

U.S. DEPARTMENT OF EDUCATION PRESENTS:

# How Family Engagement Supports Kindergarten Readiness and Early School Success

WEBINAR

June 27, 2023

1:00–2:30 PM ET



Overdeck  
Family  
Foundation





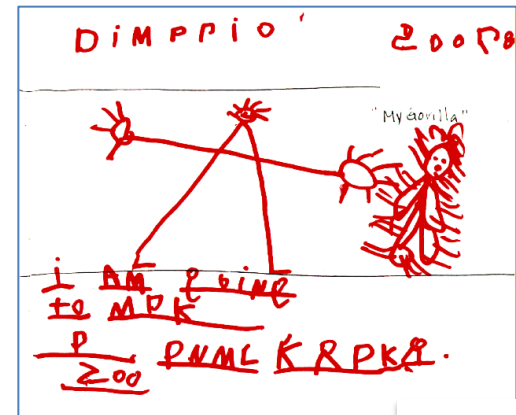
TOOLS  
OF THE  
MIND

# Family Engagement: Lessons from Tools of the Mind

June 27, 2023

Deborah Leong, Ph.D.

Priscilla Hopkins



# Presenters



**Debrah Leong, Ph.D.**  
Co-Founder & President  
Tools of the Mind



**Priscilla Hopkins**  
Executive Director, Early Childhood Education  
Denver Public Schools





# Tools of the Mind

- **Develops** Self-regulation *and* academic skills in PreK & K comprehensive curriculum
  - Scaffolds based on individual child development
- **Integrates** Make-Believe Play and Playful Learning as leading activities
- **Teaches** children *how* to learn
- **Teaches** teachers child development, classroom practices and how to build an inclusive regulated community of learners
- **Supports** teachers building deep partnerships with families by creating technology to support relationship building, micro coaching, and ways to be connected to what's happening in the classroom



MIND MATTERS Wray  
Herbert

## Is EF the New IQ?

Why the ability to resist distraction, a skill scientists call "executive function," may be more important to academic success than traditional measures of intelligence.



## Executive Functions Self-Regulation

Avens Publishing Group

J Neurol Psychol

Special Issue 2015

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### Relationships between Executive Function and Emotional Regulation in Healthy Children

#### Abstract

As an aspect of cognitive control, emotion regulation has been thought to be closely associated with executive functioning. Previously proposed models have indicated that they are bidirectionally linked, suggesting that deficits in one area of functioning may generate deficits in the other. The current study sought to investigate the relationships between executive functioning and emotion regulation in healthy children ages 8-12 by examining associations between standardized measures of executive functioning and emotion regulation. Children were administered neuropsychological and self-report measures of emotion regulation and executive functioning while parents completed behavioral ratings of these abilities. Associations between behavioral ratings and neuropsychological measures indicated that greater proficiency in executive functioning skills was associated with

Open Access

Research Article



### Journal of Neurology and Psychology

Eliana L. Sudikoff, Madison Bertolin, Danielle N. Lordo, and David A.S. Kaufman\*

Department of Psychology, Saint Louis University, St. Louis, MO, USA

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coping style as situations change. Research has indicated that experience plays a primary role in allowing an adult to modulate



## Closing the Achievement Gap through Modification of Neurocognitive and Neuroendocrine Function: Results from a Cluster Randomized Controlled Trial of an Innovative Approach to the Education of Children in Kindergarten

Clancy Blair<sup>1</sup>, C. Cybele Raver

Department of Applied Psychology, Steinhardt School of Culture, Education, and Human Development, New York University, New York, New York, United States of America

### Abstract

Effective early education is essential for academic achievement and positive life outcomes, particularly for children in poverty. Advances in neuroscience suggest that a focus on self-regulation in education can enhance children's engagement in learning and establish beneficial academic trajectories in the early elementary grades. Here, we experimentally evaluate an innovative approach to the education of children in kindergarten that embeds support for self-regulation, particularly executive functions, into literacy, mathematics, and science learning activities. Results from a cluster randomized controlled trial involving 29 schools, 79 classrooms, and 759 children indicated positive effects on executive functions, reasoning ability, the control of attention, and levels of salivary cortisol and alpha amylase. Results also demonstrated improvements in reading, vocabulary, and mathematics at the end of kindergarten that increased into the first grade. A number of effects were specific to high-poverty schools, suggesting that a focus on executive functions and associated aspects of self-regulation in early elementary education holds promise for closing the achievement gap.

**Citation:** Blair C, Raver CC (2014) Closing the Achievement Gap through Modification of Neurocognitive and Neuroendocrine Function: Results from a Cluster Randomized Controlled Trial of an Innovative Approach to the Education of Children in Kindergarten. PLoS ONE 9(11): e112293. doi:10.1371/journal.pone.0112293

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**Data Availability:** The authors confirm that all data underlying the findings are fully available without restriction. Data are available from the DRYAD Digital Repository: doi:10.5061/dryad.58795

**Funding:** Support for this research was provided by Institute of Education Sciences grant R03A120038. <http://dx.doi.org/10.1371/journal.pone.0112293>. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

**Competing Interests:** The authors have declared that no competing interests exist.

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### Introduction

The 30th anniversary of the groundbreaking report, *A Nation at Risk*, serves as a powerful reminder of the persistence and growth of SES-related gaps in achievement [1] and signals the need for a renewed commitment to early learning, particularly for children in poverty. Recent advances in neuroscience suggest that poverty-related gaps in achievement are accompanied by poverty-related differences in brain structure and function [2–4] and differences in the regulation of attention, emotion, stress response physiology, and executive functions important for early learning [5,6]. These findings support the hypothesis that SES-related gaps in academic abilities at school entry are in part attributable to effects of poverty on children's self-regulation development [7–9].

To date, decisions about the most effective ways to foster learning in early childhood have not fully capitalized on advances in the neuroscience of self-regulation. Few interventions or approaches have targeted children's executive functions and self-regulation, despite evidence of the plasticity and malleability of neural and physiological systems that support self-regulation and early learning [10–12].

Research has shown that executive functions, defined as cognitive flexibility, working memory, and inhibitory control are malleable [13,14] and predict academic achievement in children over and above IQ and socioeconomic status [15,16]. Although executive functions are defined by a specific set of cognitive skills, they are one aspect of a larger self-regulation system consisting of multiple components arrayed along a continuum from effortful to automatic [17,18]. As a higher order construct embodying the volitional, active engagement of attention and emotion for the purpose of goal-directed action, executive functions can be understood to regulate activity in lower level neural systems associated with attention, emotion, and physiological responses to stimulation. This top-down influence of executive functions is their hallmark and is frequently emphasized in theory and research on cognitive control [19–22]. The relation of executive functions to lower level systems, however, is reciprocal. Changes in emotional and attentional state in response to stimulation are accompanied by physiological changes as indicated by circulating levels of catecholamines, dopamine and noradrenaline, and the steroid hormone cortisol that influence and can at high levels overwhelm neural activity in prefrontal cortex, the seat of executive function

## Hot Topics

### University of British Columbia Researchers: Tools of the Mind Improves Student Academic Outcomes, Executive Function, and Joy; Reduces Teacher Burnout

Can one kindergarten curriculum “improve self-control and attention-regulation, academic performance, prosocial behavior, and reduce classroom stress and teacher burnout”? Yes, suggest four researchers from the University of British Columbia, if its Tools of the Mind.

They found it “not only improves academic outcomes in reading and writing, but also ... improves EFs [executive functions] in the classroom ..., markedly reduces teacher burnout and children being ostracized or excluded, and increases the joy students and teachers experience in school.”

Tools of the Mind, referred to as Tools, “focuses as much on improving EFs (especially inhibitory control), classroom climate, prosocial behavior and interpersonal skills as on improving academic skills.”



## TOOLS OF THE MIND: IMPACTS ON DUAL LANGUAGE LEARNERS

Clancy Blair, M. Paula Daneri,  
Carol Scheffner-Hammer, &  
Lisa Lopez

SRCD, 2017

# Tools Family Engagement

- Increase family knowledge, confidence, and participation in their child's learning and development in and out of school
- Explain the learning goals behind key Tools activities (what skill/content, executive functions, and learning strategies are practiced)
- Empower families to scaffold self-regulation and executive functions development
- **Give families strategies that will help their children become intentional learners—to “learn how to learn” in Tools classrooms and in the future**





# Early Tools Family Engagement Materials

## Tools of the Mind Curriculum Preschool Issue #2 www.toolsofthemind.org

### A Glimpse of Three- and Four-Year-Olds

Dear Parents,  
Your child's day in preschool is a busy one. Though they may answer, "Nothing," or "I don't know" when you ask them what they did, rest assured they were engaged and participating in many activities designed to foster their physical, social-emotional, and cognitive development. You can always ask some strategic questions to spark more discussion. We suggest asking specific questions like, "Do you remember any of your new friends' names?" "Did your teacher read a book today?" "What center did you play in?" As the year goes on, you'll start to see your child's memory and oral language skills developing, and you'll also have the tools to be able to guide the discussion. For instance, knowing your child's classroom names, the classroom theme, and having work samples to prompt memory and discussion. This is a great way to start helping your child to remember on purpose. A young child's memory is much smaller than ours, as adults, so they need extra support to help them remember deliberately.

### Play Plans

Your child will be making a play plan before he or she goes to centers to play. The play plan will have an area in which to draw a picture, a place for the child to write his/her name, and space at the bottom for Scaffolded Writing. At the beginning of the year, the teacher will write the message, but your child will be writing his or her own message as the year goes on. Children use different colors to make their plans. These colors represent a specific center. Your child's teacher may have already shared his or her system with you. If not, ask about the colors of the centers.

The play plan will be sent home at the end of the week. This is a great opportunity for you to talk with your children about what they learned/did by asking them to "read" the plan to you. For the three-year-old this often means remembering what he/she did using the color of the drawing as a clue. If your child's classroom uses orange for the Block Center, which is the "orange" because the theme for this month is "Family," then you can say things like "Did you go to the Block Center because your drawing is in orange?" or "I see here it says 'I am going to play store,' as you point to the words the teacher may have written. If your child does not remember his/her specific plan, this is okay; there are MANY enjoyable things to do at each center. Prompting memory is important in building underlying cognitive skills that are a part of self-regulation.

## What makes Tools of the Mind unique?

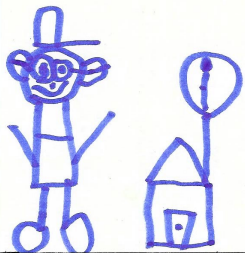


- All activities are designed to give children a unique experience.
- Make connections between learning and play.
- Children learn to regulate their emotions and behavior.

## WELCOME! PreK Back to School Night



RYAN



\* I AM GOING  
to the PL  
w the ps  
SHL (shuttle) space

Name: Gregory Date: 5/22-5/26

Study Buddy: Maxine

1 Listening Center <input checked="" type="checkbox"/>	1 Stories and Charts <input checked="" type="checkbox"/>
Alexander very dadday	HURDUDE PUMPT
2 Investigations <input checked="" type="checkbox"/>	2 Penmanship Center <input checked="" type="checkbox"/>
Fur	Sentences
1 Word Puzzles <input checked="" type="checkbox"/>	1 Make a Book <input checked="" type="checkbox"/>
Sound Puzzles	OUR DESERT HOME
2 Literacy Games <input checked="" type="checkbox"/>	2 Sound Center <input checked="" type="checkbox"/>
BOOKS	SUCH

My Learning Goal is: I am working on sound center.

Aaron

Thainers

CBR

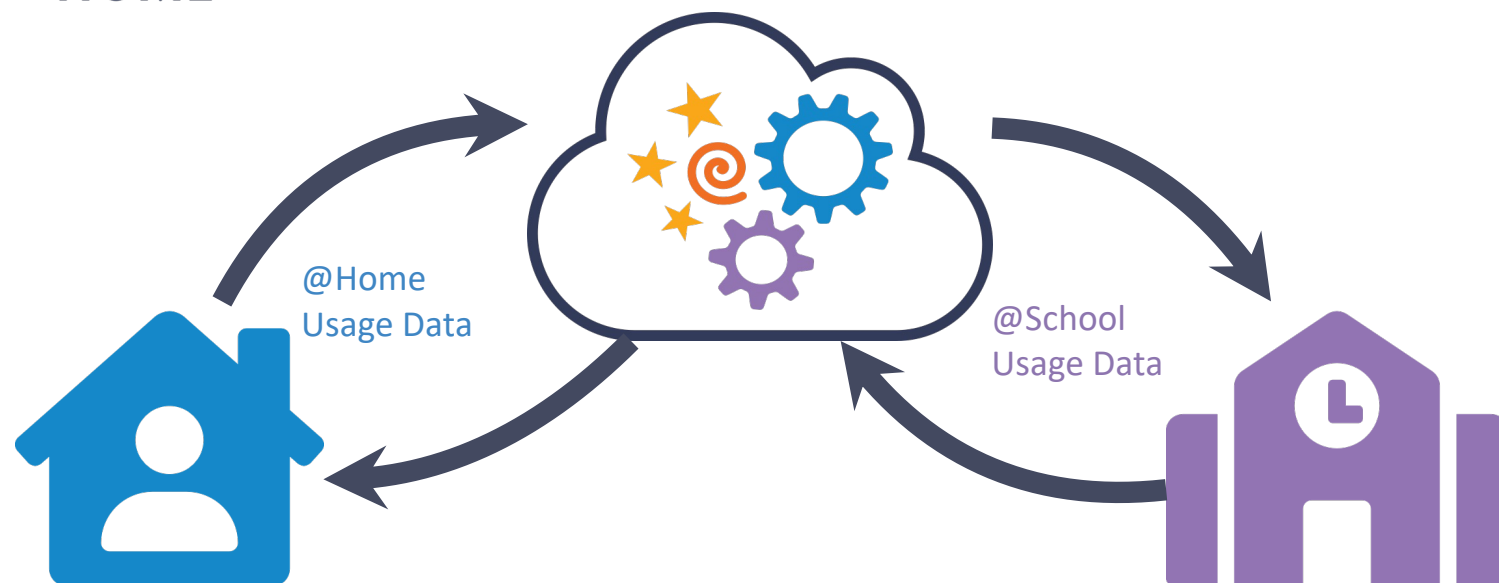
Aaron

a volcano it exploded and  
the dinosaurs were still  
on earth



# Supporting Tools Classrooms during the Pandemic and Beyond

# NEW Model of Home-School Learning



## Tools @ Home

- Reading & Writing Apps & Fluency eGames as well as off-line resources targeted to child's developmental progress in school
- Data on child progress at home is fed back to teacher in real-time
- Resources for Parents (including web-based, text-message, teacher:parent handouts, etc.)

## Tools @ School

Existing Tools practice, with the addition of:

- Guidance and materials to support teachers in engaging parents
- Incorporation of data from at-home usage into teacher practice
- New professional development for teachers



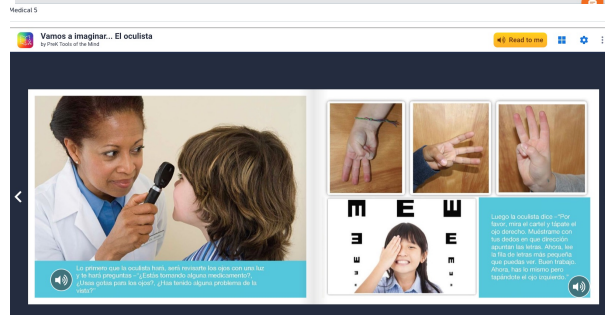
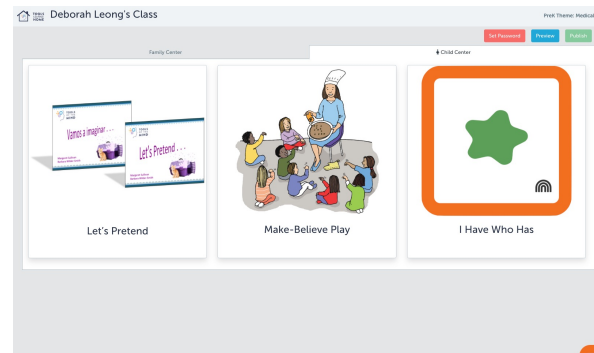
# Empowering Parents & Teachers in partnership to support strong child outcomes

Tools Approach to  
Building Self-  
regulation Baked into  
Design of Classroom  
Activities

Tools Approach to  
Building Self-  
regulation Baked into  
Design of *Digital*  
Activities

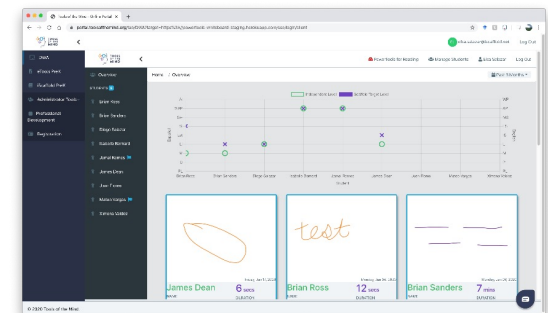
Teachers and Parents  
are powerful partners  
as children engage in  
Tools activities in  
school and/or at home

Teachers learn Tools approach  
to teaching & learning through  
use of activities with children



Parents learn approach  
to teaching & learning through  
use of activities with children

Teachers can see children's learn @  
home data and coach children &  
parents





# Learn@Home

Follows the schedule of the classroom

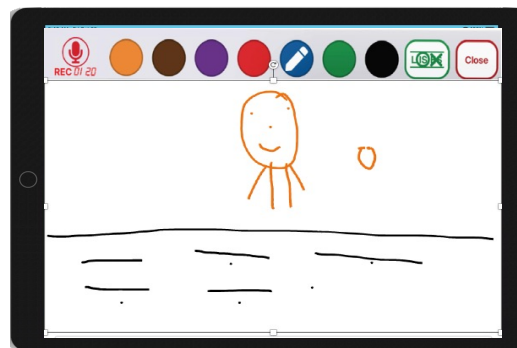
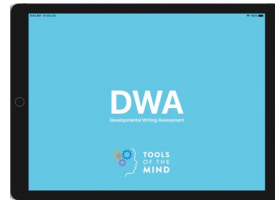
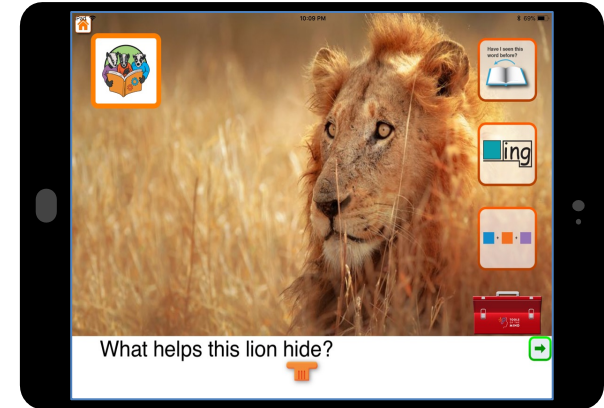
- Parent Center – explains how to implement activities and the learning goals of each activity (Self-Regulation, oral language/vocabulary, literacy skills, math skills, etc.)
- Child Center—Activity materials

The screenshot shows the 'PreK Administrator's Class' interface for the 'Parent Center'. At the top, there's a navigation bar with a home icon, the title 'PreK Administrator's Class', a URL bar with 'https://learn.toolsathome.org/magical-eagle-6369', and buttons for 'Copy', 'Set Password', 'Preview', and 'Publish'. Below the navigation bar, there are tabs for 'Parent Center' (selected) and 'Child Center'. The main content area includes a 'PreK Administrator's Note' section with a text box and a date '07/07/2021'. Below this is a 'PreK Learn@Home: Family Theme' section with a 'Download Packet' button. The 'Welcome to Tools of the Mind Learn@Home!' section provides information about the Parent Center and includes a link to 'Supporting Self-Regulation at Home'.

The screenshot shows the 'PreK Administrator's Class' interface for the 'Child Center'. The navigation bar is identical to the Parent Center view. The 'Child Center' tab is selected, showing three activity cards: 'Let's Pretend' (with a book cover titled 'Vamos a imaginar...'), 'Make-Believe Play' (with an illustration of a chef and children), and 'I Have Who Has' (with a green star icon). The 'Let's Pretend' card is highlighted with a blue border.

# Tools Reading and Writing Apps

PowerTools and the Developmental Writing Assessment (DWA) embed Executive Functions in decoding and encoding practice used at home and school.





# Family Connect

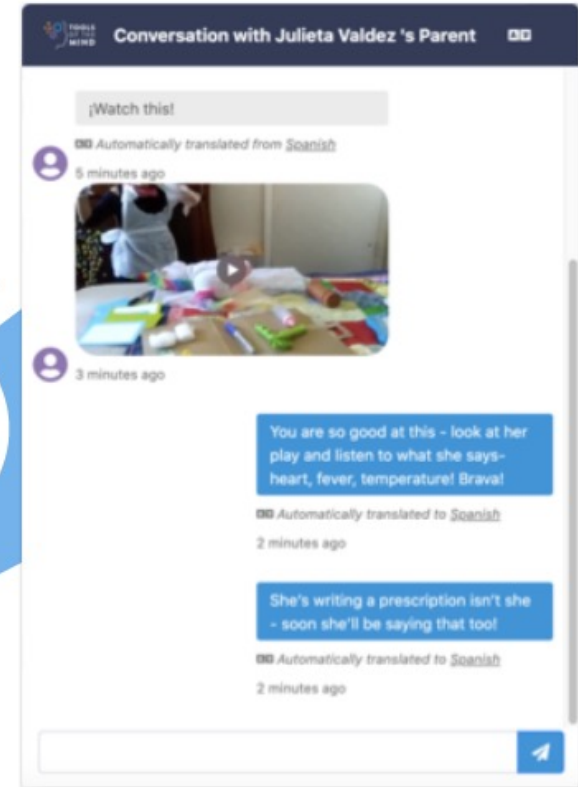
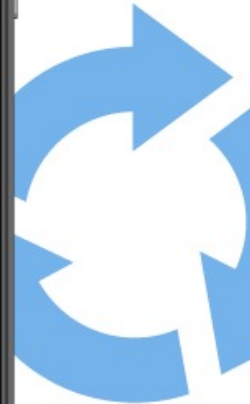
Family Connect provides coaching and support for parent implementation of Tools activities using cell phones.

Parents and teachers upload videos of children learning and exchange texts about the video in their language of choice.

Texts are simultaneously translated into 100 different languages.



**Parent receives SMS  
on cell phone**



**Teacher sends message  
via Tools Portal**

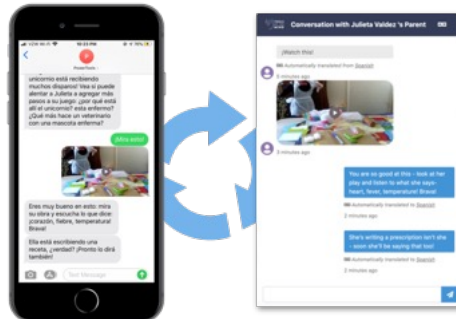
# Documenting Family Involvement



**51,000+** teacher sign-ins to the Tools Portal, which houses Tools family resources



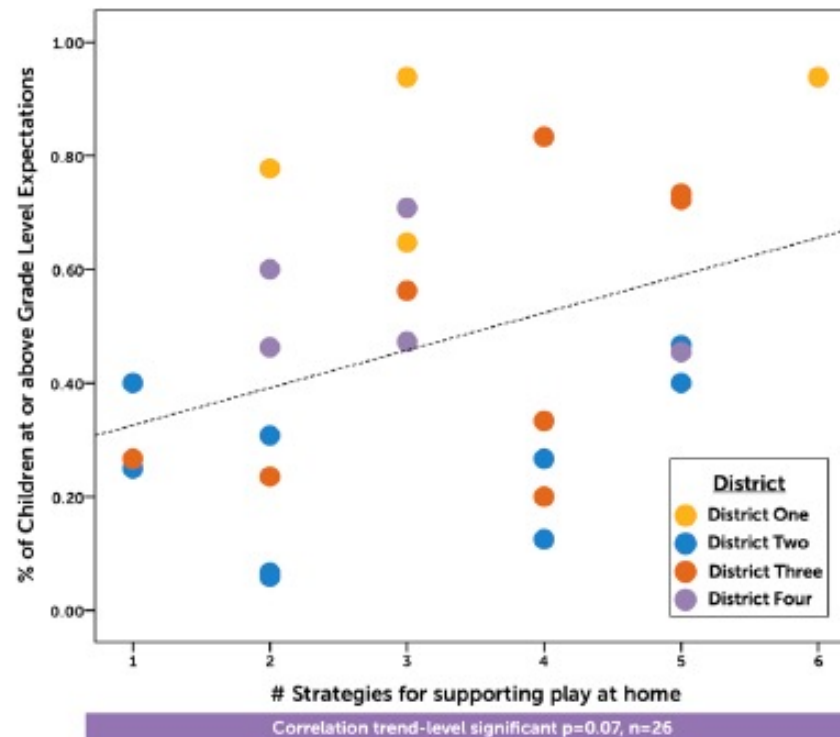
**18,000+** families have accessed Virtual Classroom's Tools Learn@Home resources



**422,000+** messages exchanged on Family Connect between families and teachers with **100,000+** messages translated

The Impact: Teachers who used more strategies to help families facilitate play at home had more children who met or exceeded grade level outcomes on district measures.

## Teachers' At-Home Play Strategies and Outcomes



*"The relationship between the number of play strategies a teacher employed and the average reading outcome for their classroom was trend-level significant ( $\rho=0.36$ ,  $p=0.07$ )"*



# Parental Feedback PreK



The connection they made with their child's teacher was valuable

They felt supported by their child's teacher

They felt successful at helping their child engage in make-believe play at home

They felt successful helping their child make a Play Plan at home

The ability to have their child draw/write their Play Plan on the DWA app and have their teacher view it was valuable

What we are  
building here  
is a LOVE of  
learning.



# Tools Teacher Capabilities



Classroom Practices Supporting Self-Regulation



Responsive Differentiation of Instruction



Playful Learning



Scaffolding Children




Classroom Culture



**Powerful Partnerships with Families and Caregivers**



# TREE—Teachers Reaching Educational Excellence: Interactive Dashboard to Support Teacher Growth



TOOLS OF THE MIND

Home

iScaffold PreK

iScaffold K

Tools Connect

Tools@Home Pre-K

Virtual Classroom

Family Connect

Tools@Home K

Virtual Classroom

Family Connect

Community

DWA

PowerTools

eTools PreK

eTools K

Administrator Tools

Registration

Manage Users

Portal Help

MyTREE

Opening Group | Cycle 1


This cycle we are focusing on Opening Group and a set of 5 key practices you're working on that will impact children's development.

LOOK FORs:

Chat with Barb

EL Elsa Salazar Log Out

Opening Group | Cycle 1 VIDEO 1



Notes +

Strengths +

Ideas +

Wonders +

1 Notes 1 Strengths 1 Ideas 1 Wonders

Note

I think I got most of the look fors but children aren't participating as actively as I would like. Not sure how to up their engagement? Look forward to your feedback.

Elsa Salazar

3 days ago

Strength

The quality of interactions between children in Share the News was incredible — how did you help them all learn to face one another like that so smoothly?

Barb Wilder-Smith

3 days ago

Cycle 1

Cycle 2

Pre Post

Post Pre Post





## Tools PLANT Assessment Development

Tools approach to ecologically authentic, naturalistic assessment that unites teachers, families & caregivers in enabling every child to reach their full potential with visibility into each child's unique developmental trajectory and actionable steps tied to where each child is across the year to support development in school and at home.



DENVER  
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SCHOOLS

Discover a World of Opportunity™





# DPS Experience



## Tools of the Mind Curriculum

Preschool Issue #2  
www.toolsofthemind.org

### A Glimpse of Three- and Four-Year-Olds

Dear Parents,

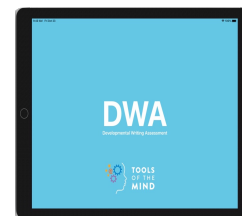
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### Play Plans

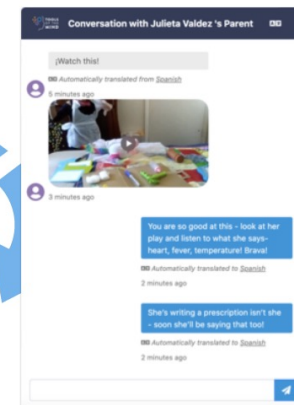
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Parent receives SMS  
on cell phone



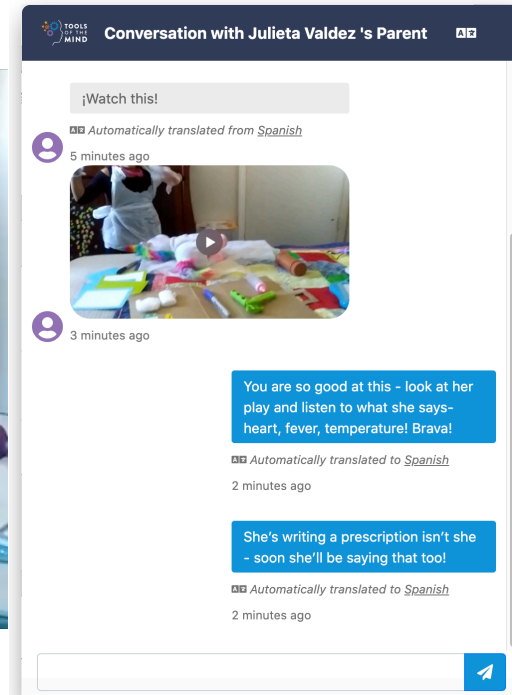
Teacher sends message  
via Tools Portal

# Family Connect

## Supporting Family-School Communication



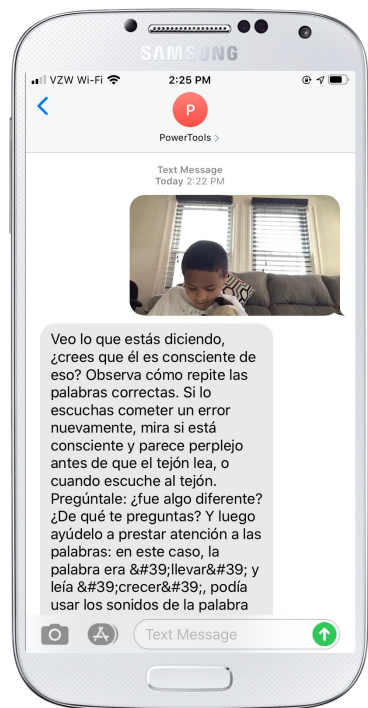
Parent



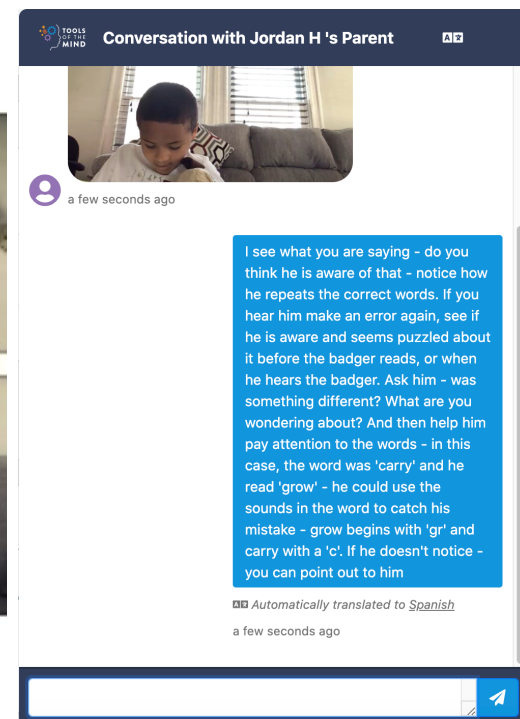
Teacher  
Via Tools Portal



# Family Connect: K



Parent



Teacher  
Via Tools Portal

# Continuing Family Engagement in Later Grades

- Allowing time for grade levels to share expertise and to plan together, including ideas for family engagement
- Having parents visit the classroom the child will be in for the following year and how developmentally best practices are continued into the next grade level
- Continuing the emphasis on “Learning How to Learn” and executive functions/self-regulation through an end-of-the-year conference with parents and PD for the upper-grade teachers