

“Driving the train”:

Martin leading his own learning in K1

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pedagogy of play



**International
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Driving the Train: Martin Leading his own Learning in K1

This is a story about teaching and learning in K1, the youngest class at ISB. Thanks to a teaching team of playful and thoughtful educators, the children in K1 are in the driver's seat, literally and figuratively, as they navigate a learning environment filled with wonder, delight, and choice.

Four-year-old Martin¹, a member of the K1 (preschool) class, is our protagonist in this story. He may be one of the smallest people in a large school serving children age 3-16, but spending a school day with Martin, he shines with joy, confidence, and curiosity, leading his own learning. From Ruth, one of the K1 teachers, you will hear about the intentionality and learning goals behind Martin's playful learning. Ruth keeps Pedagogy of Play (PoP) practices in mind as she plans for and implements the daily curriculum. Throughout Martin's day, you will see him and other children playing with an educational purpose as they lead their own learning; experience choice, wonder, and delight; and feel a sense of trust as they find opportunities for negotiation with their teachers.

¹ When referring to children, pseudonyms are assigned throughout this paper

To keep you anchored throughout, here is an overview of the daily schedule in the K1 class:

Daily Schedule in K1

8:00-9:00 Unit of Inquiry Morning Activities

9:00-9:20 Circle Time

9:20-9:45 Snack

9:45-10:00 Library

10:00-10:45 Outside Play

10:45-11:15 Lunch

11:15-12:30 Outside Play

12:30-13:30 Quiet Time/Music Special Activity

13:30-14:00 Afternoon Snack

14:00-17:00 Afterschool Club

Meet the Players

Martin's teachers, Ruth (lead teacher) and Tove (assistant teacher), teach a class of 18 3-4 year olds. The children come from across the globe and speak many different languages at home, including Danish, English, Spanish, Bulgarian, Hindi, and Malay, with Danish being the most common language spoken in addition to English. This is Ruth's second year teaching Martin. She describes him as a joyful child who has grown a lot during his time in K1. "He has grown in confidence a lot. He was on the border of being moved up [to the next class], and it was good for him to stay – he's had time to be one of the older ones instead of the little one."



Martin



Ruth



Tove

Ruth has been a teacher-researcher in the PoP work since the project began in 2015. She is an experienced early childhood educator from the U.K., now a Danish resident and Danish-English bilingual. She integrates PoP ideas throughout the I.B. curriculum, explaining, “I try to refine the units each year so that they are broad enough and developmentally appropriate enough that the children will be inspired by them... It’s supposed to be inquiry coming from the children’s own questions, but you’ve given them the subject. So there’s kind of a conflict there. But if you’re really smart in what units you pick and make the focus broad enough, you can go in the direction the children take it.”



Martin arrives at school

“Only Pink!”: Unit of Inquiry Explorations in K1

Martin’s father brings him to school on his way to work at 8:00. Happy to see his friend Leon and intrigued by the activities set up in the classroom, Martin says goodbye to his father and gets right to work at the light table, where Ruth has set out translucent plastic shapes and colored glasses for the children to explore as part of their current Unit of Inquiry on *Color*.

The Color unit, as all units within the IB curriculum, has a number of overarching goals, including:

- Science and Math goals:
 - Observe carefully in order to gather data
 - Make and test predictions, explore and problem solve
 - Explore conservation of number through many and varied opportunities to play with manipulatives including sorting and sharing.
- Language goals:
 - Ask questions to learn from others
 - Use language to negotiate space and resolve conflicts
- Personal, Social, and Physical Education goals:
 - Develop fine and gross motor skills
 - Engage in scaffolded opportunities to practice sharing space / resources

Notice how these goals for three-and-four-year old children are met through playful learning experiences throughout the day. This day in K1 takes place early in the unit, as Ruth and Tove are just introducing the topic. As the unit progresses, Ruth plans to explore color mixing, offer inspiration for color collage from famous artists such as Matisse and Kandinsky, and use colored play dough creations as a way to talk about how colors can evoke or express different emotions.

Ruth explains how the unit culminated the previous year, “We made an exhibition for parents for the show and tell at the end of the unit, including a science table of color mixing, prisms and lenses, a painting station where you mix your own colors to paint with, a dance station with three types of mood music and the colored dance scarves and streamers, and a gallery of the children’s art work.” Consider that the activities you will see this day in K1 are connected to a longer arc of learning, with the unit goals as a foundation for that arc.



Investigating colored glasses and prisms

Martin looks up from his investigations with the colored glasses and prisms, and notices a number of other activities available around the room. He knows he is free to move around the space as he pleases, choosing activities and materials and working with them for as long as he wants to stay.



Choice time in K1

He scans the room, seeing other children playing with Duplo blocks, exploring water and leaves covered in frost from the playground, working with playdough, and a few investigating an intriguing setup with large tubes and small “pom-pom” yarn balls in many colors. Martin’s face is a picture of delight, smiling broadly as he bounds across the room to explore the tubes and pom-pom balls.

Martin begins to experiment immediately. Laughing, he finds Lotte, and the two friends begin to cooperate, sending balls through the tube, gathering them, and sending them through again. They each take on a role in the play, working together to transport materials.

Martin and Lotte explore the balls and tubes in a variety of ways. First, they sort by color, collecting the balls in separate containers and supporting each other in the process.



Martin and Lotte playing with tubes

Lotte: Only yellow – put only yellow here.

They collect yellow balls for a while, then Martin reaches for a new container. Both appear deeply engaged in their self-initiated project.

Martin: Only pink – I only got pink. Og det er min. Det er for du. (And this is mine – these are for you) He hands some yellow balls to Lotte, then searches for more balls. I have some more!

Lotte: (gathering more balls) Here, more pink!

Martin puts the pink balls in his bowl, then calls to Lotte again.

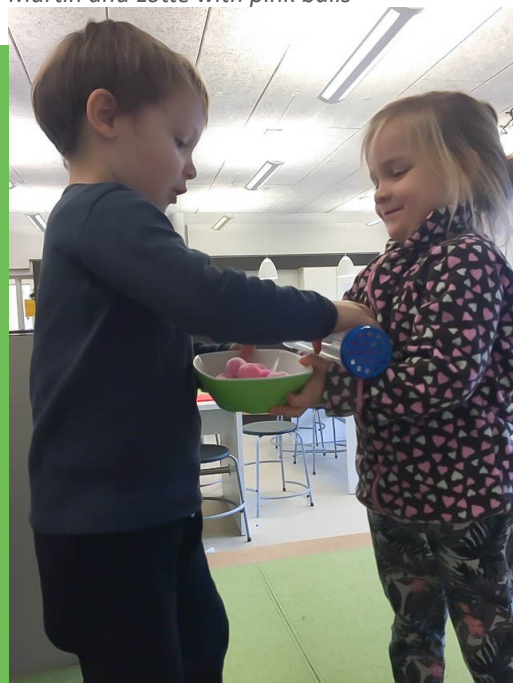
Martin: You need to help me – we need all the yellow.

Lotte: (handing Martin some yellow balls) Her! (Here!)

Satisfied with the sorting work they have done, Lotte moves on to play in another area of the room, but Martin continues, now mixing the three colors together in a large basket, and using one of the plastic tubes to stir them together.

Notice how Martin and Lotte are leading their own learning – using the materials freely and designing their own color-sorting activity? The fact that this aligns with a unit goal is no accident; Ruth has intentionally prepared the environment, setting the stage with open-ended materials that invite children to experiment, explore, and engage with each other in their own play narratives. Wanting to provoke experimentation with color as an entry point at the beginning of the color unit, she has stocked the area with different colored balls, ready for the children to sort, mix, and explore.

Martin and Lotte with pink balls



When Martin and his peers have been engaged with the balls and tubes for nearly a full hour, Ruth and Tove provide a 5-minute warning, then let children know it's time to clean up. After putting some of the colored balls back in a large basket, Martin joins his group, the "Blue Fish," and follows Ruth down a short hallway to a separate classroom for Circle Time.



Balls and tubes continued

Today, Ruth has planned a number of activities for children to explore concepts within their Color unit. She explains, "I'm looking for opportunities for the children to use the activities in the way they choose to use them. So there's not a fixed outcome. And they have some novelty value, or something that the children will really enjoy that makes them engaged." Notice how Ruth considers novelty (an aspect of "wonder") and offers the children choice among activities. She is thinking about creating opportunities for playful learning. Children choose freely among the activities provided, and also have a wide range of choices in how they use the flexible materials and spaces. Ruth also shares that the task of "transporting and posting" that the children engaged in with the balls and tubes is a key interest of the children in her group, and she has planned this particular activity with that interest in mind. Furthermore, the activity meets several K1 learning goals – such as the math goal to "Explore conservation of number through many and varied opportunities to play with manipulatives including sorting and sharing," and the language goal to, "use language to negotiate sharing space and resources and resolve conflicts." Martin and Lotte were exploring the science concept of conservation as they noticed the balls were still balls after going through the tubes; and they used oral language with each other to negotiate the sorting of the balls by color – "Only pink!"

“Do we need any more bears?”: Circle Time

After playfully tackling a friend as they find a colored spot to sit on at circle, Martin joins his small group of 9 children for a teacher-led circle time. Tove is concurrently leading a similar circle time with her group of “Red Fish” back in the main classroom. Circle time today begins with surprise – Ruth has brought along a bag full of purple teddy bears and each child gets to hold a bear during circle. The children smile and hug their bears as they are passed around the circle and they also count the bears and children, with Ruth’s prompts of “Do we need any more bears? How many more do we need?”. Next is a name song – Ruth showing the children cards of their printed names, as the children eagerly call out to identify their own and their friends names and alphabet letters. Circle time continues with a few more songs and a non-fiction read aloud story.



K1 Circle time

Talking later about the planning behind these circle time activities, Ruth explains, “The way I see it, in K1 children should be exposed to and introduced to literacy – like through the letters of their names – and that again is taken from the children’s interests. Because they are interested in their names. They love their first letter of their name, and beginning to know their friends’ names or the names of people in their families; those are important to them. Or... if there’s something they are interested in writing, we would support them with that. And we try to read stories and sing with them every day. I think that encouraging their interest in and love for literacy is my most important job with literacy at this age. And time to talk!”



Circle time continued

Children Driving the Train: A Visit to the Library

As circle time ends, it's time for a morning snack of fresh fruits and vegetables, provided by the school. As they finish, Ruth provides some clear instructions of what to do next, "When you've finished and drunk all your water, you can put your cup here and line up. We're going to make a train so we can go to the library." Clearly not the first time the train has left the station, the children know just what to do. They line up quickly, and head off to their first stop: the bathroom, equipped with child-sized sinks and toilets. Martin makes some silly faces at himself in the mirror as he independently washes his hands and face.



Hand washing

The children finish up and wait for a moment for the rest of the group. Then, notably, the train takes off ahead of the teacher – confident in its' direction and moving purposefully down the hall. Ruth steps to the side to allow them to pass, smiling at their self-direction.

This children-in-front movement through the school (it happens again later on the way to lunch) seems almost a metaphor for the children leading their own learning and the trust that exists between teachers and children in this school. The distance from the bathroom to the library isn't extensive, but for the children, the walk to a different part of a big school is an adventure. The fact that Ruth steps aside to allow the children to lead themselves is symbolic of her trust in three-and-four-year-old children and their ability to self-direct.



Driving the train to the library

Library time, a weekly event for the K1 children, is a brief and peaceful affair. Martin and his group choose their own books and a librarian helps to check them out to take home. Almost immediately, Martin selects a large picture book about dinosaurs, announcing to all who can hear, “I found this one! I have a dinosaur book!”

After checking out his book with the school librarian, Martin heads over to show it to Leon, “I have a dinosaur book – raaarrrr!” he tells Leon, then peeks over at Andrew’s selection; dinosaurs appear a popular theme with the group.

Books in hand, Martin heads down the hall to the coatroom where he dresses himself to go outside. He sits down to slide into his snowsuit, zips his zipper, and spends a while working the fingers of his gloves out of their inverted state. Ruth is at the ready to support if a child gets stuck, but most children navigate their extensive outerwear (appropriate for the Danish November wet and cold weather) without asking for any support.



Martin gets dressed for outdoor play



Dinosaur book at the library

Outside Play: Unexpected Ice

Outside, it's a beautiful frosty morning in Billund. It's nearly 10am, and the sun is just peeking over the roof of the school.



The ISB playground

Martin runs to the shed where the bicycles are kept. He is not alone – the bike shed is a treasure trove of different ride-on and push options, and many children are eager to ride and drive. Several of the bikes are built for two or more children, designed for one to pedal, another to sit, one more to push. Martin smiles as he pedals this particular contraption, which the children call a “moon car,” around the play yard.



Riding the “Moon car”

Ruth and Martin outside



The children stay outside until lunch, teachers moving around the playground to talk with the children, ask questions, and occasionally assist with a wet mitten or misplaced hat. Ruth gravitates towards the sand area, where a group of K1 children are exploring the properties of ice and water, a gift of the frosty and seasonably cold weather. Martin parks his moon car and joins her to observe the operation.

“Look – I got ice in this!” Andrew exclaims, holding his yellow bucket for the others to see. The gathering of ice becomes a group effort, with several other children (especially Leon) contributing ice chunks they have broken off of the large chunk frozen in the water trough. When the time comes to head inside, Andrew and Leon are reluctant to leave the collected ice outside, and Ruth invites them to bring the bucket inside for an experiment, asking them, “What do you think will happen?” Leon replies, “It’s going to turn black,” an interesting hypothesis that Ruth invites him to test after lunch. The group heads off to wash hands again and walks to the school cafeteria for lunchtime.



Collecting ice

The novelty of the natural world is clearly stimulating wonder and delight among the children. Thanks to Ruth's flexibility in inviting the children to lead their own learning, the children are able to launch a spontaneous experiment that goes beyond the planned curriculum. There is trust and negotiation at play here as well; negotiation of the plans for the day, and mutual trust – from the children, trust that their ideas will be honored, and from Ruth, a trust in the children to take their experimenting seriously. As Ruth explains later, "I would try to always follow children's spontaneous ideas if I can. You can't pass up an opportunity like the fact that it's the first icy day of the year. It's too special. So linking a scientific experience, and the natural world, and the novelty part of it is there, and all the sensory aspects... and teaching children to or encouraging them to enjoy the natural world is nourishing for their spiritual souls, I think – it gives them *livsglæde* (joy about life). I see that as being part of our job as well." And of course, this is a perfect opportunity for a child-directed way to meet one of the key IB unit goals: the science goal of making and testing predictions.



Bringing the ice inside

Family-Style: Lunch Together

Lunch is a family-style affair. Martin holds hands with Della on the way to the large cafeteria, where the youngest children of the school dine together at long tables set with colorful plates, real silverware, and the special of the day: meat, potatoes, sauce, and a salad. Martin helps himself to some meat and with a gentle prompt from one of the teachers, passes to Lotte who is seated beside him.



Children serving themselves at lunch

Twenty minutes later, the children are finishing up their meal, scraping any uneaten food into a compost bin, and placing their used dishes, utensils and glasses on carts standing nearby. Then hand-in-hand, Martin and Yana head back to the coatroom – once again free to walk in front of the teacher who is supervising their group.



Walking back from lunch

Notice how independent the children are during this lunch time. These three-and-four-year-old children are serving themselves, using real silverware to cut their meat, and taking responsibility for clearing their own places at the end of the meal. The trust placed in children, and an image of the children as capable and competent, rings clearly here, consistent with the playful learning practice of fostering trust.

“It’s Cold!”: Continuing the Ice Exploration Inside and Outside

On the way back outside, Ruth and the children stop in the classroom to check on their ice experiment. As the children gather to see the ice, the following dialogue takes place:



Experimenting with ice

Ruth holds up a tube – Leon had placed some of his ice inside before lunch. “Let’s have a look what’s happening! I can see- there’s some water in there. Leon put some water in there to see what would happen.”

The children lean in closer, some exclaim that they see the ice.

Ruth asks, “Can you feel how cold that water’s got?”

Martin thrusts his hand into the icy water and shudders- a surprised expression on his face.

“It’s cold!” he exclaims. Ruth smiles back at his discovery.

Leon leans in, “Can we try it with different colors?”

Ruth considers this, knowing that there isn’t time for such an involved investigation right now, yet wanting to honor Leon’ idea. “Yes, another day we can.” She continues with a feasible suggestion and a question to the group. “If we come back at the end of quiet time, do you think it will still be here, the ice?”

Martin looks unsure, but Jaynathi predicts “It will melt!”

Ruth nods and considers a connection to the children’s past experiences.

“Did you ever have a drink with ice in it?”

Martin exclaims, “Yeah- me!”

“I too- I too,” adds Jaynathi.



The ice experiment continues

Martin, getting more curious or perhaps making a connection with the idea of a drink, sticks his hand into the water again and starts to lick the water off, exploring with all his senses.

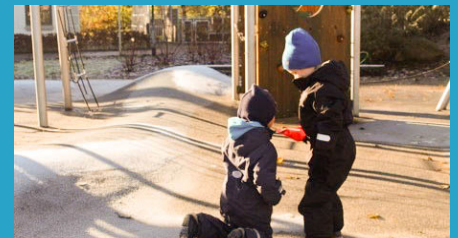
Ruth smiles at his sensory investigation, stops him from putting the water in his mouth, “Oh, no- that water is a bit muddy from the playground. Alright - should we go get ready to go outside? maybe we can see if we can collect some more ice!”

Eagerly, Martin heads to his cubby again, dresses himself once again in overall, boots, hat, and mittens and heads back outside to the playground. Clearly inspired by the ice experiment and Ruth’s invitation, Martin immediately begins looking for ice on the playground. He finds a shovel to chip away and collect some ice in a puddle, then brings the ice to Helena, a teacher from another class. “Jeg fandt is herinde (I found the ice in here),” he explains, showing her the puddle. “Jeg vil have mere is. (I need more ice).” With Helena’s help, Martin gets a bucket to collect his ice, and continues to gather ice chunks, sometimes on his own, at times with other children, for the duration of outside time.

You may have noticed that Martin and his peers use both Danish and English in this play. ISB is an international school, and English is the primary language of instruction. In addition, in the kindergarten classes, teachers and children are welcome to use their home languages as they are able and as appropriate to the child and situation. Tove, one of Martin’s teachers, explains, “It’s about their needs when they come here. It’s ok to speak Danish, English – I even use my French or Dutch if a child needs that. It depends on the child – I’m going to do what I can to make them happy here.”



Martin gathers more ice



Music

After a half-hour of quiet time relaxing on mats and listening to classical music, Martin heads off to music class with a small group of children from his class. This is an optional session, provided weekly at the school by a local music teacher from the Billund community, and Martin's parents have chosen to have him participate. Children play instruments, sing, and dance for the duration of the 45-minute session, then return back to the classroom for an afternoon snack.



Exploring instruments during music class

Goodbye

It is 2pm, which marks the end of the official school day and the start of After School Club. Some days, Martin stays longer and plays in the school's After School Club, which includes another chance to play outside for an hour, followed by child-chosen indoor activities. On these days, Martin's favorite place to play is in the Slide Room, which features an indoor slide, climbing ropes, and other gross-motor play materials.

At ISB, parents pick up their children any time between 14:00-16:00. Today, Martin's mother has a short work day, and she arrives as Martin is finishing up his afternoon snack of fruit and bread. She joins Martin at the snack table, chatting with Signe, one of the After School Club teachers. A few minutes later, Martin and his mother head for the door, grabbing his bicycle helmet on the way out the door for their ride home.



Playing in the slide room



Martin and his mother saying goodbye

Driving the Train: Closing Thoughts

Martin and his peers were quite clearly in the driver's seat throughout this day at ISB. From the moment he arrived at school in the morning, Martin had opportunities to lead his own learning. He chose his own activities during morning Unit of Inquiry time, deciding which materials to use, how to manipulate them, who to play with, and how long to stay engaged in that activity with the balls and tubes before moving on. This choice and self-direction is not accidental; Ruth had carefully prepared the classroom environment and set up the daily schedule to invite children to both lead their own learning and to experience choice, wonder, and delight through the novel materials and playful interactions with peers. This was not free play, but rather play with an educational purpose, connected to the interdisciplinary K1 learning goals of the IB unit on Color.

Of course, some of the moments of learning in Martin's day were spontaneous rather than planned. The experience finding ice on the playground was spontaneous and unexpected, and Ruth was ready to support this child-initiated experiment, trusting that the children would take their exploration in a purposeful direction. And when the train took off ahead of the conductor on the way to the library, Ruth stepped aside to allow them to pass, confident in the children's capability to lead themselves and willing to allow that moment to unfold. Throughout this day in K1, Ruth's playful, experimental, and respectful teaching set the stage for Martin to thrive, developing a strong sense of well-being, happiness, and eagerness to learn in school.

This picture of practice is a product of the Pedagogy of Play (PoP) project, a participatory research collaboration between the International School of Billund and Project Zero at the Harvard Graduate School of Education. PoP is carried out with support and collaborative input from the LEGO Foundation, and seeks to investigate the relationship between play and learning in a school context.

To learn more about ISB, please visit www.isbillund.com

To learn more about PoP and Project Zero, please visit <http://www.pz.harvard.edu/projects/pedagogy-of-play>

To learn more about LEGO Foundation initiatives, please visit www.legofoundation.com