Observing Teacher-Child Interactions Using the CLASS Pre-K in German Preschool Classrooms

Antje von Suchodoletz\textsuperscript{a,b}, Anika Fäsche\textsuperscript{a}, Catherine Gunzenhauser\textsuperscript{a,c} and Bridget K. Hamre\textsuperscript{d}

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\textsuperscript{a}University of Freiburg, Germany  
\textsuperscript{b}New York University Abu Dhabi, UAE  
\textsuperscript{c}Saarland University, Germany  
\textsuperscript{d}University of Virginia, USA
Study Aims

- Extend existing research on the quality of early childhood education programs in Germany using a relatively new measure, the Classroom Assessment Scoring System CLASS Pre-K
- Examine factors that may contribute to quality
The German Preschool Context

- compulsory formal education starts around the age of six
- early child care and education: free play dominates
- attendance rate:
  - 20% of children under the age of three
  - 92% of all 3- to 6-year old children
- no homogeneous preschool teacher training program
Theoretical Background

- Interactive and contextual nature of development and learning
  (Bronfenbrenner & Morris, 1998; Vygotsky, 1978)
- Teacher-child-interactions as primary mechanisms through which children learn in classrooms
  (Curby et al., 2009)
- Teaching through Interaction framework
  (Hamre et al., 2013)
Teaching through Interaction Framework
(Hamre et al., 2013)

Classroom Quality

- Emotional Support
  - warm and supportive relationships
  - feelings of comfort in the classroom
  - appropriate levels of autonomy

- Classroom Organization
  - maintain interest in learning
  - manage instructional time and routines
  - prevent and redirect misbehavior

- Instructional Support
  - promote students' higher-order thinking
  - extend students' learning through feedback
  - encourage students' language use

Contact: avs5@nyu.edu   URL: http://www.empedu.uni-freiburg.de
The Present Study

(1) Structure of the CLASS Pre-K
(2) Quality across the preschool day
(3) Predictive validity of the CLASS Pre-K
Sample

- 63 teachers from classrooms in 26 preschools in Freiburg

- Cluster size: 2.4 teachers per preschool
- Teacher age: $M_{\text{age}} = 36$ years, $SD_{\text{age}} = 9.72$
- Average class size: 21 children, 50% of children being boys
- All classrooms were monolingual German

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Measures

- **Spring 2012: CLASS Pre-K**
  (Pianta, La Paro, & Hamre, 2008)
  - 4 observation cycles; on average 18 min per cycle
    \( M = 18.21, \) \( SD = 1.87 \)
  - double coding in 15% of the classrooms: ICCs between .67 and .82

- **Spring 2013: Student-Teacher Relationship Scale STRS**
  (Pianta, 2001; German Version Mayr, 2012)
  - 44 items, e.g., *If upset, this child will seek comfort from me.*
  - 3 scales: closeness, conflict, and dependency
(1) Structure of the CLASS

3-domain structure
- Emotional Support
- Classroom Organization
- Instructional Support

2-domain structure
- Social Support
- Instructional Support

1-domain structure
- Effective Teaching

Contact: avs5@nyu.edu URL: http://www.empedu.uni-freiburg.de
(1) Structure of the CLASS - Results

Table 1. Fit Statistics of the Different CFAs

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>CFI</th>
<th>RMSEA</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Effective teaching</td>
<td>89.91***</td>
<td>35</td>
<td>.85</td>
<td>.16</td>
<td>.07</td>
</tr>
<tr>
<td>2. Social and instructional support</td>
<td>66.41***</td>
<td>34</td>
<td>.91</td>
<td>.12</td>
<td>.06</td>
</tr>
<tr>
<td>3. Teaching through interactions</td>
<td>56.94**</td>
<td>32</td>
<td>.93</td>
<td>.11</td>
<td>.06</td>
</tr>
</tbody>
</table>

Note. ** $p < .01$. *** $p < .001$.  
The pattern of results was replicated in multilevel analyses.  
(Suchodoletz, Fäsch, Gunzenhauser, & Hamre, 2014, Early Childhood Research Quarterly)
(1) Structure of the CLASS - Results

- Emotional Support
- Classroom Organization
- Instructional Support

3-domain structure
(2) Quality Across the Day - Results

Table 2. Descriptive Statistics for the CLASS Pre-K

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive climate</td>
<td>5.38</td>
<td>0.95</td>
<td>0.82</td>
<td>2-7</td>
</tr>
<tr>
<td>Negative climate</td>
<td>6.02</td>
<td>0.27</td>
<td></td>
<td>6-7</td>
</tr>
<tr>
<td>Teacher sensitivity</td>
<td>5.04</td>
<td>0.89</td>
<td></td>
<td>2-7</td>
</tr>
<tr>
<td>Regard for student</td>
<td>4.86</td>
<td>0.90</td>
<td></td>
<td>3-7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Classroom organization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior management</td>
<td>5.30</td>
<td>0.99</td>
<td>0.81</td>
<td>3-7</td>
</tr>
<tr>
<td>Productivity</td>
<td>4.92</td>
<td>1.10</td>
<td></td>
<td>2-7</td>
</tr>
<tr>
<td>Instructional learning formats</td>
<td>4.23</td>
<td>0.97</td>
<td></td>
<td>2-6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Instructional support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concept development</td>
<td>2.17</td>
<td>0.78</td>
<td>0.83</td>
<td>1-4</td>
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<tr>
<td>Quality of feedback</td>
<td>2.52</td>
<td>0.81</td>
<td></td>
<td>1-5</td>
</tr>
<tr>
<td>Language modeling</td>
<td>2.73</td>
<td>0.76</td>
<td></td>
<td>1-4</td>
</tr>
</tbody>
</table>
(2) Quality Across the Day - Results

- Within-morning variability in CLASS Pre-K scores (Suchodoletz, Fäsche, Gunzenhauser, & Hamre, 2014, Early Childhood Research Quarterly)
(2) Quality Across the Day - Results

- Teacher, classroom, and program features related to within-morning variability in CLASS Pre-K scores:
  - **Teacher-child ratio** was negatively associated with the intercept and slope of *Emotional Support*
  - **Program structure** (i.e., length of the school day) partially explained the decline of *Instructional Support*
Table 3. Correlations between CLASS Pre-K Scores and Teacher-rated Relationships with Students (STRS)

<table>
<thead>
<tr>
<th>STRS</th>
<th>CLASS Pre-K</th>
<th>Emotional Support</th>
<th>Classroom Organization</th>
<th>Instructional Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closeness</td>
<td>-.03</td>
<td>-.02</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>Conflict</td>
<td>-.25**</td>
<td>-.28**</td>
<td>-.11</td>
<td></td>
</tr>
<tr>
<td>Dependence</td>
<td>-.28**</td>
<td>-.25**</td>
<td>-.11</td>
<td></td>
</tr>
</tbody>
</table>

Notes. **p < .01.
Conclusions

Structure and Validity of the CLASS Pre-K
- Teaching through Interaction framework reflects the reality of teacher-child interactions in German preschool classrooms
- preliminary evidence for three-domain structure and validity of CLASS Pre-K ratings

Classroom Quality
- variability classroom quality
- only few high-quality classrooms
- decrease in quality over the morning
Practical Implications

- CLASS Pre-K can be used as an instrument to evaluate classroom quality in Germany.
- Providing additional international examples and training videos might help to improve the CLASS Pre-K training and make it a better fit for international use.
- Professional development/interventions need to include the promotion of high-level instructional support.