Self-regulation in the pre-school classroom: the role of classroom quality and play

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Background

• **Self-regulation**: a broad overarching concept involving the strategic use of attention, effort, and metacognitive and meta-emotional knowledge, and the ability to express thoughts and feelings in a clear and socially acceptable way (Fantuzzo Bulotsky-Shearer, McDermott, McWayne, & Frye, 2007; Whitebread et al., 2009; Zimmerman, 2000).

• **Core aspect of school readiness** (Blair & Diamond, 2008; Calkins & Williford, 2009) and predictive of academic achievement, social competence, and positive classroom behavior (Calkins & Williford, 2009, McClelland et al., 2000, 2006, 2007; Morrison, Ponitz, & McClelland, 2010; Raver et al., 2012; Rimmp-Kaufmann et al., 2009).
The role of contextual factors

- General classroom quality, including emotional support, classroom organization, and instructional support, beneficial for children’s self-regulation (Rimm-Kaufman et al., 2009; Weiland et al., 2013).

- Specifically emotionally supportive classrooms with highly sensitive teachers beneficial for emotional self-regulation (Merrit et al., 2012; Morris et al., 2013; Silva et al., 2011).

- Preschool curricula have also shown to be effective (Bierman et al., 2008; Domitrovich et al., 2007; Nix et al., 2013).
  - Particularly Tools of the Mind curriculum with focus on sociodramatic pretend play (Barnett et al., 2008; Diamond et al., 2007).
  - Likewise, other studies have shown that pretend play can contribute to self-regulation (Elias & Berk, 2002; Lillard, et al., 2013; Lindsey & Colwell, 2003; Nader-Grosbois & Vieillevoye, 2012; Vieillevoye & Nader-Grosbois, 2008).
Research questions

• What is the role of contextual factors in children’s observed self-regulation during play, controlling for child and classroom characteristics?
  – General classroom quality
  – More specific quality of pretend play
Participants

Subsample of longitudinal cohort study PreCOOL:

- 113 children of which 59 (52.2%) boys
- Age during observation $M = 37$ months, $SD = 3.5$ months, range = 28-45 months
- 71 monolingual Dutch children (62.8%)
- Setting: play in small groups with kitchen play materials
- Videotaped for 15 minutes
Self-Regulation in Play Scale (SRPS)

- Cognitive self-regulation ($\alpha=.73$):
  - *Metacognitive knowledge* (Pintrich, 2002; Whitebread et al., 2009)
  - *Metacognitive regulation* (Whitebread et al., 2009)
  - *Persistence* (Egeland et al., 1990)

- Emotional self-regulation ($\alpha=.78$):
  - *Knowledge of emotions* (Whitebread et al., 2009)
  - *Emotion regulation* (Eisenberg & Spinrad, 2004; Eisenberg & Sulik, 2012)
  - *Resolving conflicts* (de Haan & Singer, 2003; Singer & de Haan, 2004; CLASS, 2011)
  - *Behavioral self-control* (Kopp, 1982)

- Factor analysis confirmed two distinct, but moderately interrelated factors ($r=.32$)
  $\chi^2(4)=9.43$, $p=.05$; CFI=.95; SRMR=.04
Pretend play

• Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play (Smilansky & Shefatya, 1990) (α=.78):
  – *Role-play* captures the degree to which a child enacts a role by imitative action and/or verbalization, and the degree of persistence in role-play
  – *Make believe* reflects the level of object substitution use and verbal substitution of actions and situations
  – *Interaction* assesses the degree to which a child directs his words or actions to others in the play and the use of communication within the play episode (within-frame talk, or communication that is part of the play)
  – *meta-communication* which reflects the degree of outside-frame talk necessary to direct and sustain a satisfactory play episode
Scoring

- Scoring 1-5 rating scale:
  - Low: behavior does not occur during play
  - Mid: behavior occurs sometimes or behavior occurs when guided by teacher
  - High: behavior occurs frequently, without guidance by the teacher

- Separate observers for SRPS and pretend play scale to reduce shared-method variance

- Inter-observer reliability: ICC=.81/.76/.77
Children’s background measures

- Control measures: Age during test $M=28$ months, $SD=2.7$ months, range= 23-35 months (N=95)
  - Cool EF
    - Selective attention
    - Visuospatial short-term memory
    - Visuospatial working memory
  - Hot EF
    - Snack delay of gratification
    - Gift delay of gratification
- Receptive vocabulary PPVT
- Time between test and observation
- Age
- Home language
Classroom quality

- Classroom Assessment Scoring Systemt (CLASS) Toddler: 7-point rating scale with 1,2 (Low), 3,4,5 (Mid) and 6,7 (High)
  - *Emotional Support*: Positive Climate, Teacher Sensitivity, Regard for Child Perspectives
  - *Behavioral Support*: Negative Climate, *Behavior Guidance*
  - *Engaged support for learning*: Facilitation of learning and development, Quality of feedback, Language modeling

- Classroom level control variables:
  - Group size $M = 5.66$, $SD = 1.42$ range 3-10
  - Cultural classroom composition 1(0-10%) to 10 (91-100%) $M = 4.80$, $SD= 3.68$, range 1-5
Descriptives based on factor scores

- Cognitive SR
- Emotional SR
- Pretend play
### ECEC quality and observed self-regulation

<table>
<thead>
<tr>
<th>Age</th>
<th>Cognitive self-regulation</th>
<th>Emotional self-regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: -0.03, SE B: 0.02, β: -0.11†</td>
<td></td>
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<tr>
<td>Gender</td>
<td></td>
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<tr>
<td>B: #, SE B: #</td>
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<tr>
<td>Home language</td>
<td>0.18, 0.15, 0.10, -0.10, 0.22, -0.04</td>
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<tr>
<td>Time between wave 1 and 2</td>
<td>0.08, 0.03, 0.25***, 0.02, 0.03, 0.04</td>
<td></td>
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<tr>
<td>Cool EF</td>
<td>0.18, 0.15, 0.14, 0.66, 0.20, 0.34**</td>
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<tr>
<td>Hot EF</td>
<td>-0.27, 0.22, -0.14, -0.47, 0.29, -0.16</td>
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<tr>
<td>Vocabulary</td>
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<tr>
<td>Emotional support</td>
<td>0.11, 0.07, 0.08, #</td>
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<tr>
<td>Behavior guidance</td>
<td>0.05, 0.05, 0.06, -0.06, 0.09, -0.04</td>
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<td>Support for learning</td>
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<td>Group size</td>
<td>-0.05, 0.03, -0.08†, -0.11, 0.06, -0.12†</td>
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<td>Cultural classroom diversity</td>
<td>0.01, 0.01, 0.04, 0.03, 0.02, 0.08</td>
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***p < .001, * p < .05, † p < .10, # paths constrained to zero
Note 1: effects standardized to the total variance
Note 2: most variance on the child level; 5% of the variance can be explained at the Between level
Quality of pretend play and observed self-regulation

<table>
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<tr>
<th></th>
<th>Cognitive SR</th>
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<tr>
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<td>B</td>
<td>SE B</td>
<td>β</td>
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<tr>
<td>Age</td>
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<td>Time between test and observations</td>
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<td>Vocabulary</td>
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<tr>
<td>Hot EF</td>
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<td>.12</td>
<td>-.05</td>
<td>-.21</td>
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<td>Quality of pretend play</td>
<td>-.57</td>
<td>.09</td>
<td>.50***</td>
<td>.46</td>
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Conclusions

• General classroom quality not concurrently related to children’s observed cognitive or emotional self-regulation in play.
  – Effects of ECEC quality tend to be small (e.g. Burchinal et al., 2011; Zaslow et al., 2006), raising the question whether current quality measures are specific enough (Bryant, Burchinal, & Zaslow, 2010; Burchinal et al., 2011; Slot et al., under review; Zaslow et al., 2006).

• Quality of pretend play moderately related to observed cognitive self-regulation and to a lesser extent emotional self-regulation, which is in line with previous research (Barnett et al., 2008; Diamond et al., 2007; Elias & Berk, 2002; Lillard, et al., 2013; Lindsey & Colwell, 2003; Nader-Grosbois & Vieillevoye, 2012; Vieillevoye & Nader-Grosbois, 2008).
Implications

- Contextual factors may support children’s actual self-regulation behavior in the classroom.

- In view of enhancing school readiness, early childhood programs tend to focus increasingly on academic content, which can be at the expense of enhancing self-regulation through pretend play (Leseman & Slot, 2014).

- Instead teachers should be focused on supporting children in reaching higher levels of pretend play, role-play in particular, to create optimal learning and development opportunities (Bodrova, 2008; Whitebread & Sullivan, 2012).
Thank you for your attention!

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