

EARLY LEARNING PROJECT



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WHAT IS THE EARLY LEARNING PROJECT?

The Early Learning Project (ELP) investigates how children's interactions with peers and teachers in preschool classrooms foster their academic skills, social competence, and emotional awareness.

The first wave of data collection took place in Winter 2023, involving 68 children and their caregivers, and 11 teachers across 25 classrooms from four preschool centers.

In Spring 2024, we followed up with more than half of the children from the first wave to further examine their development of academic skills and socio-emotional competencies.

This newsletter describes some findings from the first wave of our study on children's early academic skills, connections to self-regulation, and strategies for promoting these abilities.

By: Dr. Wendy Hoglund, Justin Evans, Isabella Schoettler, Cheryl Pan & the PEERS Lab Team.

EARLY ACADEMIC SKILLS IN CHILDHOOD

WHAT ARE EARLY ACADEMIC SKILLS?

Academic skills cover a wide range of abilities necessary for effectively engaging with academic content. These skills may include numbers or reading comprehension, as well as critical thinking and communication of ideas. In our research, academic skills involve children's abilities to recognize numbers, letters, and words, as well as to make comparisons and identify shapes¹.



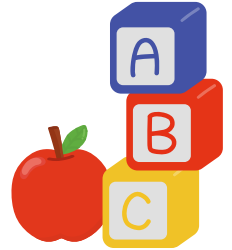
WHY ARE THESE SKILLS IMPORTANT?

Developing academic skills early on helps children use problem-solving strategies, practice counting and letter recognition, and learn more about the world around them. Children with good early academic skills also tend to be more engaged at school and have close relationships with their teachers and classmates.²



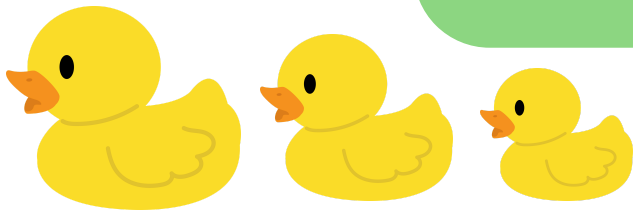
HOW DID WE ASSESS THESE SKILLS?

During our classroom visits, children completed two early academic tasks that required them to identify letters, numbers, or shapes and make comparisons between objects. These tasks help us to learn about children's early academic skills as they transition from preschool into kindergarten.

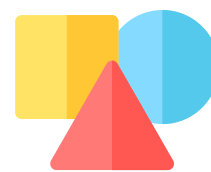


The Bracken Expressive³ (BE) assesses children's early recognition of letters, sounds, numbers, and shapes. Children were shown pictures and asked to describe what they saw. For example, children were shown a picture of two ducks and a picture of six ducks. The research assistants counted the two ducks out loud and then asked children how many ducks were in the six-duck picture. "Here are two ducks.

How many ducks are here?"



The Early Cognitive Academic Development⁴ (ECAD) task assesses children's early identification of words and counting skills. Children were asked to point to words or numbers on a page. For example, children were shown a row of words and asked to point to the word, "Mat". Children were also asked to count using their fingers. For example, children were asked to hold up two fingers.

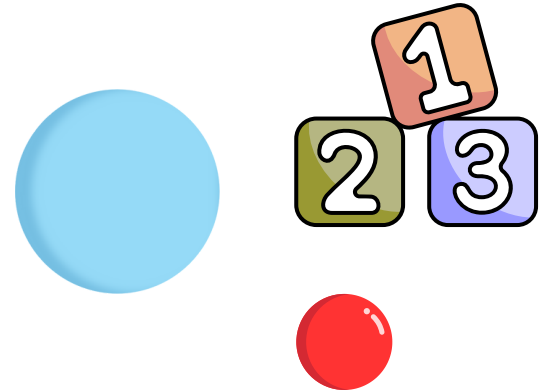


CAN YOU SHOW ME TWO FINGERS?

EARLY ACADEMIC SKILLS: YEAR 1 FINDINGS

BRACKEN EXPRESSIVE

Most children had difficulty completing the Bracken Expressive. There **were no differences between boys and girls**, and **older and younger children**.



EARLY COGNITIVE ACADEMIC DEVELOPMENT



Children also had difficulty completing the Early Cognitive Academic Development Task. There **were no differences between boys and girls**, and **older and younger children**. Children who did well on the Bracken Expressive task also did well on the ECAD task.

Starting in preschool, children are just beginning to develop their literacy and mathematical skills through learning to identify letters and numbers. By building on these foundations, children show substantial gains in their early academic skills later on in kindergarten and Grade 1 when it comes to their reading and counting abilities⁵. Encouraging children to practice their early academic skills through learning games that challenge their spelling and counting skills can help them further develop these abilities⁵.



HOW ARE CHILDREN'S EARLY ACADEMIC SKILLS RELATED TO THEIR SELF-REGULATION ABILITIES?

During our classroom visits, the children also played games that required them to use their behavioural self-regulation and emotional self-regulation abilities. Children completed the Head-Toes-Knees-Shoulders task (a game similar to Simon Says) and Emotional Stroop Task (a card game where children need to say the opposite of what is on a card shown to them) to test their behavioural self-regulation. To assess their emotional self-regulation, children watched a puppet show and suggested ideas that the puppets could do to calm down from feeling too excited, too mad and too sad.

Most children had difficulty completing these tasks, with older children performing better than younger children. This was expected as self-regulation abilities tend to develop more rapidly as children get older⁸.

We also wanted to see how children's early academic skills might be related to their self-regulation abilities. Children who use more self-regulation strategies also tend to have better academic skills and school engagement in preschool⁹.

Behavioural Self-Regulation involves skills and abilities, such as being able to remember and follow instructions, maintain focus on a task and ignore distractions, and control impulsive behaviours⁶.

Emotional Self-Regulation involves skills, and strategies that help a child to control their emotions. This may be through managing how they experience them or how they show them outwardly towards others⁷.



EARLY ACADEMIC SKILLS AND BEHAVIOURAL SELF-REGULATION



We found that children who did well on the Head-Toes-Knees-Shoulders task also did well on the Bracken Expressive. Children who did well on the Emotional Stroop Task also did well on both the Bracken Expressive and ECAD. **Children who showed good behavioural self-regulation skills also had better early academic skills.**

This is expected as children aged 4 to 5 years who show good self-regulation skills also tend to have better early academic skills^{10 11}. It might be that having good behavioural self-regulation skills (such as being able to pay attention, listen to instructions, and adjust behaviours as needed) may help children focus better when they are learning new information¹⁰. Providing children with opportunities to use their behavioural self-regulation skills may also help them to regulate their behaviours when learning and practicing new academic skills.



EARLY ACADEMIC SKILLS AND EMOTIONAL SELF-REGULATION



We did not find any important connections between children's emotional self-regulation and early academic skills. There were also **no differences found for boys and girls**.



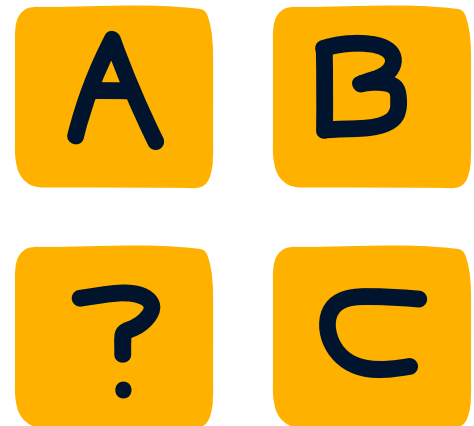
It might be that **children's emotional self-regulation skills** (such as managing emotional reactions to unexpected situations and identifying effective strategies) **may be less connected to how they learn new information and practice their academic skills¹⁰**.

Children aged 4 to 5 years have also shown stronger connections between their behavioural self-regulation and early academic skills, with fewer connections for their emotional self-regulation abilities¹⁰. Children's emotional self-regulation skills might still be important when it comes to developing other abilities related to early academic skills, such as problem-solving, creative thinking, or sharing ideas with others¹¹.

STRATEGIES FOR PROMOTING EARLY ACADEMIC SKILLS

THE ALPHABET GAME

Children will sit together around a board with magnetic alphabet letters. The teacher will begin with a prompt about classmates' names, such as, "Samuel and Sarah have the same first sound and first letter in their names. "Listen, Sssssara, Ssssssamuel. What letter do their names begin with?" After children say the name of the letter ("an S"), the teacher can choose a child to go up to the board and pick out which letter is an S and put it on the board. The teacher then recalls the letter name "S sounds sssss".



Practicing the alphabet is an important early task for children as they prepare to learn how to read¹². Children can practice identifying alphabet letters and their sounds using their names during circle time or small group activities¹³.

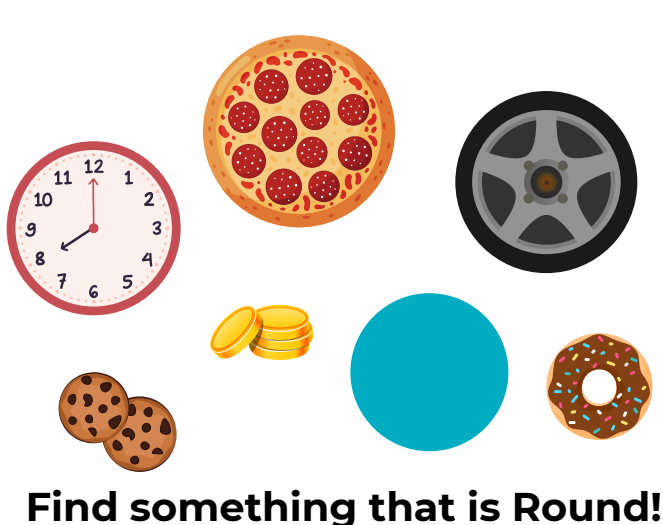


Other prompts, such as types of animals or food, could also be used (e.g. "Dogs and dolphins or bananas and blueberries have the same first sound and first letter in their name. What letter do they begin with?").

STRATEGIES FOR PROMOTING EARLY ACADEMIC SKILLS

CLASSROOM SCAVENGER HUNT

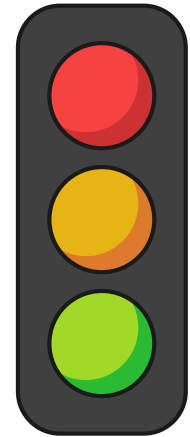
Shape and colour games can help children learn and develop their early mathematical skills¹⁴. Doing a Scavenger Hunt around the classroom is one way that children can practice identifying the colours and shapes of different objects. Before beginning the activity, the teacher will hide objects around the classroom that are certain colours or shapes. Children will line up at the entrance of the classroom. The teacher will show a picture of a shape or colour and ask the children to find an object that matches the colour or shape on the picture. For example, the teacher could show a picture of a yellow shoe and say, "Find an object that is the same colour," or could show a picture of a circle and say, "Find an object that is round."



STRATEGIES FOR BEHAVIOURAL SELF-REGULATION

RED LIGHT - GREEN LIGHT

Games that test children's abilities to shift between behaviours and complete physical actions quickly are good for improving their behavioural self-regulation¹⁵. These activities can also help in developing children's coordination and motor skills, which in turn can help them to self-regulate more easily¹⁶.



HOW TO PLAY

- Find a large space to run around in.
- Pick a child to be the Game Leader.
- The Game Leader stands on one end of the space. The children will stand on the other end.
- When the Game Leader calls out **Green Light**, the other children will run to the other side.
- When the Game Leader calls out **Red Light**, the other children will freeze and have to stand still to avoid getting caught by the Game Leader.
- When the Game Leader calls out **Yellow Light**, the other children will walk instead of run.
- The first child to make it to the other end and tag the Game Leader will then become the new Game Leader for the next round.



Green for Go!

Red for Stop

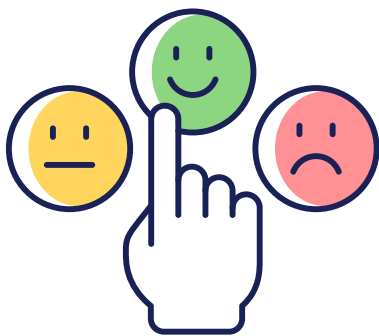
Yellow for Slow



STRATEGIES FOR EMOTIONAL SELF-REGULATION

TEACHING FEELING WORDS

Labelling emotions can help children learn more about their feelings and can give them words to use when they feel too excited or upset. Knowing more about how emotions look and feel can also help children regulate their own emotions¹⁷. Using “You” statements during an emotional moment can help children learn about their emotions. An adult can say, “You feel sad,” or “You feel angry,” to help children identify what emotions they are feeling.



You Feel...

Angry

Sad

Happy!

Nervous

Excited

Disappointed

Surprised

Children can also be shown emotion charts or cue cards with facial expressions of different emotions to learn what emotions look like on other people. Adults can ask questions such as, “Does the girl in the picture look happy or sad?”

THANK YOU!

Our project would not be possible without the involvement of the leadership team, staff, and volunteers at the participating preschools. Thank you! We are grateful to the children, caregivers and teachers for participating in our study. Our research team really enjoyed working with the children. We learned a great deal from them. Thank you for your support for our project!



ABOUT THE PEERS LAB

Dr. Wendy Hoglund and the PEERS Lab study social, emotional and academic development in childhood and adolescence. We are interested in how children's relationships with peers and teachers relate to social, emotional and academic competencies.

To learn more about our research, visit our website: <https://sites.psych.ualberta.ca/PEERSlab/>

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