“And when they woke up… they were monkeys!”
Using classroom games to promote self-regulation and school success.

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May 28, 2009
Presentation Agenda

★ Part I
  Self regulation research
    • What is self-regulation? Why is it important?
    • How is self-regulation studied and measured?

★ Part II
  Self regulation interventions
    • Self-regulation games, activities, and ideas

★ Part III
  – Time to workshop!

★ Part IV
  – Sharing and conclusions
Part I

Self-Regulation Research
Recent Headlines


“Study Charges N.J. Preschools [are] Kicking Kids Out” (The Record)

“Expulsion Rate Highest for Preschoolers, Study Shows” (Fort Worth Star-Telegram)
First day of school
A few Kansas K math standards

- reads and writes whole numbers from 0 through 20 in numerical form ($).
- 2. represents whole numbers from 0 through 20 using place value models (2.4.K1b) ($), e.g., ten frames, unifix cubes, straws bundled in 10s, or base ten blocks.
- adds and subtracts using whole numbers from 0 through 10 and various mathematical models (2.4.K1a) ($), e.g., concrete objects, number lines, or unifix cubes
- recognizes and investigates attributes of circles, squares, rectangles, triangles, and ellipses using concrete objects, drawings, and/or appropriate technology (2.4.K1a,e).
- sorts cubes, rectangular prisms, cylinders, cones, and spheres (solids/three-dimensional figures) by their attributes using concrete objects (2.4.K1e)
- recognizes whether an event is impossible or possible (2.4.K1f) ($), e.g., the possibility of a person having ten heads is impossible, while the possibility of a person having red hair is possible.
- compares two randomly arranged groups of 10 concrete objects or less and states the comparison using the terms: more, less, about the same (2.4.A1a).
- demonstrates how several plane figures (circles, squares, rectangles, triangles, ellipses) can be combined to make a new shape (2.4.A1c).
What skills do children need for school success?
National Teacher Survey Says…

« 16% of children have “difficult” kindergarten transitions.
« 46% of kindergarten teachers report that half of the children in their classrooms lack skills that are critical for school success.

(Rimm-Kaufman, Pianta, & Cox, 2000)
A Quick Poll of Teachers in the Room

Introduce yourself to those around you and together, answer these questions:

– What skills do children need when they enter school?
– What skills do children in your classrooms most often lack?
“At least half the children in my class had this difficulty at kindergarten entry.”

<table>
<thead>
<tr>
<th>Skill</th>
<th>Percentage</th>
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<tr>
<td>Following Directions</td>
<td>46%</td>
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<tr>
<td>Academic Skills</td>
<td>36%</td>
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<tr>
<td>Work Independently</td>
<td>35%</td>
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<tr>
<td>Work in a Group</td>
<td>31%</td>
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<tr>
<td>Social skills</td>
<td>20%</td>
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<tr>
<td>Immaturity</td>
<td>20%</td>
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<tr>
<td>Language Problems</td>
<td>13%</td>
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</table>
National Survey Says…

- Teachers most often reported that self-regulation, not academic skills, are essential for success in kindergarten.

  (Rimm-Kaufman, Pianta, & Cox, 2000)
What is self-regulation?

- Behavior Regulation
- Emotion Regulation
Examples of Self-Regulation in the Classroom

- Ignore distractions
- Effectively filter important information
- Put away toys before running out to play
- Negotiate social situations
- Remember and follow through with instructions
- Think about and process new information
- Raise your hand
- Stay on-task
Self-Regulation Research

- Children enter school with differing levels of self-regulation
  (Lin, Lawrence, & Gorrell, 2003; McClelland, Morrison, & Holmes, 2000; Rimm-Kaufman, Pianta, & Cox, 2000)

- Many children enter kindergarten with low levels of self-regulation
  (McClelland, Morrison, & Holmes, 2000)

- Self-regulation helps children function successfully in classroom settings
  (McClelland, Cameron, Wanless, & Murray, 2007)
Self-Regulation and Achievement

- Self-regulation is important for achievement in preschool, elementary school, through high school, and beyond (Blair & Razza, 2007; McClelland et al., 2007, McClelland & Piccinin, 2009, Valiente, Lemery-Chalfant, & Castro, 2007, Vitaro et al., 2005).

- Self-regulation predicts:
  - literacy and math skills between K & 6th grade
  - growth in literacy and math between K & 2nd (McClelland, Acock, & Morrison, 2006)
Importance of Developing Self-Regulation Skills

• Early elementary school skills are cumulative and children who fail to acquire these skills may face insurmountable difficulties throughout schooling (Entwisle & Alexander, 1993).
In fact…

- National average for high school dropout rate is 30%
- Kansas City Schools: dropout rate is over 40%  (Missouri Education News, 2008)
Who is most at risk of exhibiting poor self-regulation?

Children from low-income families score lower than their peers on measures of:

- School readiness
- Academic achievement
- Self-regulation (attention, memory, & inhibitory control)

(Dearing, Berry, & Zaslow, 2006; Howse, Lange, Farran, & Boyles, 2003; McClelland et al., 2006)
Who is most at risk of exhibiting poor self-regulation?

* Children with low socioeconomic status are especially at risk for entering school with poor self-regulation (Howse, Lange et al., 2003; Wanless et al., 2007)

* These are also children who are most at risk for having an accumulation of risk factors
Self-Regulation and Risk Factors

Self-regulation can moderate the effects of risk factors, including:

– Maternal depression
– Life disruptions
Self-regulation can moderate the effects of other risk factors

Maternal Risk

Environmental Risk

- Internalizing Problems
- Externalizing Problems

Time 1 Time 2 Time 3

Low
High
What teachers can do…

Studies have shown that preschoolers can strengthen self-regulation skills through practice

(Dowsett & Livesey, 2000)

Teachers can find developmentally appropriate ways to help children practice self-regulation to help them develop skills critical for academic success.
Self-regulation at all ages is important, but targeting preschool and early elementary school are especially important because…
Self-Regulation in Preschool and early Elementary School

- One of the first structured environments in which children need to exhibit self-regulation (Phillips, McCartney, & Sussman, 2006)

- Significant increase in vocabulary (Thompson & Lagattuta, 2006)

- Rapid brain maturation in the prefrontal cortex (Blair, 2002)
Pre-Frontal Cortex

– Thought, consciousness, inhibition of impulses, regulation of behavior, and planning
Improving Self-Regulation

“Sensitive periods” for the development of self-regulation and building synaptic pathways in the brain occur during preschool and early elementary school.

85-90% of brain growth occurs by age 5.

This is the time for intervention!
One challenge…

- Children who have poor self-regulation skills are those who need the most help.

- Unfortunately, children with poor self-regulation are the children who have the most trouble paying attention and participating successfully in class.
The challenge to educators

- Develop and implement activities that promote self-regulation in a way that engages all children, especially those who need it most.
Assessing Self-Regulation
How are researchers measuring self-regulation skills?

- Parent and teacher reports
- Computer-based tasks
- Direct tasks
Parent and Teacher Reports
Parent and Teacher Reports

Example: Child Behavior Rating Scale
- Ability to pay attention
- Distractibility/off-task behavior
- Interactions with peers
- Following directions
Direct Tasks

*Advantage: not reliant on observations or others’ reports
Computer-Based Tasks
Flanker Task
Ready?

Begin!
End!
Flanker Task with Distraction
More Computer-based Tasks

* Push the red button when the center circle is red.
* Push the green button when the center circle is green.
More Computer-based Tasks

★ Push a button when you see a number EXCEPT the number 8.
End!
Test of Attention

Circle all of the: 😞
Pencil Tap

When I tap once, you tap twice!
When I tap twice, you tap once!
Head-Toes-Knees-Shoulders Task

20 items
0 = incorrect
1 = self-correct
2 = correct
40 possible points
Head-Toes-Knees-Shoulders

Advantages:

– more like children’s games than the Flanker task or Pencil Tap

Let’s try it! Ready?
HTKS Video Clip
Summary of HTKS Results

- Fall HTKS scores significantly predicted spring literacy, vocabulary, and math skills in preschool and kindergarten.
- HTKS performance significantly predicted gains in literacy, vocabulary, and math skills in preschool, and gains in early math in kindergarten.
HTKS Differences Based on Socioeconomic Status

- Head Start
- Non Head Start

HTKS Task Scores

Fall PreK | Spring PreK | Fall K | Spring K

Graph showing differences in HTKS task scores between Head Start and Non Head Start groups across different periods.
Time for a break!

When you return:
Self-Regulation Interventions,
Games, and Activities!
Part II

Self-Regulation Interventions, Games, and Activities
Kindergarten Readiness Study
Study Goals:

* To pilot test a set of classroom games designed to improve preschoolers’ self-regulation - specifically attention, working memory, and inhibitory control.
## Participants

*N=74 Pre-kindergarteners*

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<tbody>
<tr>
<td>Age</td>
<td>( M = 54.5 ) months (48-60 months)</td>
</tr>
<tr>
<td>Gender</td>
<td>42 female, 32 male</td>
</tr>
<tr>
<td>Parent education</td>
<td>( M = 12.4 ) years (6-16)</td>
</tr>
<tr>
<td>Low-income families</td>
<td>n=34</td>
</tr>
<tr>
<td>Spanish speaking</td>
<td>n=3</td>
</tr>
<tr>
<td>Intervention/Comparison</td>
<td>n=37 in each group</td>
</tr>
</tbody>
</table>

9 classrooms in 2 preschools
Random assignment within classrooms
Measures

**Background Information:**
- Parent questionnaires

**Self-Regulation:**
- Head-Toes-Knees-Shoulders task
- Teacher ratings

**Academic skills:**
- Woodcock-Johnson Psycho-Educational Battery-III
  - Letter-Word Identification
  - Picture Vocabulary
  - Applied problems
## Procedure

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Pre-test (Nov-Dec)</strong></td>
<td>• Self-regulation Assessment</td>
</tr>
<tr>
<td></td>
<td>• Academic Assessment</td>
</tr>
<tr>
<td></td>
<td>• Background Questionnaire</td>
</tr>
<tr>
<td><strong>Intervention (Jan-Mar)</strong></td>
<td>• 16 intervention sessions over 8 weeks; 30 min. each</td>
</tr>
<tr>
<td></td>
<td>• 5-7 children and 2-3 assistant teachers in each session</td>
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<tr>
<td></td>
<td>• 6 increasingly complicated activities were presented</td>
</tr>
<tr>
<td><strong>Post-test (Apr-May)</strong></td>
<td>• Self-regulation Assessment</td>
</tr>
<tr>
<td></td>
<td>• Academic Assessment</td>
</tr>
</tbody>
</table>
Overall Findings

1. Participation in the treatment group was significantly related to growth in self-regulation for children with low self-regulation in the fall.

2. Dosage of the intervention was significantly related to growth in self-regulation, for children with low fall self-regulation.

3. For children with low fall self-regulation, socioeconomic status significantly predicted self-regulation gains over the year.
Fall and Spring HTKS scores based on Socioeconomic Status and Intervention Group for Children with Low Fall Self-Regulation Scores (N = 31)

Note. HTKS is the Head-Toes-Knees-Shoulders self-regulation task.
Next Steps

Examine how intervention participation relates to classroom behavior and academic achievement.

Test the intervention for lasting effects and include multiple time points.

Improve power by testing the intervention with a larger sample size and target children from low-income families and those with low levels of self-regulation.
Let’s get to the fun stuff!

Bring on the games!
Goal of Self-Regulation
Interventions, Games and Activities

- Encourage children to act mindfully.
- Stop, think, and *then* act.
- **Plan** actions.

- Provide opportunities for children to **succeed**.
Self-regulation games

- Choose activities that are engaging to build a foundation of paying attention and following directions
- Scaffolding and lots of reminders!
- Allow children an opportunity to lead
- Children learn by participating and by watching!
Getting warmed up

Hello Song

Everybody wave and say hello!
Everybody wave and say hello!
Everybody wave and say hello!
Say hello, hello.
A little more complicated

зык Hello Song:

*Wiggle your finger and say hello!*

*Clap your hands and stomp your feet and say hello!*
Red Light, Purple Light

Red Light, Green Light with a twist!
Go.

Stop.

Stop.

Go.
Go.

Stop.
Go.

Stop.
Freeze Game

Round 1:
- Traditional Freeze
  - Dance when music plays
  - Freeze when it stops
Beyond Freeze!

★ Create a CD with songs of varying speeds.
  – Children dance quickly to fast music
  – Children dance slowly to slow music
  – Children freeze when the music stops
Now do the opposite!

- Children dance quickly to slow music
- Children dance slowly to fast music
- Children freeze when the music stops

What skills does this game require?
**Freeze Variations**

- Dance when the music plays
- Freeze when it stops and look for an additional instruction
  - Cooperative Freeze
  - Color-matching mats
» Cooperative Freeze

» Color-Matching Freeze
Sleeping, Sleeping…

Sleeping, sleeping, all the children are sleeping!
And when they woke up… they were monkeys!”

Children respond to cues by stopping and returning to their mats during the sleeping song and acting out animals or actions after hearing the next instruction.
Sleeping Variation 1

Sleeping, sleeping, all the children are sleeping! And when they woke up… they were [teacher or child points].”

You choose!
Sleeping Variation 1

Sleeping, sleeping, all the children are sleeping!
And when they woke up... they were [teacher or child points]."

Now children need to remember!
Sleeping, sleeping, all the children are sleeping!
And when they woke up… they were [teacher or child acts].”

Children must stop, watch teacher, guess, and then join in!
Drum Beats

* Drum cues represent different actions!
Drum Beats

When the drum beats (teacher or child chooses):
- walk in a circle
- hop up and down
- kick your legs
- wave your arms

When the drum stops, freeze!
Drum Beats Variations

- Fast drumming = jumping
- Slow drumming = slow motion walking
- Loud drumming = flapping arms
- Soft drumming = nodding head

Motions can be performed while standing and moving or while sitting!
Conductor!

- Each child uses a musical instrument.
- Designate a teacher or child to be the conductor!
Conductor Rules

- When the baton moves, play! When the baton stops, freeze!

- Now try the opposite!
  - Moving baton = stop!
  - Frozen baton = play!
Funny Faces Song

Tune: Mary had a Little Lamb

(Child name) makes a funny face, funny face, funny face.
(Child name) makes a funny face. Watch and copy her/him!
A few activities from other self-regulation interventions
Tools of the Mind

Classroom-based intervention

- Vygotsky Theoretical Foundation
  - Building self-regulation through interactions
  - Scaffolding
  - Zone of proximal development

- Planning actions and mindfulness
Tools of the Mind Activities

* Buddy Reading
Tools of the Mind Activities

Play planning

– Children draw pictures or write words showing what they want to (and will) do during activity time.

– Teachers guide children back to their plans to remind them.
Tools of the Mind Activities

* Statue Game
Virginia Preschool Study

Purpose:
- to work with teachers to design activities to promote preschoolers’ self-regulation.

Teachers then implemented the activities in their own classrooms.
Planning Center Activities

- Poster of the classroom
- Children moved paper cutouts with their names to the place they wanted to play

Diagram:
- Library
- Writing
- Blocks
- Dramatic Play
- Logan
New Student

* Puppet introduced to the class who does not know the classroom rules

* At circle times, children teach the puppet about classroom rules and why they are important.
Class Tower

At the end of circle time, each child placed a block on a single tower!
A few more ideas
Puppet “Simon Says”

Only do what the orange puppet says!

Clap your hands!

Stomp your feet!
Musical Simon Says

Start with 2 classroom instruments.

Clap your hands!

Shake your head!
Musical Simon Says

✧ Add a third instrument!

Wiggle your fingers!

Kick your legs!

Flap your arms!
More Puppet Ideas

- Use puppets to role play scenarios.
  - “I like to throw blocks!”
  - Is this okay?
  - Why not?

- Puppets can be used to teach appropriate behaviors.

- Helping children stop and think is important, but they also need a model of alternate actions and behaviors.
Memory Builders!

- Develop memory skills
- Build vocabulary
- Motivate!
Lessons from another Culture
Reeling, writhing and arithmetic
Selected countries, 2006, average=500
Mathematics performance

Taiwan
Finland
Hong Kong
South Korea
Canada
Japan
Germany
France
Britain
Poland
United States
Mexico

Source: OECD

Based on data from the PISA (Program for International Student Assessment) 2006 report of 15-year-olds’ achievement.

Economist, 12/6/07
Building early self-regulation

- Taiwan - Morning Exercise Dance

- U.S. equivalents
  - Hokey pokey
  - Chicken dance
  - Macarena
Summary

Self-regulation activities should:
- Build attention, memory, and self-control
- Help children stop, think, *then* act
- Provide a model of appropriate behavior
- Engage children who need it most
Time for a break!

When you return:
Time to workshop!
Part III

Time to Workshop!
Time to Workshop!

- Spend a few minutes and brainstorm activities that you are currently using in your classroom that promote self-regulation.
- Get together! Form a group of 4-5 with others around you.
- Share examples of activities you use in your classroom that promote self-regulation.
- Plan! Brainstorm NEW self-regulation activities that you can use in your classroom and share these ideas.
Switch!

- Move to create another group of 4-5.
- Share self-regulation activities from your own classrooms and activities that you created while in the last group.
- If there is time: brainstorm new ideas!
Part IV
Sharing and Conclusions
Whole Group

* In your small group, choose a few self-regulation activities to share with the large group.
So is self-regulation the answer?

Well…
Not entirely…what about…?

Family  Income  life disruptions
Special Needs  Culture  Siblings
language  Neighborhood Safety
Teacher education and experience
Nutrition  School  Resources
peers  parenting  POVERTY
Self-Regulation

One piece of the puzzle - a pretty big piece!
Not just that…

- Self-regulation moderates the effects of risk factors on children’s behavior
- Self-regulation predicts school success
- Self-regulation CAN be improved through practice
Next Steps…

✿ Common features of highly successful interventions:
  – Target children from low-income families
  – Well-qualified teachers
  – Parent involvement
Conclusion

By helping children develop and practice self-regulation in the early years, we can move toward the ultimate goal of helping all children enter school ready to learn.
Thank you!

Questions?

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