

Heatherton Girls' School

A Kide Science Case Study

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Background

This case study presents a unique partnership between Kide Science and Heatherton Girls' School, a progressive, science-focused institution within the historic Berkhamsted School Group. Berkhamsted School, established in 1541, has a long-standing dedication to research, reflected in its school-wide research initiatives and publications. Heatherton Girls' School builds upon this by prioritizing innovative, research-based teaching within a caring environment.

Seeking age-appropriate STEM methods for young children, Heatherton Girls' School discovered Kide's playful inquiry lesson plans in 2023. It was immediately evident that our educational philosophies and methods were closely aligned, so Heatherton became both a customer and a research partner with Kide Science. This unique partnership, involving the University of Helsinki, Heatherton, and Kide Science, blended theory with practice. Heatherton implemented Kide Science lessons across various age groups and joined our research with their 4-5-year-old Reception class. Building upon Kide Science founder Dr. Jenni Vartiainen's prior work, our research collaboration explored how Kide Science's play-based inquiry fostered children's science process skills, with a focus on observation and classification.

We are continuing to analyze the full data set for scientific publications. In the meantime, this case study shows some exciting preliminary results and, together with the results in our white paper on teacher confidence, it provides valuable insights into Kide's positive effects.

This case study focuses on the practical application of Kide lessons, offering teachers concrete examples and good practice ideas for their own classrooms.

Creative solutions for play-based learning activities.



Play and imagination have a central role in the Kide pedagogy. Scientific investigations unfold within the fantasy world of Supraland, where Hoseli the Robot's troubles spark scientific exploration, making children's learning both meaningful and purposeful. Teachers at Heatherton were remarkably proactive and creative in finding ways to make use of these playful elements both in their teaching and other daily activities.

Each Kide Science lesson begins with a story presenting a problem to be investigated. To bring this to life, Heatherton teachers created the

'Curiosity Cube,' a designated space with a box, printed 3D-Hoseli, and other printed Supraland characters where letters from Supraland arrived each week. Children were deeply engaged in the fantasy world, excited and curious about the new letters and problems each week. For them, Kide Science wasn't just science lessons, but a chance to investigate and solve fun problems in the imaginary world of Supraland.

As with the rest of the lesson, imaginative play is a crucial element of this ending ceremony. Yet again, Heatherton teachers added their own creative touch to this - they used an old phone to call Supraland! Kide lessons conclude with a suggested circle time, where students are invited to share their discoveries with the story character Hoseli. This promotes reflection, celebration, and allows teachers to assess the learning. By adding this dramatic element, it proved to be very engaging for children who were eager to explain their discoveries to Hoseli over the phone. It was a method that made even the less verbal children happy to share their observations.



A holistic approach to STEM education

Heatherton teachers have adapted Kide resources very flexibly into their existing routines.

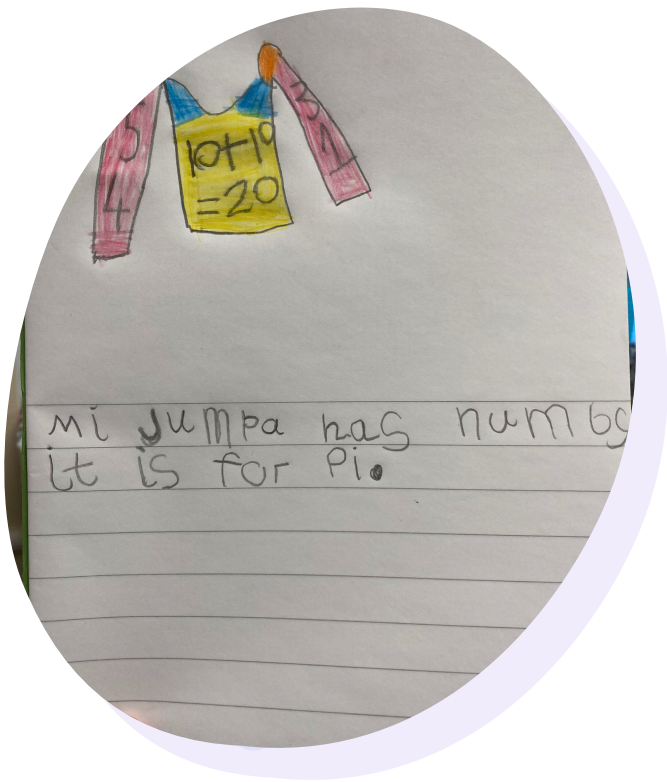
They leveraged Kide's lesson themes and bundles to help plan and employ a cross-curricular approach, seamlessly integrating STEM concepts with objectives from other subjects like math and literacy.

Using platform features, Heatherton teachers chose four or five Kide lessons, themed around topics such as weather, dinosaurs, or magnets. One of these lessons then acted as the main STEM activity per week.

To suit their children, Heatherton used some of the Kide activities as teacher-led activities, and some acted as child-initiated, free activities for the children to investigate by choice. It was often these undirected activities where children really showed ownership of their work and were highly engaged in their discoveries, especially after the initial inspiration came from the Supraland story problem.



Teachers also utilized Kide characters to introduce challenges from other subjects, such as mathematics, and even incorporated them into art activities, like drawing imaginative solutions for solving the characters' problems. Teachers seamlessly weaved the fantasy context throughout their curriculum, fostering student engagement while simultaneously addressing multiple curriculum goals.



To support children's inquiry-learning beyond Kide lessons, teachers displayed children's creations from each lesson, so they could come back to them during the week and continue working on them.



They also set up designated 'enhancement zones' where they placed materials and objects related to the lesson or topic of the week, for example, magnetic toys when talking about magnets, or different bits and pieces of material for practicing classification. Children could freely go to these zones during the week to continue their play and discovery.



Assessment

For the research study, teachers tracked student progress specifically in the skills of classification and observation, using specially prepared weekly diaries and observation grids.

However, for day-to-day use, the Kide teacher platform also provides a range of assessment tools for teachers, including grids for all science processing skills and holistic assessment guidelines for early years. Teachers reported that Kide's assessment materials not only aided in tracking student progress but also served as a valuable professional development resource, guiding their attention to various aspects and stages of science processing skill development. Additionally, teachers found Kide's assessments easily transferable to their official school assessment systems.

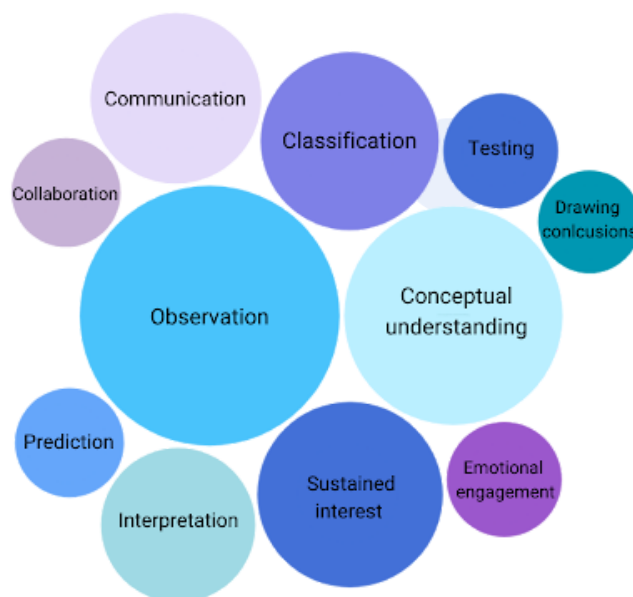
Apart from these assessment methods, teachers also used large books to document learning. Here, they have noted examples of children's learning and discoveries over the weeks, enhanced with quotes and pictures showing their solutions and crafts. These books were also displayed in the classroom, and children were free to go and look through them at any time, which also sparked further discussion on the topic after each lesson.



Learning Impact - general

Although the main research goal was to study how Kide lessons improved students' science processing skills, we actually saw a more overarching impact of Kide at Heatherton during this time. Kide lessons had a positive impact on students' interest, motivation, and created a joyful learning environment. They also encouraged students to work together, solve problems, and think creatively.

The image below shows how often different skills were observed in teachers' weekly journals. Larger bubbles indicate skills seen more frequently. As expected, observation, classification, and an understanding of science concepts were common. Remarkably, we also saw many examples of sustained interest and emotional engagement, which are vital for future science learning. Collaborative problem-solving was also frequently observed, demonstrating Kide's broader impact on students' learning and development.

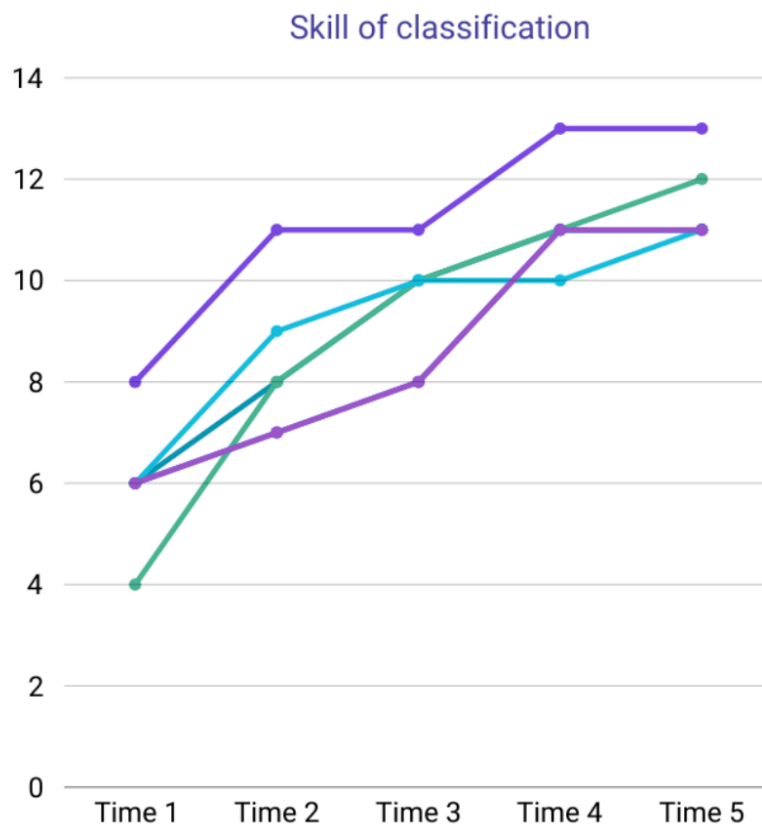


Learning Impact - Skills

We strongly believe that Kide lessons can benefit all students equally, as the story-based, playful features can also engage students who might otherwise struggle. The graph below shows the progress showing that a higher performer gains the most, it's also clear that everyone developed during this time. Even the student with the lowest initial scores demonstrated substantial, steady progress, proving Kide's effectiveness across all learning levels.

While students developed their science processing skills, they also improved their scientific language, using words like "classify" and "investigate," and showed increased interest in science, seeing themselves as scientists.

This data offers only a glimpse into Kide's learning impact. We are currently analyzing all data from our research collaboration, which will be published in scientific journals soon. For a more detailed review of our impact, check our [Impact report 2024](#).



Teaching impact - confidence

Beyond student impact, Kide also impacted teachers' professional development and confidence in STEM teaching. The Kide pedagogy helped increase early years teachers' STEM confidence by promoting a playful, inquiry-driven approach, allowing them to shift from content delivery to collaborative exploration. Teachers became more prone to notice children's questions and wonderings, and more open to acting on them in an open-ended way, therefore joining children in a shared discovery throughout the whole school day.

As one teacher noted, "I was like, okay, this is what we're doing, go! And I didn't really get involved. And then they created just the most incredible structures...And I think that's one of the joys of Kide Science, that there's no right or wrong... That confidence that we are giving them is what's needed."

Conclusions & future steps

We would like to express our deepest gratitude to the wonderful teachers and educators at Heatherton for this unique collaboration. Specifically, we would like to thank the class teacher who participated in our research study. Her never-ending energy and creativity in implementing the Kide method, and her exceptional ability to integrate the Kide fantasy context into daily routines at Heatherton, are truly impressive.

Our research collaboration provided a unique opportunity to explore Kide's impact in real-life settings. This allowed us to simultaneously create outcomes that align with UK-based national curriculum goals and support schools in demonstrating measurable progress in early years science.

We continue our good collaboration with Heatherton School. They have now started to use Kide lesson plans in Years 1 and 2 as their main science curriculum. You can read more about how they adapt Kide Science to fit the needs of older students in our blog post, coming soon.