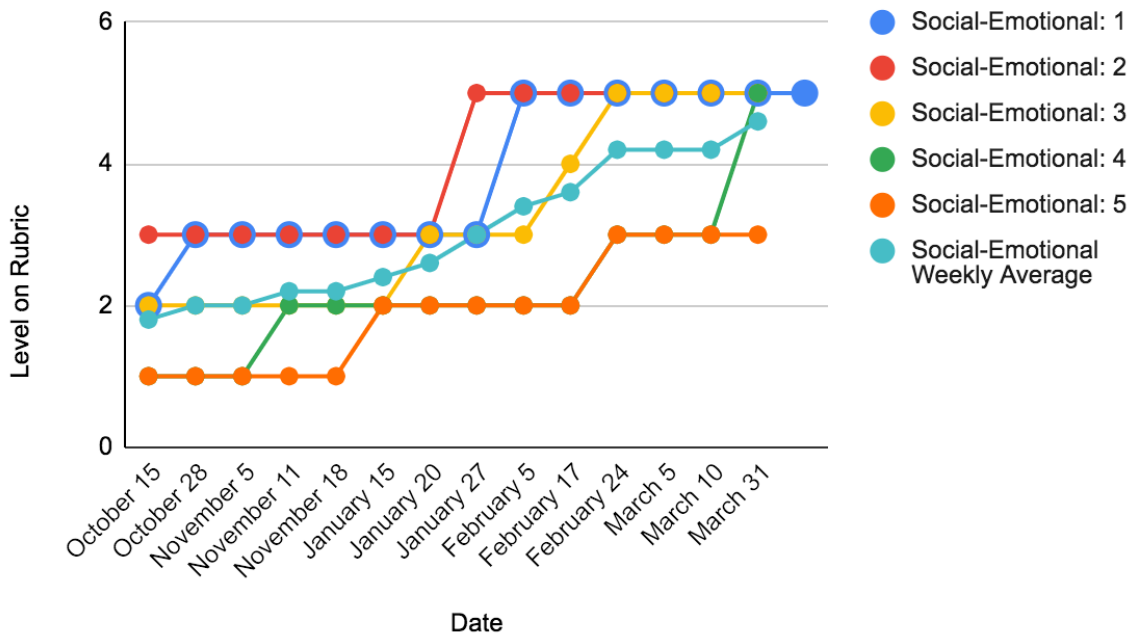
Linguistic Development: Individual and Average



Participants 1 and 2 remained above average for the duration of the study, moving up levels relatively quickly. Participant 3 vacillated between being under and over the average line. Participant 4 started out under the average line, but by February, they had moved far above it after experiencing rapid growth, reaching the same levels as the oldest two participants. Participant 5 stayed below the line, but they still made age-appropriate progress.

Group Averages for Social-Emotional Development

Social-Emotional Individual and Average



Participant 1 displayed growth that was consistently over average. Although they were not the toddler who rose between levels the fastest, Participant 1 remained above average throughout the study, moving through levels slightly more quickly than Participant 2. Participant 2 also remained above average throughout the study, and they consistently displayed proficient social-emotional growth.

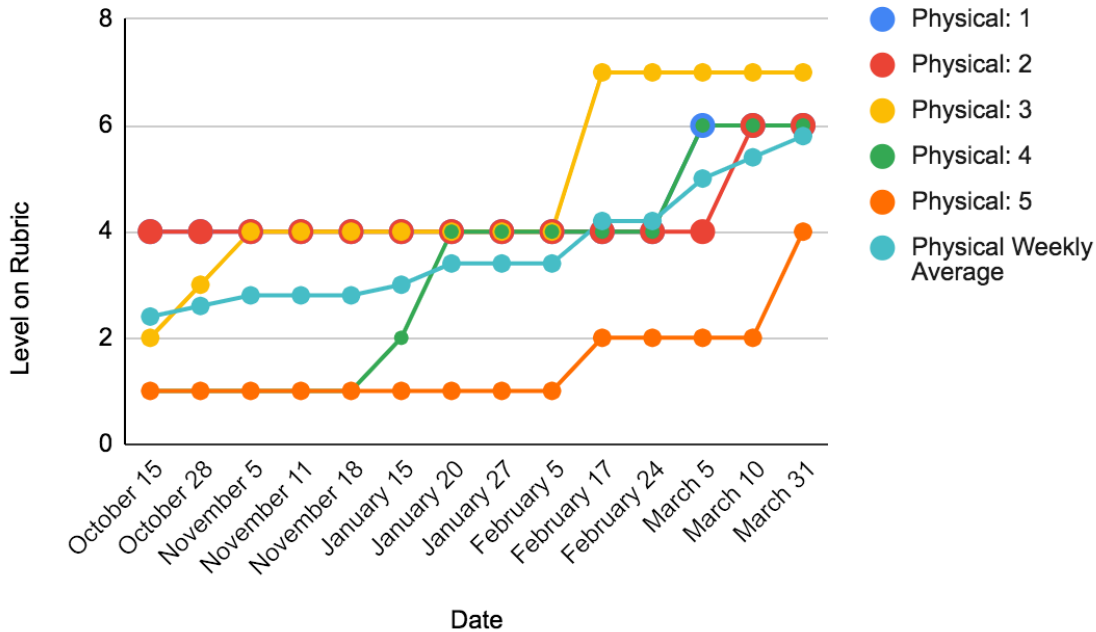
Participant 3 was very close to the average line until February, and after that, they rose above it, joining the oldest participants on Level 5.

Participant 4 started the study below the average line. Though they almost reached it in November, they slipped below it again until late March, when they jumped to Level 5 and ended the study above average.

Being the youngest toddler in the study, Participant 5 remained below the line for the duration of the study, but they still demonstrated strong social-emotional growth.

Group Averages for Physical Development

Physical Development: Individual and Average



Participants 1 and 2 remained above average for the duration of the study and displayed strong physical growth (they were very adventurous!) as the year progressed.

Participant 3 spent the first week under the average line, but they moved above it the next week. In late January, they moved to Level 7 on the rubric, placing them high above the group average for physical development; Participant 3 was the highest scorer in this category.

Participant 4 started the year below the average line with Participant 5. However, they soon began to move up, displaying extremely rapid growth from November 18th to January 20th as they joined Participants 1 and 2 on Level 4 and cemented their place above the average line, finishing the study on the same level as the oldest two toddlers.

Participant 5 remained below the line for the duration of the study, likely because they were the youngest child in the study, but it was a great experience to see them consistently move up on the physical development movement as they acquired new skills and learned to walk.

The time it Took the Toddlers to Move up on Levels on the Rubric

The following section details trends in how long it took the participants to advance between levels on the rubric.

Linguistic Development: Time Taken to Move Up

Linguistic	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Average Time to Move Up
First Day on 1			October 15	October 15	October 15	
Days: 1-2			21 days	92 days	167 days	93.33333 days
First Day on 2	October 15/20	October 15	November 5	January 15	March 31	
Days: 2-3	27 days	13 days		33 days		24.33333 days
First Day on 3	November 11	October 28		February 17		
Days: 3-4	105 days	119 days		7 days		77 days
(DAYS 2-4)	(132 days)	(132 days)	146 days	40 days		112.5 days
First Day on 4	February 24	February 24	March 31	February 24		
Days: 4-5	9 days	9 days		14 days		10.666666666666667 days
First Day on 5	March 5	March 5		March 10		

I noticed that it took Participant 3 a significantly smaller amount of time to move from levels one to two on the linguistic rubric than Participant 4, who took a smaller amount than Participant 5. Since the participants were numbered in age order, this data supports the idea that older toddlers move up on the levels faster, possibly because they are more ahead in their development.

Participants 1 and 4 took about thirty days to move from levels two to three, while it only took Participant 2 about two weeks to start answering yes and no questions and understanding names for objects. It was also significant how Participant 3's linguistic development seemed to skip past a level: they went straight from Level 2 to Level 4. Participant 3 was following commands and clearly speaking five words before they learned to answer questions, illustrating how the development of some toddlers can proceed in a different order than what is expected. It took Participant 3 146 days to move from Level 2 to Level 4, which is only two weeks longer than it took the first two toddlers in the study to move through these levels. This data illustrates how their overall development was similar. Participant 4, meanwhile, took only forty days to move between Levels 2 to 4, illustrating how they demonstrated rapid growth towards the end of the study.

It took Participant 1 and Participant 2 about the same time to move from answering yes/no questions and understanding names for objects to speaking five distinct words, although Participant 1 was slightly faster. It was significant how Participant 4 moved between these levels in just a week, illustrating how Participant 4's vocabulary development occurred rapidly.

Only participants 1, 2, and 4 reached the fifth on the linguistic rubric, meaning that they moved from speaking five words to speaking ten words and pointing out body parts upon request. It took Participants 1 and 2 nine days to move up to this level, and Participant 4 took fourteen. This rubric jump was the fastest between-level movement that Participants 1 and 2 saw throughout the study, and it continued Participant 4’s streak of rapid growth.

Physical Development: Time Taken to Move Up

Physical	1	2	3	4	5	Average Time to Move Up
First Day on 1				October 15	October 15	
Days: 1-2				92 days	125 days	108.5 days
First Day on 2			October 15	January 15	February 17	
Days: 2-3			13 days			13 days
First Day on 3			October 28			
Days: 3-4			8 days			
DAYS: 2-4			21 days	5 days	42 days	23.5 days
First Day on 4	October 15	October 15	November 5	January 20	March 31	
Days: 4-5						
First Day on 5						
Days: 5-6						
DAYS: 4-6	141 days	146 days		44 days		110.333333 days
First Day on 6	March 5	March 10		March 5		
Days: 6-7						
First Day on 7			February 17			
DAYS: 4-7			104 days			104 days

Participants 1 and 2 displayed very similar physical development growth throughout the year: they both started on Level 4, stooping and recovering, and advanced directly to Level 6, building towers of blocks in early March.

It took Participant 3 only 13 days to move from Level 2, starting to walk, and Level 3, using a pull toy. They continued moving up levels quickly, beginning to stoop and recover just eight days later. Participant 3 stayed on Level 4 until mid-February, when they started scribbling on a drawing board. Participant 3 was the only toddler to reach this level.

Participant 4 started the year crawling and pulling to stand, and they began to walk in mid-January. Just five days later, they were stooping and recovering, quickly skipping to Level 4. It took Participants 3 and 5 twenty-one and forty-two days, respectively, to move from Level 2 to Level 4, demonstrating how Participant 4 was the toddler who experienced the fastest physical development throughout the study.

Like the oldest two toddlers in the study, Participant 4 also jumped directly from Level 4 to Level 6 in the final weeks of the study. However, they did it in less than a third of the

time than it took them, illustrating how Participant 4 developed at a quicker rate than the other students.

Participant 5, like Participant 4, started the year crawling and pulling themselves for a standing position. They learned to walk about a month after Participant 4 did, taking 125 days to reach Level 2. Participant 5 advanced to Level 4 when he began stooping and recovering on March 31. It took Participant 5 longer to reach this stage than it took Participants 3 and 4, likely because Participant 5 is younger.

Social-Emotional Development: Time Taken to Move Up

Social-Emotional	1	2	3	4	5	Average Time to Move Up
First Day on 1				October 15	October 15	
Days: 1-2				27 days	92 days	59.5 days
First Day on 2	October 15		October 15	November 11	January 15	
Days: 2-3	13 days		97 days	105 days	40 days	63.75 days
First Day on 3	October 28	October 15	January 20	February 24	February 24	
Days: 3-4			28 days			28 days
First Day on 4			February 17			
Days: 4-5			7 days			7 days
First Day on 5	February 5	January 27	February 24	March 31		
Days: 3-5	100 days	104 days	35 days	35 days		68.5 days

Participants 1 and 2 displayed similar social-emotional development. Participant 1 started the study on Level 2, displaying stranger anxiety and imitating the actions of adults, but they quickly moved up to Level 3 in about two weeks, meaning they started to engage in parallel play and interacting with others in the classroom more. Participant 2 started on Level 3, and both of the older participants jumped up directly to Level 5 within one week of each other. It took them both about 100 days to move from Level 3 to Level 5.

Participant 3 started the year on Level 2 and stayed there for quite a while, as they were the toddler who consistently showed the most stranger anxiety throughout the year. In late January, Participant 3 moved up to Level 3 as they began engaging in parallel play and played simple games like peekaboo. After they reached Level 3, Participant 3's rate of social-emotional development began to increase. About a month later, they reached Level 4, showing empathy and imitation during pretend play as she played with a doll. Just one week later, Participant 3 moved up to Level 5 because they began to show less stranger anxiety, became more comfortable sharing toys and playing games with other children, and began to show distinct moods.

Participants 3 and 4 had similar development, although the latter did skip Level 4 and reached levels about a month after Participant 3 did. Participant 4 started the year on

Level 1, responding to their name, but had moved up to Level 2 by mid-November. It took Participant 4 105 days to move up to Level 3, almost the same amount of time as it took Participant 3 to start engaging in parallel play and playing simple games. Participant 4 skipped Level 4 and went straight to Level 5, starting to show interest in other children and displaying several emotions. They engaged in pretend play and were upset over having to share a toy. Interestingly, it took them thirty-five days to move up from Level 3 to Level 5, the same amount of time it took Participant 3, although Participant 3 did reach Level 5 about a month before Participant 4 did. It's also intriguing how it took the older two toddlers about one hundred days to move from Level 3 to Level 5, while Participants 3 and 4 did it in a little over a month. The younger two participants displayed more consistent growth and moved up levels more quickly at the end.

Participant 5 started the year responding to their name. By the middle of January, they had moved up to Level 2, smiling at me, imitating teachers when they were cleaning the classroom, and starting to show interest in playing near and interacting with other students. Participant 5 was the quickest participant to move from Level 2 to Level 3, doing so in just forty days, while it took Participants 3 and 4 around one hundred days, highlighting how quick Participant 5 was to start interacting with other children.

How Old Toddlers Were When they Moved Up Levels on the Rubrics Compared to Expected Ages

Physical Development

Physical	1	2	3	4	5	Average Age on First Day	Expected Age to Hit Milestone
First Day on 1				October 15	October 15		
Age on First Day				11.5 months	~10 months	10.75 months	10-12 months (Crawls and pulls to stand)
First Day on 2		October 15		January 15	February 17		
Age on First Day		13.5 months		14.5 months	14 months	14 months	12-15 months (Starts walking)
First Day on 3			October 28				
Age on First Day			14 months			14 months	12-15 months (Use a pull toy, complete a puzzle)
First Day on 4	October 15	October 15	November 5	January 20	March 31		
Age on First Day	15.5 months	14 months	14 months	14.5 months	15 months	14.6 months	15 months (Stoops and Recovers)
First Day on 5							
Age on First Day							
First Day on 6	March 5	March 10		March 5			
Age on First Day	20 months	19 months		16 months		18.33333 months	15-18 months (Build a tower of two blocks)
First Day on 7			February 17				
Age on First Day			17.5 months			17.5 months	15-18 months (Scribbles)

Participants 4 and 5 started the year in the expected age range for the first milestone on the physical rubric, crawling and pulling to stand. It took Participants 4 and 5 three and four months, respectively, to move up to the next level, starting to walk. They were 14 months old, towards the end of the expected age range for this milestone. Participant 4 was still 14.5 months old when they skipped up to Level 4, stooping and recovering,

five days later, meaning that they reached this milestone slightly earlier than expected. Participant 5, meanwhile, was 15 months old when they learned how to stoop and recover towards the end of the study, which is the age that the rubrics predicted toddlers should reach this milestone. Finally, Participant 4 was sixteen months old when they first built a tower of blocks, placing them in the expected age range for meeting this milestone. Participant 5's physical development matched the expected ages outlined in my research, while Participant 4 reached some milestones a little earlier than expected.

Participant 3 first began walking at the very beginning of the study when they were 13.5 months old, which was towards the middle of the expected age for this milestone. Participant 3 also started walking slightly earlier than the two participants younger than them, mentioned above. Just two weeks later, they were using a pull toy and completing a puzzle, once again showing on-track development. Participant 3 was fourteen months old when they started to stoop and recover, about one month younger than the rubric predicted them to reach this skill. They were 17.5 months old when they skipped up to Level 7, scribbling on a piece of paper, achieving the milestone towards the end of the expected age range. Participant 3's physical development conformed strongly with the anticipated ages of the rubric's milestones, and on occasion, she moved up rubric levels quicker than other classmates and published predictions.

Participant 2 was fourteen months old when they started to stoop and recover; just like Participant 3, they were slightly early to reach this milestone. They were nineteen months old when he began to play with blocks, a little later than expected, but still displayed considerable physical strength throughout the year, pushing the tunnel and the slide across the classroom and climbing onto the rocking chair often.

Participant 1 was 15.5 months old when I recorded their first observation, and they were on Level 4, stooping and recovering. They concluded the study on Level 6, building a block of towers, at 20 months old, a couple of months over the expected age that toddlers reach this milestone.

Social-Emotional Development

A	B	C	D	E	F	G	H	I	J
Social-Emotional	1	2	3	4	5	Average Age on First Day		Expected Age to Hit Milestone	
First Day on 1				October 15	October 15				
Age on First Day				11.5 months	10 months	~10.75 months		12 months	
First Day on 2	October 15		October 15	November 11	January 15				
Age on First Day	15.5 months		13.5 months	~12.5 months	13 months	13.675 months		12-15 months	
First Day on 3	October 28	October 15	January 20	February 24	February 24				
Age on First Day	16 months	14 months	16.5 months	~16 months	14 months	15.3 months		12-15 months	
First Day on 4			February 17						
Age on First Day			17.5 months			17.5 months		15 months old	
First Day on 5	February 5	January 27	February 24	March 31					
Age on First Day	19 months	17.5 months	18 months	17 months		17.875 months		~18 months	

K	L	M	N	O	P	Q	R
Milestone							
Responds to Name							
Displays stranger anxiety, prefers caregivers and familiar objects, imitates actions of adults							
Engages in parallel play with classmates and enjoys waving, saying hi, games like Hide and Seek, Peekaboo							
Shows empathy and imitation during pretend play: for example, puts stuffed animals to sleep, tries to feed them							
Continues to engage in parallel play, but starts to show curiosity in other children. Displays several emotions (fear, protest, happiness)							

Both Participants 4 and 5 responded to their names slightly before they were expected to: it was a 12-month milestone, and they were 11.5 and 10 months old, respectively. Of the four toddlers in the group who reached Level 2, three were in the expected age range: Participant 3 (who was 13.5 months old), Participant 4 (who was about 12.5 months old), and Participant 5 (who was 13 months old), though the younger two participants were towards the beginning of the age bracket. Participant 1 started on Level 2 at the beginning of the study when they were 15.5 months old, meaning that they could have reached it before observations started.

All 5 participants reached Level 3 at some point throughout the study, although most students reached this level at an older age than was expected; Participants 1 and 4 were about 16 months old, and Participant 3 was 16.5 months old when they started engaging in parallel play with their classmates, which could be because it is quite a step up from the previous level, which simply involved displaying stranger anxiety. Participants 2 and 5, however, reached Level 3 when they were 14 months old, which is within the expected age bracket (curiously, they were the only male participants in the study). Participant 3 was the only toddler not to skip over Level 4, although they were a couple of months over the rubric's age range for this milestone. Of the four participants who made it to Level 5, Participants 2-4 were in the expected age range for this milestone, while Participant 1 was just a little bit older than expected when she started engaging in parallel play and displaying several emotions.

Linguistic Development

	A	B	C	D	E	F	G	H
1	Linguistic	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Average Age on First Day	
2	First Day on 1			October 15	October 15	October 15		
3	Age on First Day			13.5 months	11.5 months	~10 months	11.66667 months	
4	First Day on 2	October 15/20	October 15	November 5	January 15	March 31		
5	Age on First Day	15.5 months	14 months	13.5 months	14.5 months	15 months	14.333333 months	
6	First Day on 3	November 11	October 28		February 17			
7	Age on First Day	~16.5 months	14.5 months		15.5 months		15.5 months	
8	First Day on 4	February 24	February 24	March 31	February 24			
9	Age on First Day	20 months	18.5 months	19 months	15.5 months		18.25 months	
10	First Day on 5	March 5	March 5		March 10			
11	Age on First Day	20 months	18.5 months		16 months		18.166667 months	

I	J	K	L	M	N	
Expected Age to Hit Milestone						
12-13 months (Speaks simple repetitive syllables, babbles.)						
14-15 months (Points and gestures, creates own words for everyday objects (for example, wa-wa for water))						
14-17 months old (Answers yes/no questions (speaks 1-2 words), understand words.)						
14-17 months (Speaks five distinct words and follows one step commands.)						
18 months (Speaks ten distinct words. Points out objects and body parts.)						

In terms of linguistic development, Participant 1 started the year pointing and gesturing, as a fifteen-month-old would be expected to do. They moved up to the next level when they were 16.5 months old, answering simple yes and no questions and understanding words for everyday objects, reaching the milestone towards the end of the expected age. Participant 1 was a little bit late to Levels 4 and 5, reaching them when they were 20 months old. Still, they were very talkative and social throughout the study and consistently pointed out their clothing and their classmates to me upon request by March.

Participant 2 started the year pointing and gesturing at fourteen months old and moved up to answering yes and no questions just two weeks later. They were a little bit slower to reach Level 4, as they were 18.5 months old at the time, but quickly moved up to join Participant 1 on Level 5 before the study ended. Participant 2 was adept at gesturing and was receptive to messages others were communicating to him.

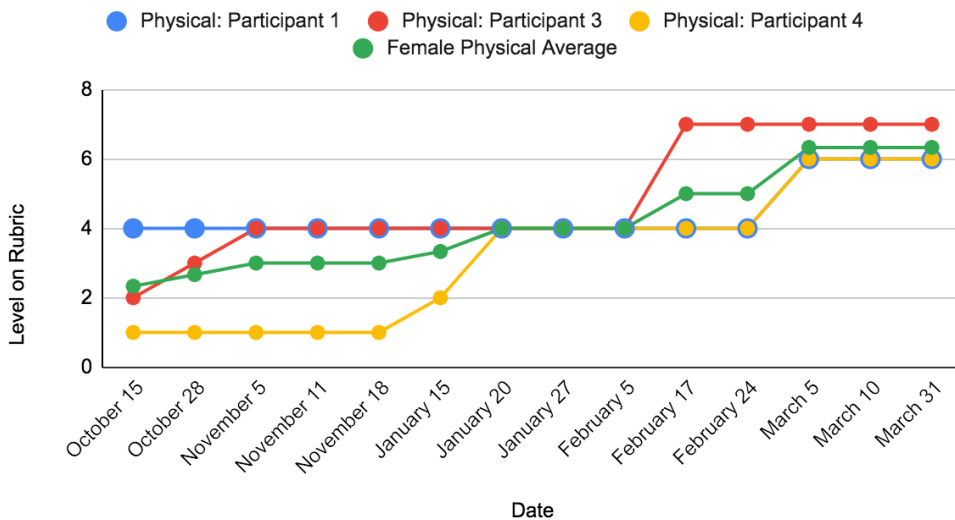
Participant 3 started out speaking in repetitive syllables and babbling. They were a bit early to reach the next milestone, pointing and gesturing when they were just 13.5 months old. Participant 3 was 19 months old when she reached Level 4 and was a little over the expected age for this milestone, just like the first two participants.

Participant 4 started the study when they were 11.5 months old. They moved up to Level 2 when they were 14.5 months old, which was in the predicted range for this milestone. The three older classmates were also in the predicted range for Level 2. However, Participant 4 was the only student not to be late to Level 4, and they arrived at the milestone at 15.5 months old, in the expected range. Their quick development streak continued as they reached Level 5 at just 16 months old, two months before the expected age for this milestone. Participant 4 was quite a bit younger than how old Participants 1 and 2 were when they met the same milestones.

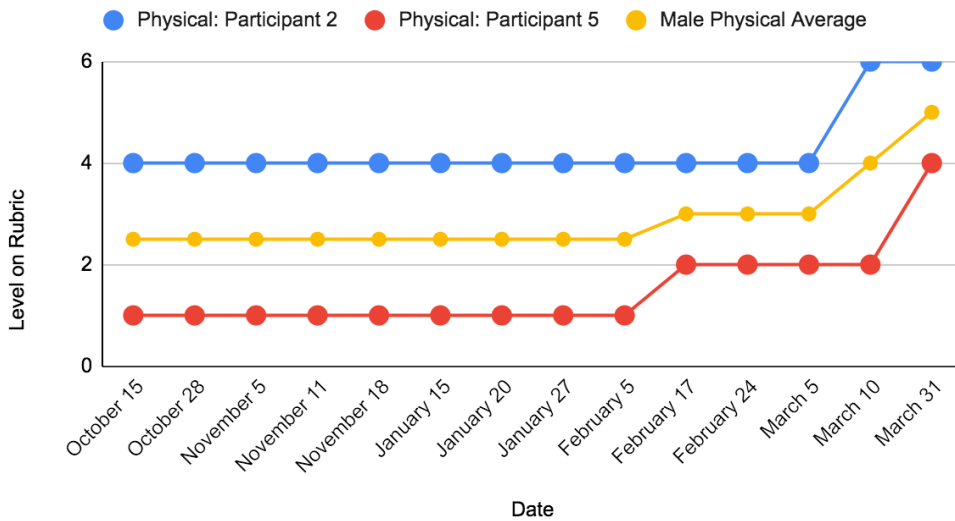
Participant 5 started the year speaking repetitive syllables and babbling. By the end of the study, when they were 15 months old, they had moved up to Level 2 as they pointed, gestured, and said simple words. They reached this level within the expected age bracket (14-15 months old) for this milestone.

Graphs of Development Based on Sex
Physical Development: Male vs. Female

Female Physical Development: Individual and Average



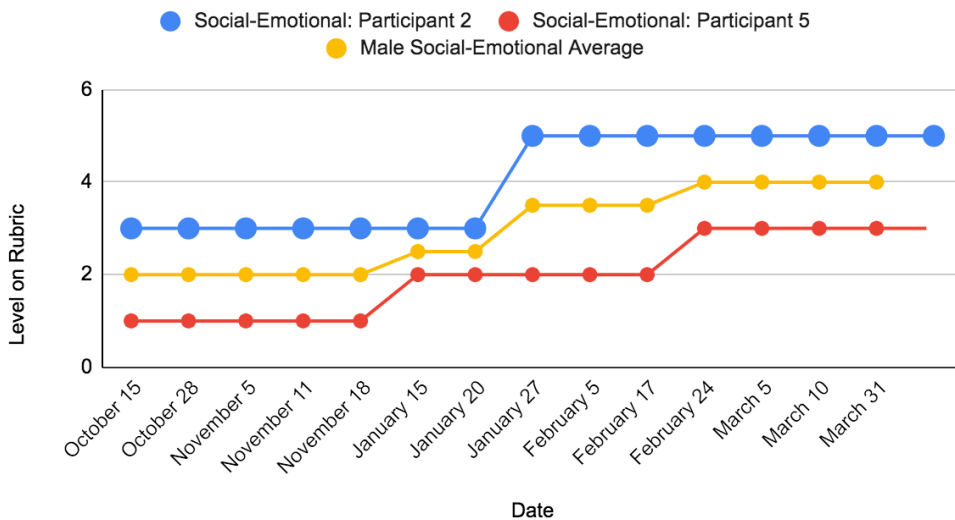
Male Physical Development: Individual and Average



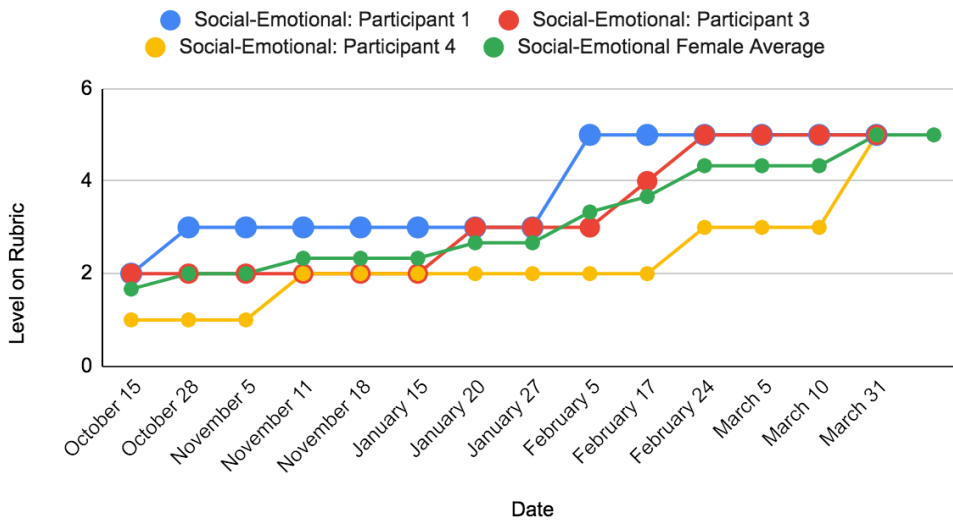
At the beginning of the study, the male average physical score was higher than the female one, but by November, as Participant 3's scores began to move up, the female average score overtook the male average score. The female average score was 6 and 1/3 by March 31, as all of the females had reached levels of 6 or 7 by the end of the study. As for the male average score, it began to move up in February as Participant 5 began to move up levels, and it reached 5 by the end of the study.

Social-Emotional Development: Male vs. Female

Male Social-Emotional Development: Individual and Average



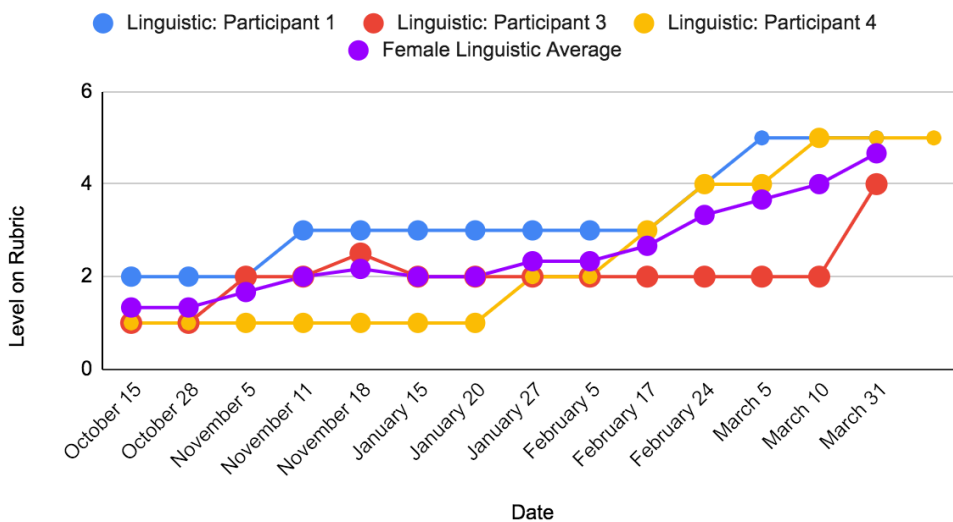
Female Social-Emotional Development: Individual and Average



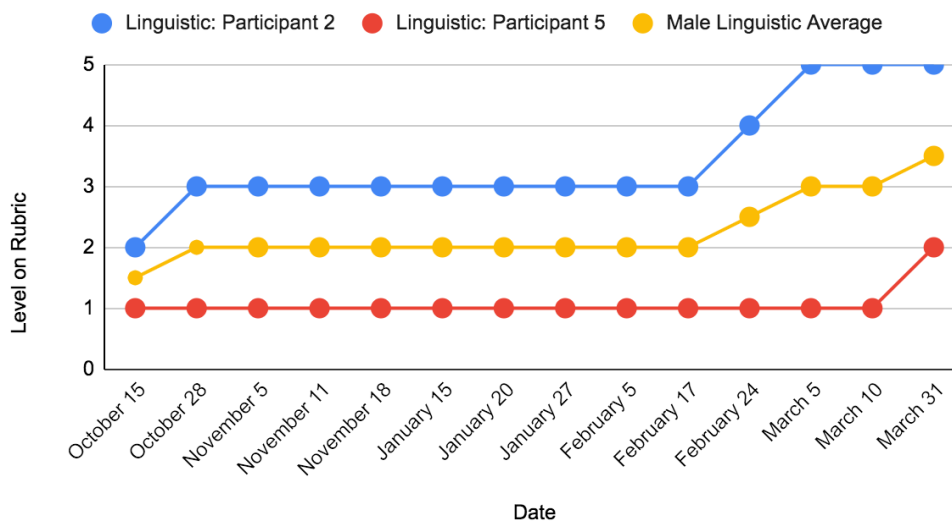
At the start of the observation period, the female social-emotional average score was slightly below the male one, but it was equal by the next week. In mid-November, the female average overtook the male average as Participant 1 moved to Level 3. The averages were similar throughout most of January since Participant 5 moved up to Level 2, however, the female average pulled ahead once again in early February, and all female participants were on Level 5 by the end of the study. The male average score also rose (though not as much as the female average did) throughout February and March, growing from 3.5 to 4.

Linguistic Development: Male vs. Female

Female Linguistic Development: Individual and Average



Male Linguistic Development: Individual and Average



The female linguistic average started out below the male one, but by mid-November, they were equal. As Participant 3's linguistic score rose, the female average increased once again. Throughout the spring, the female average rose steadily, overtaking the male average.

Conclusions

It was exciting to see the toddlers grow and change over time. The study demonstrates that toddler development is nuanced, and it is not as discrete as levels on a rubric. Throughout the study, it was interesting to note variations in how individual toddlers moved up at different rates on the three rubrics, as well as how differently the toddlers moved up on the same rubric. However, although there was a great deal of deviation in terms of how the toddlers met their benchmarks, they all hit the expected milestones in (or very close to) the expected age bracket: for example, while Participant 1 was 16 months old when they first started engaging in parallel play and playing simple games with classmates, Participant 5 reached this milestone at 14 months old. However, both children acquired the skill in or very close to the expected age bracket, demonstrating how much variation exists in the normal development ranges. Development is nuanced, and, if studied more extensively, interesting details and differences in how toddlers reaching milestones would continue to be noted.

Rubrics give a broad idea of how the toddler is developing in relation to his or her classmates and published guidelines, and studying their development over time can lead to interesting conclusions about their personal characteristics and patterns in their development. A longer study with more participants can lead to broader insights into how most toddlers develop, grow, and thrive and how varied their development is.

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