Making children ready for school
A German example for the cooperation between research, policy, and practice

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Education in kindergarten: Starting position in Germany

• One of the biggest problems in the educational system in Germany: large heterogeneity in school-related skills and abilities at school entry

• About 20% of the children are not ready to go to school
  • delayed language development
  • low levels of literacy as well as math precursors
  • problems to concentrate

→ high probability to fail already in the first years of schooling
Project „School Prepared Child“ in the German state Baden-Württemberg

• Basic ideas:
  • Identification of children at risk 1 ½ years before school entry
  • Focussed compensatory training to children at risk for poor educational outcome to achieve school readiness for all children at the end of the kindergarten

• Aim:
  • Successful transfer of the additional support to children’s acquisition of reading, spelling, and math in elementary school
Implementation

- Main steps
  - Early examination of the child’s developmental progress in school-relevant skills
  - „Round Tables“ of experts decide whether additional compensatory support should be given to an individual child
  - Focused additional compensatory support in small groups is provided during the last kindergarten year
Implementation
Round Tabels

- Close cooperation between educational professionals and parents
Implementation
Main focus of support

- language development
- phonological awareness
- basic math skills
- concentration skills
Research question

(1) Does the additional compensatory support in small groups during the children’s last year before school entry contribute to develop sufficient levels of school relevant precursor skills?

(2) Is the probability of school readiness for children at risk enhanced by the project implementation?

(3) Are there transfer effects of the additional compensatory support on the acquisition of reading skills and mathematics during the first year of schooling?
Method

Sample

- 754 children from 65 different kindergartens participating in the federal state programme
- All children’s compulsory school entry was September 2009
- Mean age at t1 (spring 2008): 4 years, 9 months
- Additional compensatory support was provided to 195 of the participating children (26%)
Overview of measurement points (t1 to t6)

<table>
<thead>
<tr>
<th>spring ´08</th>
<th>autumn ´08</th>
<th>summer ´09</th>
<th>autumn ´09</th>
<th>summer ´10</th>
<th>summer ´11</th>
</tr>
</thead>
<tbody>
<tr>
<td>t1</td>
<td>t2</td>
<td>t3</td>
<td>t4</td>
<td>t5</td>
<td>t6</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>Grade 1</td>
<td>Grade 2</td>
<td>baseline assessment of learning situation</td>
<td>Academic performance</td>
<td>Academic performance</td>
</tr>
</tbody>
</table>

Assessment of children’s precursor skills interviews with parents and teachers
Method
achievement assessment

• Assessment in kindergarten:
  • vocabulary
  • sentence repetition
  • phonological awareness
  • basic math skills

• Assessment in school
  • reading
  • math
Classification

• Children at Risk (Risk):
  
  T-values < 40 at t1 and/or t2 in two of the four assessed school-relevant skill areas (language, phonological awareness, early math skills, concentration)

• Children allocated to additional compensatory support (ACS)
Sample Distribution

<table>
<thead>
<tr>
<th>At RISIK</th>
<th>Additional Compensatory Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>yes: 10%</td>
</tr>
<tr>
<td></td>
<td>no: 7%</td>
</tr>
<tr>
<td>no</td>
<td>yes: 16%</td>
</tr>
<tr>
<td></td>
<td>no: 67%</td>
</tr>
</tbody>
</table>
## Results

### Development in kindergarten

<table>
<thead>
<tr>
<th></th>
<th>t1</th>
<th></th>
<th>t2</th>
<th></th>
<th>t3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACS no</td>
<td>ACS yes</td>
<td>ACS no</td>
<td>ACS yes</td>
<td>ACS no</td>
<td>ACS yes</td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>vocabulary</td>
<td>26.6 (8.0)</td>
<td>20.8 (9.5)</td>
<td>27.7 (7.2)</td>
<td>23.3 (8.4)</td>
<td>30.9 (5.0)</td>
<td>27.4 (6.6)</td>
</tr>
<tr>
<td>Sentence repetition</td>
<td>6.6 (2.4)</td>
<td>5.2 (2.6)</td>
<td>7.3 (2.2)</td>
<td>5.7 (2.6)</td>
<td>8.1 (1.8)</td>
<td>6.6 (2.2)</td>
</tr>
<tr>
<td>phonological awareness</td>
<td>5.6 (3.6)</td>
<td>3.4 (3.8)</td>
<td>6.6 (3.5)</td>
<td>4.5 (3.7)</td>
<td>8.1 (2.6)</td>
<td>7.0 (3.2)</td>
</tr>
<tr>
<td>basic math skills</td>
<td>18.3 (6.9)</td>
<td>14.6 (7.3)</td>
<td>21.7 (6.4)</td>
<td>18.6 (8.4)</td>
<td>26.3 (3.6)</td>
<td>24.9 (4.2)</td>
</tr>
</tbody>
</table>
Results
School entry

- rate of children with delayed school entry: 10.3 % (n = 81)
- Postponement from regular school entry did not differ between those with or without additional compensatory support:

<table>
<thead>
<tr>
<th>Additional Compensatory Support</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>58 (10.5%)</td>
</tr>
<tr>
<td>Yes</td>
<td>23 (9.9%)</td>
</tr>
</tbody>
</table>
• Higher rate of postponement from regular school entry in the group of children with no additional support ($\chi^2 = 4.0, p < .05$).
## Results

reading and math achievement at the end of Grade 1

<table>
<thead>
<tr>
<th>Additional Compensatory Support</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>poor reading and poor math</td>
<td>5.5 %</td>
<td>14.3 %</td>
</tr>
<tr>
<td>either poor reading or poor math</td>
<td>20.2 %</td>
<td>29.9 %</td>
</tr>
<tr>
<td>neither reading nor math problems</td>
<td>74.2 %</td>
<td>55.8 %</td>
</tr>
</tbody>
</table>
Conclusion and Discussion

- ACS has positive effects on the development of school relevant precursor skills during the last year before school entrance
- ACS enhances the probability of being identified as a school ready child for children at risk (in the sense we defined it)
- The question whether ACS will produce long-term transfer effects on school achievement remains an open question (not at least because of missing adequate controls)
- A short term coaching of the compensatory support teachers increased the effect sizes significantly
Thanks to the Team

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**Frankfurt:**
German Institut for International Educational Research (DIPF)
Marcus Hasselhorn, Hanna Wagner & Jan-Henning Ehm
1 ½ years before the start of compulsory entry in elementary school

- **End of March**
  - Child is introduced at school

- **April / May**
  - Assessment of school relevant skills

- **June**
  - **school**
  - **Special advice teacher**
  - **Parents**
  - Round tables
  - Early education center
  - Kindergarten
  - Health office
  - Offer for children with need of support

- **September to June next year**
  - **Kindergarten**
  - Preventive groups

- **April / May**
  - School registration

- **August**
  - School entry

**Process from examination to school enrolment**