

EARLY LEARNING PROJECT



TABLE OF CONTENTS

1 What is this study about?

2 Who is in this study?

3 Self-Regulation

4 Emotional Self-Regulation

8 Behavioural Regulation

12 About the PEERS Lab

By: Dr. Wendy Hoglund, Ritika Dodd, Soobin Lee & the PEERS Lab Team.

WHAT IS THE EARLY LEARNING PROJECT?

This study is examining how interactions with peers and teachers in early childhood classrooms support children's early social, emotional, and academic competencies.

Social and emotional competencies are how children relate to others, understand and express their emotions, manage emotional distress, and control behaviours.

Academic competencies are how children learn, engage with learning activities, and their academic skills.

In winter 2023, we started this study with 4 preschool centres. Our study included children, caregivers and teachers in these centres.

This newsletter describes some findings from our study on children's self-regulation and includes tips and resources for supporting children's self-regulation.

WHO IS IN THIS STUDY?

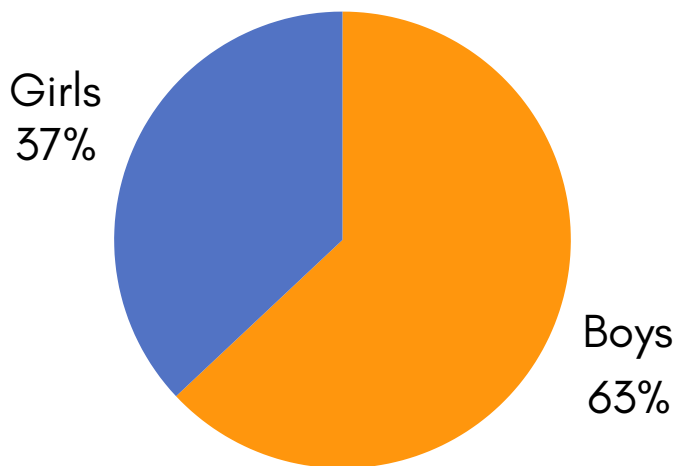


PARTICIPANTS

In total 68 children, their caregivers, and 11 teachers in 25 preschool classrooms participated in year 1 of this study. We plan to follow-up with the children in the spring of kindergarten, grade 1 and grade 2.

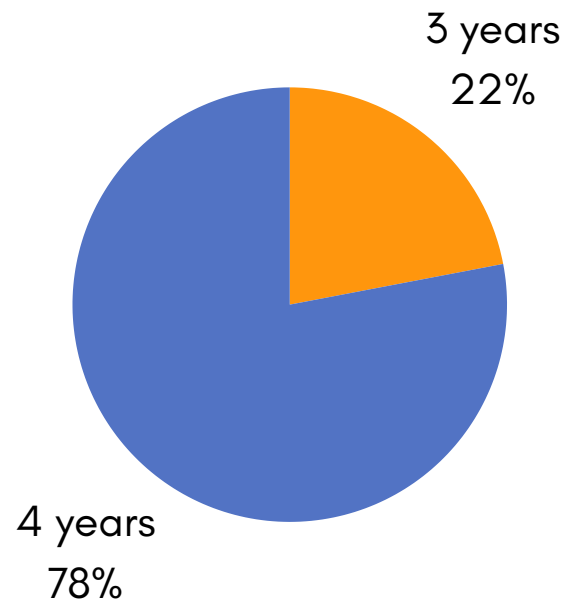
GENDER

- 25 girls
- 43 boys

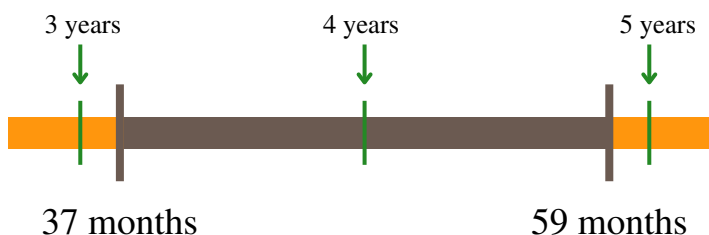


AGE

- 15 children were 3 years
- 53 children were 4 years



Age Range in Months



ON AVERAGE CHILDREN WERE 48 MONTHS OLD, WITH A RANGE FROM 37 TO 59 MONTHS.

SELF-REGULATION IN EARLY CHILDHOOD

WHAT IS SELF-REGULATION?

Self-regulation involves children's ability to control their attention, emotions, and behaviours¹.

Self-regulation includes skills that are important for children to develop. These skills can help children focus their attention, control emotional reactions, and manage impulsive behaviours in the classroom.



Self-regulation can be broken down into emotional self-regulation and behavioural regulation.

Emotional self-regulation involves monitoring and adjusting emotional expressions, such as managing emotional distress².

Behavioural regulation involves regulating attention and impulsive behaviours, such as the ability to follow instructions³.

EMOTIONAL SELF-REGULATION

WHY ARE THESE SKILLS IMPORTANT?

The ability to regulate the expression of different emotions is an important skill that children learn. Emotion self-regulation can help children recognize and manage difficult emotions, such as feeling overly excited, sad or angry. These skills can help children interact positively with their peers and others⁴.

HOW DID WE ASSESS THESE SKILLS?

The Puppet Task⁵ assesses children's ability to think of and to recognize effective emotion regulation strategies.

In this task, puppets are used to act out scenes with different emotions, like feeling excited, angry or sad.

After each scene, children are:

- (1) asked to think of strategies the puppets could use to manage their emotions, and
- (2) presented with 2 strategies the puppets could use to manage their emotions and are asked to select the best strategy.



The Disappointing Gift Task⁶ assesses how children regulate their emotions when presented with an unexpected, disappointing situation.

Children are shown a few small gifts and asked to select their favorite gift and least favorite gift.

After doing other tasks, children are given their least favorite gift as a thank you. Children's facial expressions, actions and verbal comments are observed for 20 seconds. After 20 seconds, children are given their favourite gift with an apology for the silly mix-up.



EMOTIONAL SELF-REGULATION: YEAR 1 FINDINGS

PUPPET TASK



Children were better at recognizing effective strategies than thinking of ideas for how puppets could best manage emotions in each scene.

There were no differences between girls and boys.

The 4 year olds thought of more ideas to regulate emotions than the 3 year olds for anger.

Children may be better at recognizing than thinking of ideas for effective strategies due to their verbal skills.

Children may be better at recognizing scenes with negative (e.g., angry, sad) than positive (e.g., excitement) emotions because they have more chances to learn how to regulate negative emotions. Negative emotions can cause distress and can lead to seeking help from adults.

The 4 year olds may be better at thinking of strategies for anger than 3 year olds because strategies to regulate anger need better verbal skills.

DISAPPOINTING GIFT TASK

Children showed few positive strategies to manage feelings of disappointment. This is expected as children begin to develop a greater ability to self-regulate the expression of emotions at about 3 years of age.

As children get older, they begin to recognize that different emotional regulation strategies may be needed in different situations⁷. About 6 years of age children get better at regulating their emotional responses to unexpected situations⁸.



STRATEGIES FOR EMOTIONAL SELF-REGULATION

BELLY BREATHING

The way we breathe is linked to the way we feel. When we are sad, angry, anxious, or even overly excited, our breathing is often rapid and shallow. This means our breathing is quick and does not reach far into the lungs and belly.

Just like our feelings can change how we breathe, how we breathe can help change our feelings.

Belly breathing is when we take slow, deep breaths that reach into the belly⁹. Belly breathing can help us calm down. Anyone can do belly breaths anywhere and anytime.



1

Start by making sure your feet are flat on the floor. You can do this either sitting down or standing up. Put one hand on your belly.

2

Breathe in slowly through your nose while counting to 3. Imagine you are filling up a balloon in your belly. You should feel your hand moving up on your belly.

3

Now, breathe out through your mouth while counting to 3. Imagine you are emptying the balloon you just filled in your belly. You should feel your hand moving down on your belly this time.

4

Repeat steps 2 to 3 a couple more times. Think about how you felt before and after the belly breathing.



You can help children belly breathe by teaching them what it is, showing how it can help, and practicing the steps. You can guide children while they practice the steps and helping them think about when they could use belly breathing.

Think of a visual cue (e.g., hand on the belly) children can use to indicate when they feel upset. Then you can remind them of the belly breathing strategy.



STRATEGIES FOR EMOTIONAL SELF-REGULATION



















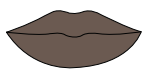

5-4-3-2-1 Grounding Strategy

The 5-4-3-2-1 grounding strategy helps calm children down when they are feeling big emotions¹⁰. This can help shift their focus from being upset or overly excited to their senses.

Children name 5 things they can see, 4 things they can touch, 3 things they can hear, 2 things they can smell, and 1 thing they can taste.

You can help children learn the 5-4-3-2-1 strategy by explaining how it can help, showing how it can work, and helping them think about when they could use it.

Think of a visual cue (e.g., wiggling 5 fingers) children can use to indicate they are feeling upset. Then you can remind them of the 5-4-3-2-1 strategy.

SEE						
TOUCH						
HEAR						
SMELL						
TASTE						

5-4-3-2-1 can help calm children down when their feelings get too big.



BEHAVIOURAL REGULATION

WHY ARE THESE SKILLS IMPORTANT?

Behavioural regulation provides a basis for children’s learning by helping children remember instructions, inhibit impulsive behaviours, and pay attention. These skills help children remember rules, engage in classroom-appropriate behaviours, and stay focused on learning activities¹¹.

HOW DID WE ASSESS THESE SKILLS?

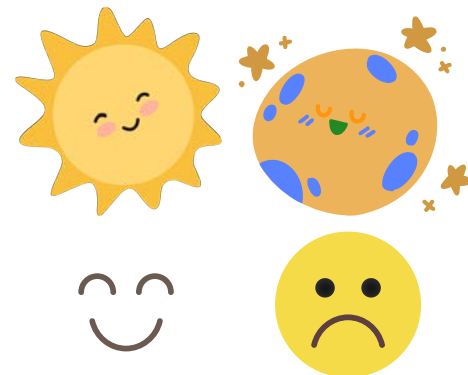


The Head-Toes-Knees-Shoulders (HTKS)¹¹ task assesses children’s ability to remember different rules, to stop impulsive behaviours, and pay attention to changing rules.

In this task, children are asked to touch either their head, shoulders, knees, or toes. Children are supposed to touch the opposite of what is said. For example, if asked to touch their head children need to inhibit the impulse to touch their head and touch their toes instead. Then the rule changes and if asked to touch their head they need to touch their knees.

The Emotional Stroop Task (EST)¹⁴ assesses children’s ability to remember different rules and stop impulsive behaviours.

In this task, children are shown cards with a picture of a moon, sun, happy face, or sad face. Children need to say the opposite of what is on the card. For example, if shown a moon, children need to say sun.





BEHAVIOURAL SELF-REGULATION: YEAR 1 FINDINGS

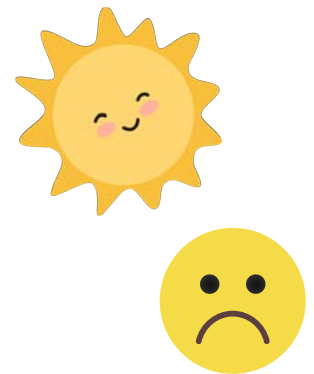
HEAD-TOES-KNEES-SHOULDERS TASK



Most children had difficulty completing the Head-Toes-Knees-Shoulders task, with about 17% able to complete the full task correctly. Girls and boys showed similar skills. As expected, 4 year old children were better at this task than 3 year olds.

EMOTIONAL STROOP TASK

Most children had also difficulty completing the Emotional Stroop Task, with about 30% able to complete the full task correctly. Girls and boys showed similar skills. As with the HTKS task, 4 year old children did better at this task than 3 year olds.



At 3 years old, children are just beginning to learn ways to remember different rules, control impulsive behaviours, and focus their attention¹⁵. Children show rapid gain in their behavioural regulation after the kindergarten year¹⁴. This is likely why 4 year old children did better on both the HTKS and Emotional Stroop tasks than the 3 year olds.

STRATEGIES FOR BEHAVIOURAL REGULATION

PLAY-BASED LEARNING

Play-based learning and activities involve giving children periods for unstructured play to encourage their self-directed speech, creativity, and imaginative thinking.

Play-based learning helps children take an active role in guiding their own thinking in solitary and co-operative play and can help children learn self-regulation strategies¹⁶.



Engaging in playful activities where children need to co-operate with peers can help children learn important skills, such as the ability to explain their thinking and ideas. These skills can support the development of children's behavioural regulation abilities.



After some unstructured play, rules can be introduced slowly. This can help children learn how to perform scripts and take on specific roles, such as playing doctor or teacher.

Children learn to act out different roles, follow social norms and rules, and play-based rules while practicing their behavioural regulation.

STRATEGIES FOR BEHAVIOURAL REGULATION

SOMATIC AND MOVEMENT-BASED ACTIVITIES



Somatic and movement-based activities are body-focused activities that bring the body, breathing, and movement into activities to help children regulate their behaviours¹⁷.

These kinds of activities encourage children to focus on their body, deep breathing, use their memory, and work on strategies to inhibit impulsive behaviours.

Somatic activities include yoga and stretching activities to improve the mind-body connection. Act Your Feelings is another activity where children select cards with different feelings on them and act out the feelings.

Movement-based activities include creating obstacle courses for children to navigate, dance routines for children to follow, charades for children to act out different words, and animal charades for children to act out animals that describe how they feel, such as a Slow Sloth, Proud Lion, or Happy Dog.



Music and rhythm can also help children practice their motor control skills and reaction time¹⁸.

These activities help children develop motor and behavioural self-regulation skills, and can also help children calm down and think about big emotions.



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 caregivers and children 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 Hogg 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/>

Questions about our project? Please email Dr. Wendy Hogg at hogg@ualberta.ca.

REFERENCES

- McClelland, M. M., & Cameron, C. E. (2011). Self-regulation and academic achievement in elementary school children. *New Directions for Child and Adolescent Development*, 201(133), 29-44.
- Thompson, R. A. (1991). Emotional regulation and emotional development. *Educational Psychology Review*, 3(4), 269-307.
- McClelland, M. M., Cameron, C. E., Connor, C. M., Farris, C. L., Jewkes, A. M., & Morrison, F. J. (2007). Links between behavioral regulation and preschoolers' literacy, vocabulary, and math skills. *Developmental Psychology*, 43(4), 947-959.
- Carlson, S. M., & Wang, T. S. (2007). Inhibitory control and emotion regulation in preschool children. *Cognitive Development*, 22(4), 489-510.
- Cole, P. M., Dennis, T. A., Smith-Simon, K. E., & Cohen, L. H. (2009). Preschoolers' emotion regulation strategy Understanding: Relations with emotion socialization and child self-regulation. *Social Development*, 18(2), 324-352.
- Cole, P. M. (1986). Children's spontaneous control of facial expression. *Child Development*, 57(6), 1309-1321.
- Kieras, J. E., Tobin, R. M., Graziano, W. G., & Rothbart, M. K. (2005). You can't always get what you want: Effortful control and children's responses to undesirable gifts. *Psychological Science*, 16(5), 391-396.
- Saarni, C. (1984). An observational study of children's attempts to monitor their expressive behavior. *Child Development*, 55(4), 1504-1515.
- Khng, F. K. H. (2023). Deep breathing and mindfulness: Simple techniques to promote students' self-regulation and well-being from the inside out. In R. B. King, I. S. Caleon, & A. B. I. Bernardo (Eds.), *Positive Psychology and Positive Education in Asia: Understanding and Fostering Well-Being in Schools* (pp. 311-325). Springer Nature.
- Stephanie Grant, PhD. (2020, April 10). Regulating Ourselves & Our Kids [Video]. Youtube. <https://www.youtube.com/watch?v=1ZnyAeUrbE>
- Ponitz, C. C., McClelland, M. M., Jewkes, A. M., Connor, C. M., Farris, C. L., & Morrison, F. J. (2008). Touch your toes! Developing a direct measure of behavioral regulation in early childhood. *Early Childhood Research Quarterly*, 23(1), 141-158.
- Diamond, A. (2013). Executive functions. *Annual Review of Psychology*, 64(1), 135-168.
- Rueda, M. R., Posner, M. I., & Rothbart, M. K. (2005). The development of executive attention: Contributions to the emergence of self-regulation. *Developmental Neuropsychology*, 28(2), 573-594.
- Lagattuta, K. H., Sayfan, L., & Monsour, M. (2011). A new measure for assessing executive function across a wide age range: children and adults find happy-sad more difficult than day-night. *Developmental Science*, 14, 481-489.
- Spiegel, J. A., & Lonigan, C. J. (2018). A head-to-toes approach to computerized testing of executive functioning in young children. *Early Childhood Research Quarterly*, 44(1), 15-25.
- Vieillevoys, S., & Nader-Grosbois, N. (2008). Self-regulation during pretend play in children with intellectual disability and in normally developing children. *Research in Developmental Disabilities*, 29(3), 256-272.
- Robinson, L. E., Palmer, K. K., & Bub, K. L. (2016). Effect of the Children's Health Activity Motor Program on Motor Skills and Self-Regulation in Head Start Preschoolers: An Efficacy Trial. *Frontiers in Public Health*, 4.
- Williams, K. E., & Berthelsen, D. (2019). Implementation of a rhythm and movement intervention to support self-regulation skills of preschool-aged children in disadvantaged communities. *Psychology of Music*, 47(6), 800-820.