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).

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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 (α=.73):
  - *Metacognitive knowledge* (Pintrich, 2002; Whitebread et al., 2009)
  - *Metacognitive regulation* (Whitebread et al., 2009)
  - *Persistence* (Egeland et al., 1990)

- Emotional self-regulation (α=.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)
  $x^2(4)=9.43$, p=.05; CFI=.95; SRMR=.04

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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

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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

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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
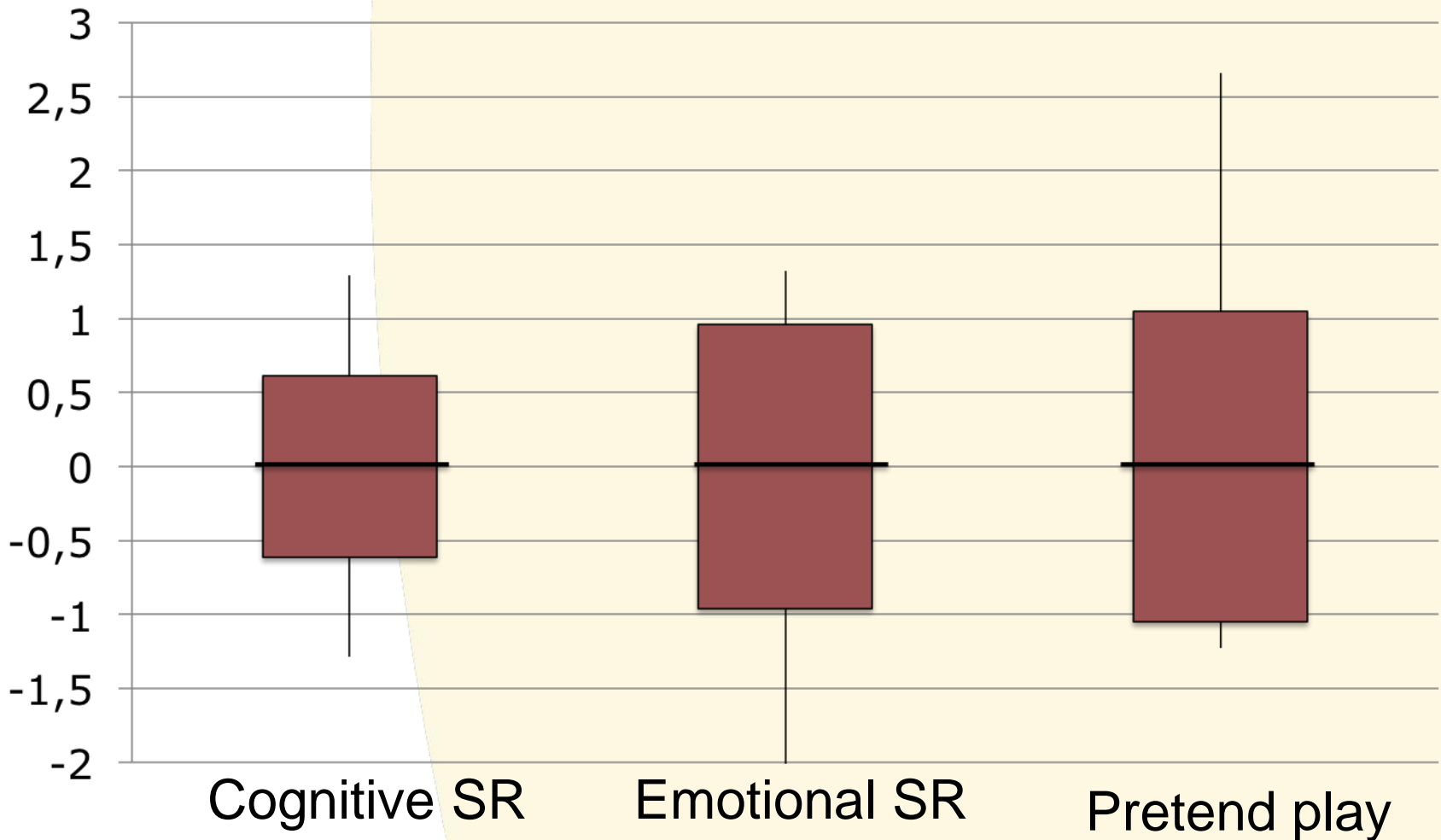 - Age
  - Home language
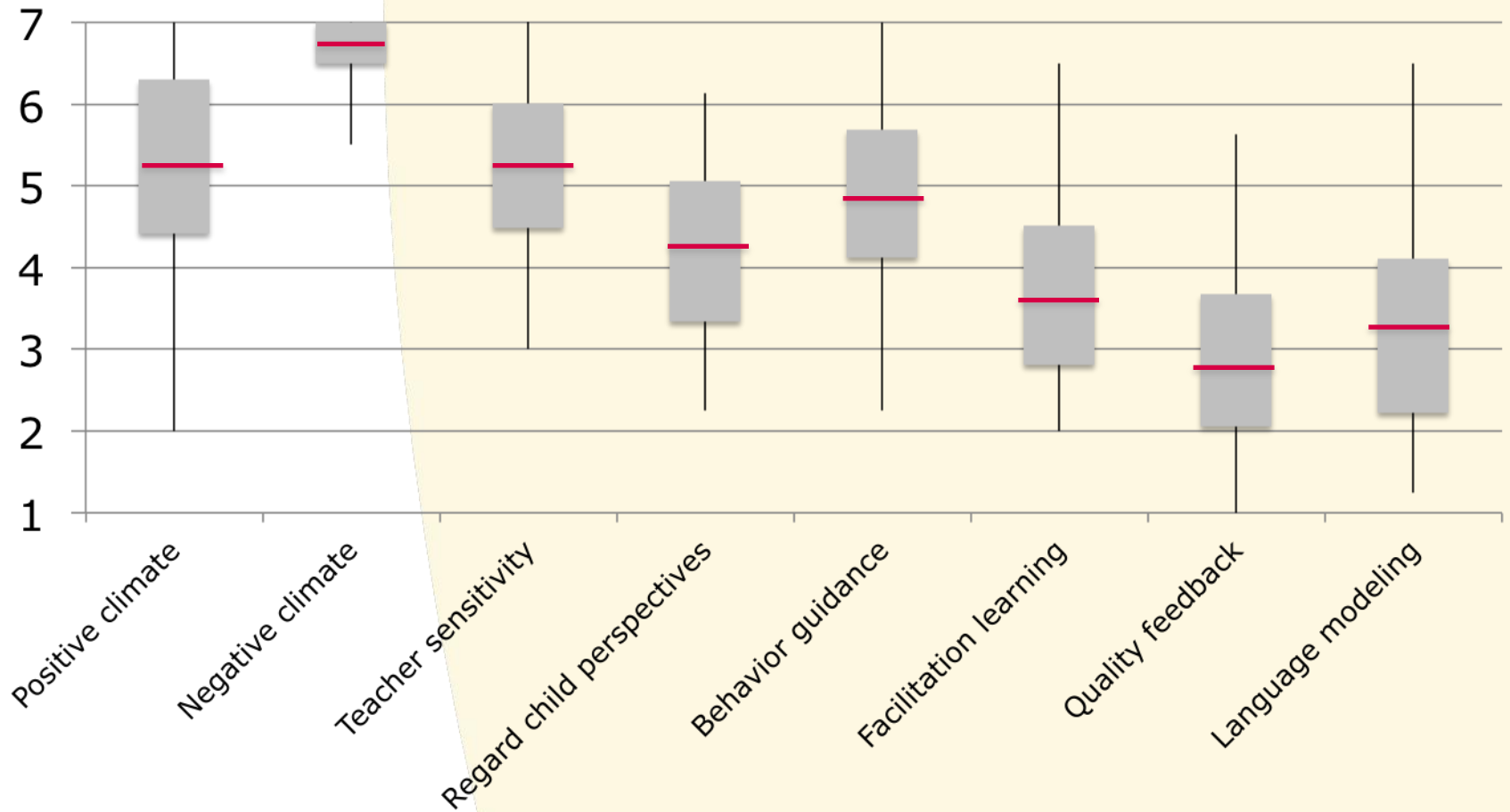
Classroom quality

- 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*: Facilition 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

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Descriptives based on factor scores

Cognitive SR   Emotional SR   Pretend play

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Descriptives CLASS

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ECEC quality and observed self-regulation

	Cognitive self-regulation			Emotional self-regulation		
	B	SE B	β	B	SE B	β
Age	-.03	.02	-.11†	#		
Gender	#			#		
Home language	.18	.15	.10	-.10	.22	-.04
Time between wave 1 and 2	.08	.03	.25***	.02	.03	.04
Cool EF	.18	.15	.14	.66	.20	.34**
Hot EF	-.27	.22	-.14	-.47	.29	-.16
Vocabulary	.42	.22	.17†	-.23	.25	-.06
Emotional support	**.11**	**.07**	**.08**	**#**		
Behavior guidance	**.05**	**.05**	**.06**	**-.06**	**.09**	**-.04**
Support for learning	**.02**	**.05**	**.02**	**.02**	**.11**	**.01**
Group size	*-.05*	*.03*	*-.08†*	*-.11*	*.06*	*-.12†*
Cultural classroom diversity	.01	.01	.04	.03	.02	.08

*** 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

	Cognitive SR			Emotional SR		
	B	*SE B*	β	*B*	*SE B*	β
Age	.01	.02	.07	.06	.03	.21†
Home language	#			#		
Time between test and observations	#			#		
Vocabulary	.29	.21	.16	-.07	.03	-.20*
Cool EF	#			.47	.22	.33*
Hot EF	-.07	.12	-.05	-.21	.30	-.10
Quality of pretend play	**-.57**	**.09**	**.50*****	**.46**	**.18**	**.26***

*** $p < .001$, * $p < .05$, ,† $p < .10$, # paths constrained to zero

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).

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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).

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Thank you for your attention!

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