

Effects of Dutch ECEC quality on children's self-regulation development between age two and three years

> Pauline Slot Hanna Mulder Paul Leseman



Universiteit Utrecht

Background

- Self-control: ability to suppress a dominant response in order to perform a subdominant response (Kochanska, Murray, & Harlan, 2000).
- Self-control related to conscience, empathy, emotion regulation, theory of mind, problem behavior, and academic skills (Blair & Razza, 2007; Kochanska et al., 2000; Kochanska & Knaack, 2003; Kochanska, Murray, & Coy, 1997; Rothbart, Ahadi, & Hershey, 1994). With even long term effects on adult psychological, behavioral, health, and economic outcomes (Mischel et al., 2011; Moffitt et al., 2011).





Self-control and the role of social context

- Self-control: relative stable temperamental basis (Kochanska & Knaack, 2003), also role of environment
- Role of parenting: maternal responsiveness (Kochanska et al., 2000) and child-rearing style (Kochanska & Knaack, 2003)
- Role of early childhood education and care settings (ECEC): close teacher-child relationship positively related to children's effortful control (Silva et al., 2011)
- Lack of studies into relationship self-control and ECEC quality



Research questions

- What is the relationship between ECEC quality and children's self-control development, measured with neuropsychological tests, from age two to three years?
 - Hypotheses: specifically Emotional and Behavioral support
 - Large sample from cohort study (N=924)
- What is the concurrent relationship between ECEC quality and three-year old children's observed self-control?
 - Subsample of 113 children





1. Longitudinal cohort study

- 924 children of which 51.5% boys and 73% monolingual Dutch children.
- Wave 1: age <u>M=28 months</u>, <u>SD=3.0</u> (20-37 months)
- Wave 2: age <u>M=42 months</u>, <u>SD=2.7</u> (34-49 months)
- Self-control: 2 delay of gratification tasks at both waves
- Covariates: gender, age, home language, time between wave 1 and 2





Self-control measures

- Wave 1:
 - Snack delay (raisin)
 - Gift delay
- Wave 2:
 - 2 Gift delay tasks
- Delay time: 1 minute
- Scoring: pass/fail



'Try not to touch the present/raisin'

Latent construct combining both tasks





Classroom quality

- Classroom Assessment Scoring Systemt (CLASS) Toddler: 7-point Ratingscale 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



Descriptives CLASS



ECEC quality and wave 2 self-control

| | В | SE B | β |
|---------------------------|-----|------|--------|
| Within level | | | |
| Self-control wave 1 | .07 | .02 | .15*** |
| Gender | .06 | .02 | .14*** |
| Age | # | | |
| Home language | .04 | .03 | .09 |
| Time between wave 1 and 2 | .01 | .00 | .08* |
| Between level | | | |
| Emotional support | # | | |
| Behavioral support | .03 | .02 | .07+ |
| Support for learning | 02 | .01 | 07+ |

 $x^{2}(6)=.50$, p=.998, RMSEA=.00, CFI=1.00, SRMR_{within/between}=.01/.01 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



2. Video observation study

- Rating scales on cognitive and emotional self-regulation with scores ranging from Low (1) to High (5).
- Setting: play in small groups (4-10 children, M=6) with kitchen play materials
- 15 minutes





Observed Self-control

- Self-control: ability to meet behavioral expectations (Kopp, 1982), such as sharing toys, waiting for a turn.
 - Scoring:
 - 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
- Inter-observer reliability -> 84% agreement





Descriptive statistics

- 113 children of which 59 (52.2%) boys
- Age at observation M=37 months, SD=3.5 months, range=28-45 months (N=113)
- 71 monolingual Dutch children (62.8%)
- Observed self-control M=3.54, SD=1.04, range=1-5
- Correlation with hot EF wave 1: r=.22, p<.05





SEM model CLASS and observed Selfcontrol

- Three separate models of Emotional support, Behavioral support and Engaged support for learning
- -> no effects of classroom quality on observed self-control
- However, exploratory analyses with the CLASS dimensions revealed:
- Positive effects of
 - Positive climate (beta=.34)
 - lack of Negative climate (beta=.21)
 - Language modeling (beta=.28)
- Negative effect of Quality of feedback (beta=-.22)

Note: almost 8% of the total variance can be explained by the Between level



Conclusions

- Small associations between ECEC quality and children's self-control
 - Role of other (environmental) factors?
 - Self-control more a trait like construct (Kochanska & Knaack, 2003)?
- Small associations with ECEC quality found for <u>observed</u> self-control
 - Positive associations between emotional and behavioral quality aspects and self-control
- Explanation?
 - Hot EF and observed self-control moderately correlated, in line with a meta-analysis of different self-control measures (Duckworth & Kern, 2011). However, self-control as observed concerns broader construct incl. prosocial behavior (sharing toys) and activating and modulating behavior rather than inhibiting behavior



Future directions

- Developmental trends of both observed self-control and test-based self-control in view of predictive value in children's social-emotional development and school readiness skills.
- Longitudinal effects of ECEC quality on children's development of self-control
 - More specific aspects of ECEC quality





Thank you for your attention!

contact: p.l.slot@uu.nl





Universiteit Utrecht