

The Reliability and Validity of CLASS in Finnish Kindergartens

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CLASS

■ Key findings

- a widely used observational tool in the US classrooms
- Strong theoretical and empirical background
- Evidence on the three-factor solution (e.g., Hamre et al., 2013)

■ However...

- So far we know very little about the use of CLASS in European contexts although there's an evident need for finding a valid and reliable tool for assessing the quality



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CLASS Pre-K

Emotional Support

1. Positive Climate
2. Negative Climate
3. Teacher Sensitivity
4. Regard for Student Perspectives

Classroom organization

1. Behavior Management
2. Productivity
3. Instructional Learning Formats

Instructional Support

1. Concept Development
2. Quality of Feedback
3. Language Modeling

How do teachers help students

- Develop warm supportive relationships with teachers and peers

- Develop skills to regulate their own behavior
- Maintain interest in learning activities

- Learn to solve problems and think creatively
- Develop more complex language abilities



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Aims of the Study

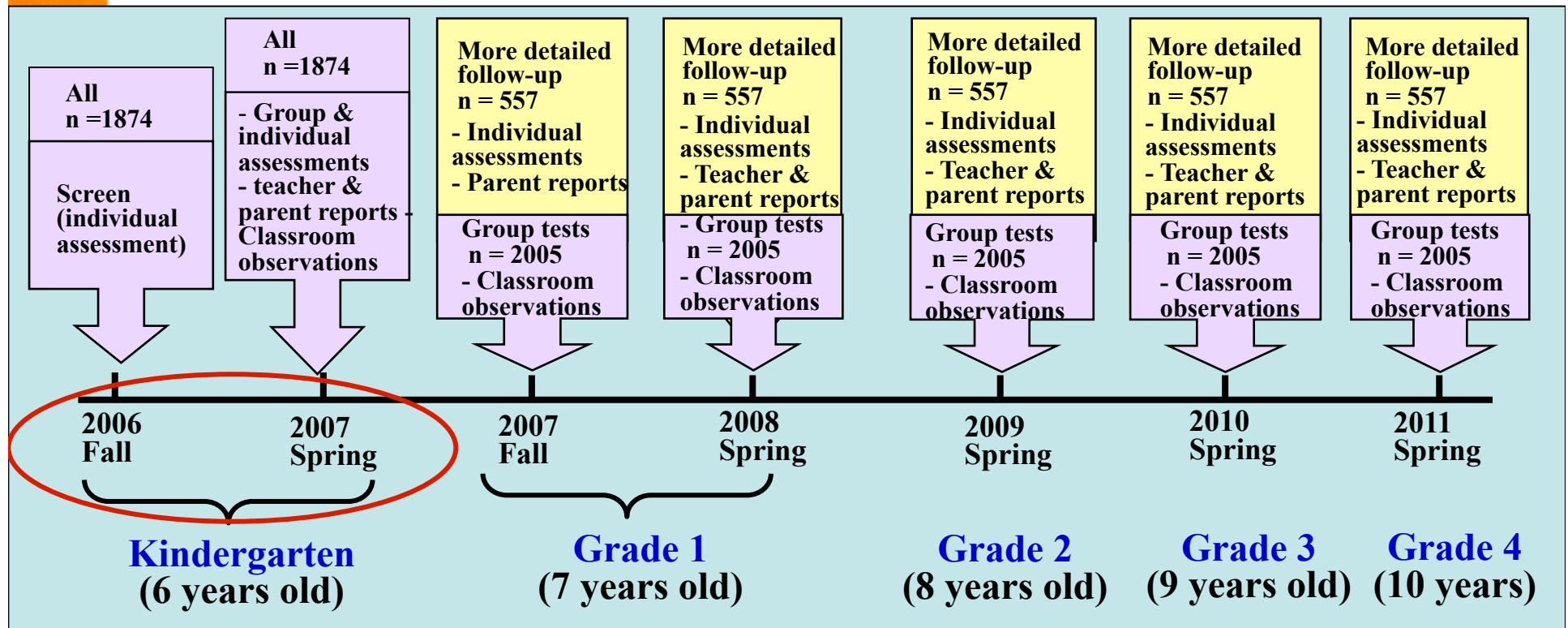
- To examine the validity and reliability of the Classroom Assessment Scoring System (CLASS Pre-K; Pianta, La Paro, & Hamre, 2008) in Finnish kindergartens
- To examine the extent to which the observed quality of teacher–child interactions is associated with children’s academic, motivational and social outcomes (predictive validity)



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Design of the First Steps follow-up 2006 - 2011



Participants: the whole age cohort from three municipalities and half of the age cohort from one municipality.

Kindergarten year:

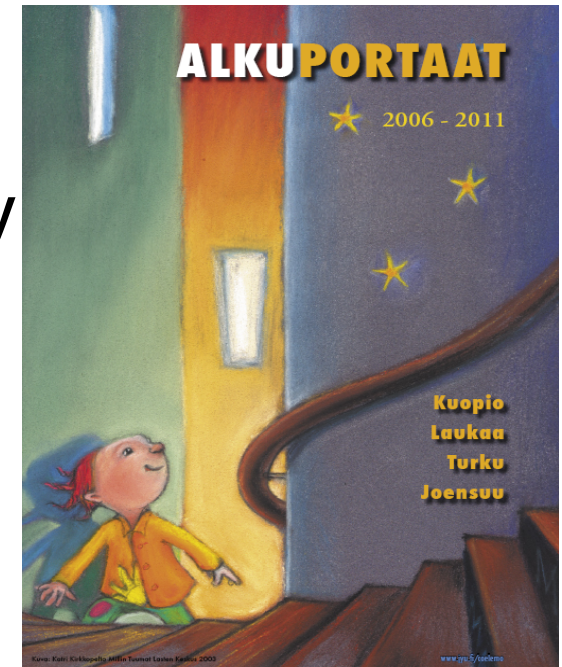
- 1874 children
- 187 groups
- 217 teachers (49 in observations)
- 1572 mothers
- 1114 fathers



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Participants

- 49 kindergarten teachers (47 female, 2 male) out of 137 participated in classroom observations in spring 2007
- Those who participated on voluntary basis in observations did not differ significantly from the others
- Homogeneous educational background and typically long working experience (*Mode* = more than 15 years)



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Procedure

- 49 kindergarten classrooms were observed on two different days (3 hours per day) by a pair of observers (always two coders present)
- CLASS** (in 30 min cycles, 5 cycles per day) and **ECCOM** (Stipek & Byler, 2004; total score after 3h observation) were used on the same days
- 17 trained observers in total
- Inter-rater reliabilities of CLASS were excellent (ICCs varied .80-.94)
- CLASS scores were aggregated within cycles, two observers, and two separate observation days for further analyses
- Teachers also filled in questionnaires



Means and Standard Deviations for CLASS Dimensions in Finnish and US Samples

	First Steps		NCEDL ²		NICHD-SECCYD ²	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Emotional Support						
Positive climate	5.31	(.83)	5.15 (.75)		5.37 (1.25)	
Negative climate	1.21	(.38)	1.54 (.65)		1.58 (1.04)	
Teacher sensitivity	5.34	(.74)	4.67 (.86)		---	
Regard for student' perspectives	4.74	(.82)	---		---	
Classroom organization						
Behavior management	5.45	(.85)	5.20 (.79)		---	
Productivity	5.67	(.45)	4.67 (.74)		---	
Instructional learning formats	4.89	(.67)	4.12 (.85)		---	
Instructional support						
Concept development	3.76	(.85)	2.12 (.74)		---	
Quality of feedback	3.89	(1.04)	1.85 (.64)		3.23 (1.48)	
Language modeling	4.27	(.86)	---		---	

Note. Each scale ranges from 1 to 7 points

*Note*² Hamre et al., 2007; Pianta et al., 2008

Pakarinen, E., Lerkkanen, M.-K., Poikkeus, A.-M., Kiuru, N., Siekkinen, M., Rasku-Puttonen, H., & Nurmi, J.-E. (2010). A validation of the Classroom Assessment Scoring System in Finnish kindergartens. *Early Education and Development*, 21, 95–124.



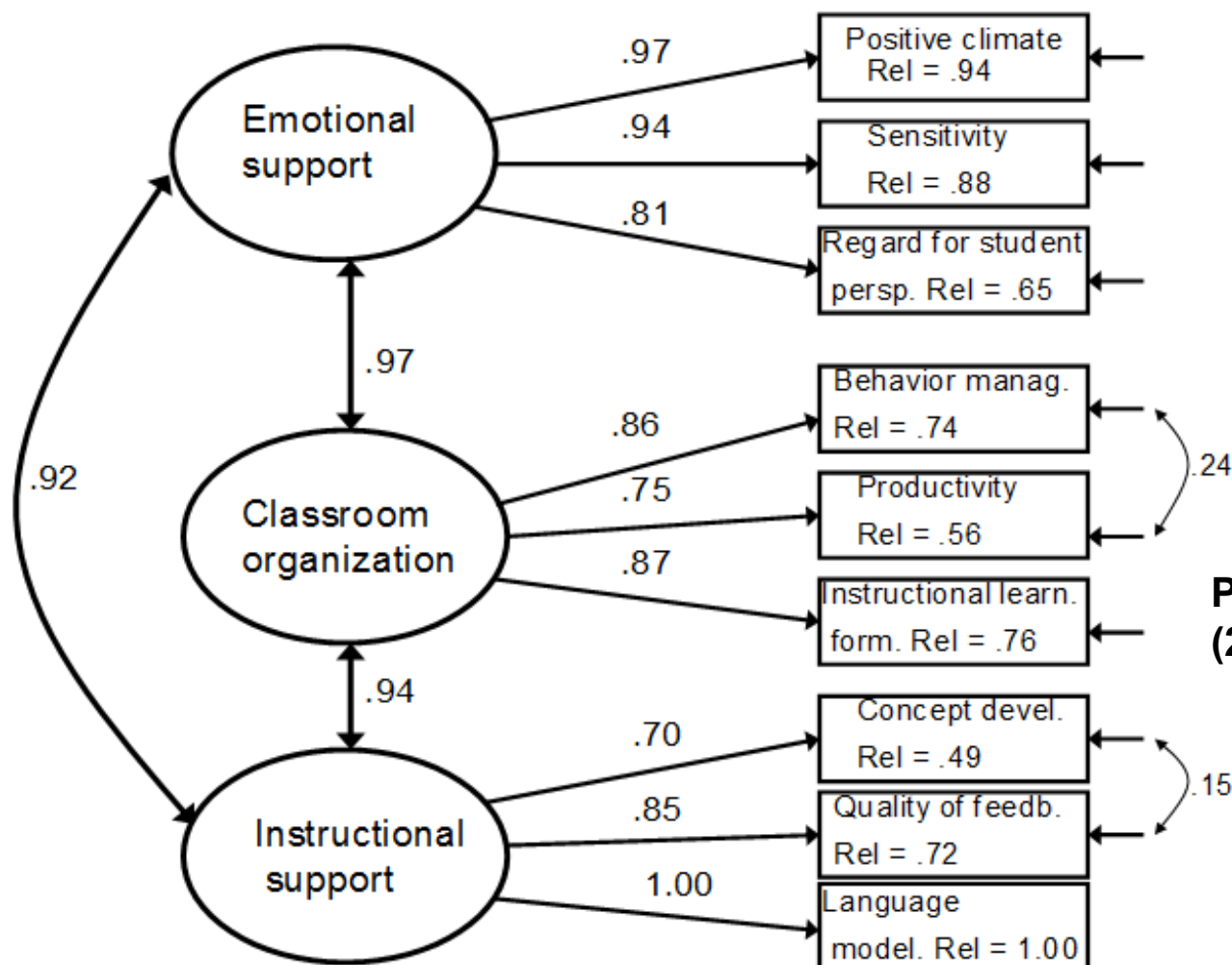
Results: Factor structure

- The validity and reliability of CLASS in Finnish kindergartens were examined by using confirmatory factor analysis (CFA)
- Closely similar 3-factor structure as found in the US. Negative climate - item was omitted due to low discriminant validity
- Although the three factors correlated highly with each other, 3-factor solution was better than 1-factor solution



Final Three-Factor Model

The results of confirmatory factor analysis showed that the three-factor solution assuming three positively correlated factors described the classroom quality well when the Negative Climate item was omitted from the model.



**Pakarinen et al.
(2010)**



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$\chi^2(23) = 45.16, p = .004; CFI = 0.96; TLI = 0.94; RMSEA = 0.14; SRMR = 0.04$



Results: Concurrent validity

Correlations between CLASS and ECCOM scales

	Teaching practices (ECCOM)	
	Child-centered	Teacher-directed
Emotional support	.81***	-.80***
Classroom organization	.76***	-.70***
Instructional support	.66**	-.67**



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Results: Concurrent validity

Correlations between CLASS scales and self-rated affection and efficacy beliefs

	Teacher ratings	
	Affection	Efficacy beliefs
Emotional support	.29**	.23*
Classroom organization	.20*	.11
Instructional support	.10	.13

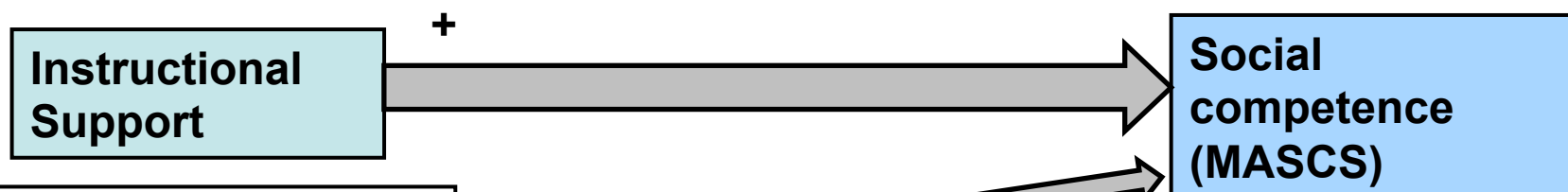
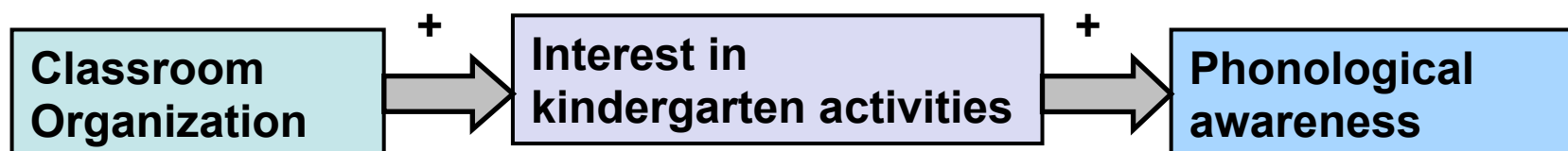
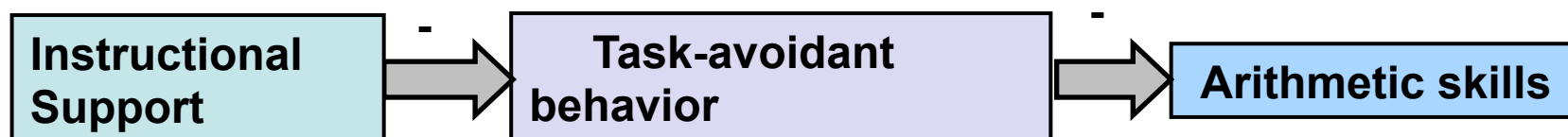


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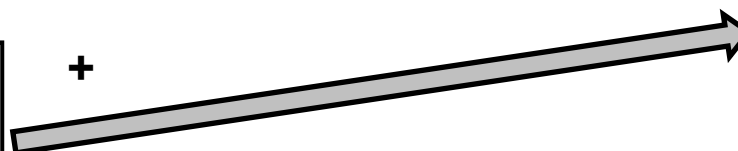
Results: Predictive validity



CLASSROOM QUALITY MOTIVATION OUTCOMES



Combination of positive climate, instructional learning formats, concept development, language modeling



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Conclusions

- The CLASS is a valid and reliable tool for investigating teacher–child interactions also in Finnish kindergartens
- Some evidence on the predictive validity: quality of teacher–child interactions was related to children’s learning motivation, achievement behaviors, and social competence



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Limitations and Future Directions

- Small sample size (selectivity)
- Variability between cycles and between days \Rightarrow what kind of meaning for child adjustment?
- Cross-domain associations with child outcomes (different combinations of CLASS items)?
- More nuanced analyses are needed (what kind of teacher practices are behind the quality scores)



Thank you!

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