School Mobility and Educational Success: A Research Synthesis and Evidence on Prevention

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Board on Children, Youth, and Families
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Percent of 4th Graders at Basic or Above on NAEP Reading Test, 2000

- No moves: 66%
- 1 move: 53%
- 2 moves: 46%
- 3+ moves: 36%
<table>
<thead>
<tr>
<th>Model</th>
<th>Baltimore</th>
<th>Chicago</th>
</tr>
</thead>
<tbody>
<tr>
<td>No adjust.</td>
<td>-13.5</td>
<td>-2.48</td>
</tr>
<tr>
<td>Full model</td>
<td>-5.62</td>
<td>-1.34</td>
</tr>
<tr>
<td>% reduction</td>
<td>58%</td>
<td>54%</td>
</tr>
<tr>
<td>SD full model</td>
<td>-0.11</td>
<td>-0.07</td>
</tr>
<tr>
<td>Grade</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>N; BSS, CLS</td>
<td>427</td>
<td>1,087</td>
</tr>
</tbody>
</table>
Presentation

1. Meta-analysis of research since 1990

2. Focus on school dropout

3. School reform intervention example

4. Next steps
Why Synthesis?

Examine consistency across studies

Increase generalizability

Address fragmentation of literature

Growth in research

Span of K-12 not examined
Meta-Analysis

16 studies identified 1990-2008

Measured school moves, K-high school

Reading, math, or school dropout

Measured pre-mobility achievement
Selection Results

26 studies excluded primarily due to achievement criterion

Other outcome domains not assessed

Dropout not focus of previous analysis
Study Descriptives

5 of national samples (NELS, NLSAH)
9 of mixture of areas (Chicago, Seattle, Baltimore, Texas, New York City)
2 of Head Start graduates in Indiana

12 on achievement, 5 dropout

Response rates from 62-90%+
Mobility Measures

Mixtures of reports: 9 school records, 7 parent or students
4 compared elementary vs. high school
4 examined school vs. home moves
13 cumulative measures over grades
10 non-normative moves (Nn)
5 had 3+ year interval between last move and outcome
Covariates and Models

N of covariates: 3 to 29; achiev, family, child, and school factors
8 studies 3 of 4 categories of achiev, parent ed, SES, & family structure;
4 studies included all.
10 included potential mediators in assessing mobility effects
2 studies investigated mediators
Outcome Measures

Iowa Tests of Basic Skills
California Achievement Tests
Woodcock-Johnson Achievement
Student reports of dropout or not earning diploma, grade 8-14
School records of not completing high school supplemented by youth
Predictors of Mobility

Most Consistent
- Prior achievement/GPA
- Parent education and SES
- Family structure

Others
- Parent perceptions of mobility impact
- School-level moves
- Residential moves
- School characteristics
Effect Sizes

SD units (d)

Inverse variance weight applied

Dropout studies converted to d via probit or tetrachoric method

Variability in effect sizes assessed
Adjusted Mean Effect Sizes (SD units)

- Low reading: 0.07
- Low math: 0.08
- Dropout: 0.10
- Each move: 0.21
- 3+ moves: 0.23
# Reading Impacts by Grade

<table>
<thead>
<tr>
<th>Group</th>
<th>No weight</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary (19)</td>
<td>-.47</td>
<td>-.35</td>
</tr>
<tr>
<td>Middle (5)</td>
<td>-.16</td>
<td>-.18</td>
</tr>
<tr>
<td>High School (13)</td>
<td>-.23</td>
<td>-.23</td>
</tr>
<tr>
<td>Indicator</td>
<td>Each move</td>
<td>Overall</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>Mean</td>
<td>-0.10</td>
<td>-0.28</td>
</tr>
<tr>
<td>Median</td>
<td>-0.10</td>
<td>-0.30</td>
</tr>
<tr>
<td>Pct. points</td>
<td>-2 to 3%</td>
<td>-7 to 8%</td>
</tr>
</tbody>
</table>
# Key Attributes of Dropout Studies

<table>
<thead>
<tr>
<th>Sty</th>
<th>Gr.</th>
<th>Metric</th>
<th>M/%</th>
<th>Type</th>
<th>Covar.</th>
<th>Out.</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHB</td>
<td>7-8</td>
<td>Any, P</td>
<td>2.6%</td>
<td>H+S</td>
<td>15</td>
<td>10</td>
<td>.31</td>
</tr>
<tr>
<td>AEH</td>
<td>1</td>
<td>Cnt, Sc</td>
<td>1.1</td>
<td>S, Nn</td>
<td>15(2)</td>
<td>14</td>
<td>.12</td>
</tr>
<tr>
<td>OR</td>
<td>4-8</td>
<td>Thr, Sc</td>
<td>46%</td>
<td>S, Nn</td>
<td>29(7)</td>
<td>14</td>
<td>.28</td>
</tr>
</tbody>
</table>
### Key Attributes of Dropout Studies

<table>
<thead>
<tr>
<th>Sty</th>
<th>Gr.</th>
<th>Metric</th>
<th>M/%</th>
<th>Type</th>
<th>Covar.</th>
<th>Out.</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>8-10</td>
<td>Any, S</td>
<td>29%</td>
<td>H, Nn</td>
<td>20(2)</td>
<td>10</td>
<td>.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Any, S</td>
<td></td>
<td>S, Nn</td>
<td>20(2)</td>
<td>10</td>
<td>.22</td>
</tr>
<tr>
<td></td>
<td>1-8</td>
<td>Cnt, P</td>
<td>1.1</td>
<td>S, Nn</td>
<td>20(5)</td>
<td>10</td>
<td>.08</td>
</tr>
<tr>
<td>RL</td>
<td>8-12</td>
<td>Thr, S</td>
<td>24%</td>
<td>S, Nn</td>
<td>25</td>
<td>14</td>
<td>.39</td>
</tr>
<tr>
<td></td>
<td>1-8</td>
<td>Cnt, P</td>
<td>1.1</td>
<td>S, Nn</td>
<td>12(1)</td>
<td>14</td>
<td>.04</td>
</tr>
</tbody>
</table>
## Dropout & Frequent School Moves

<table>
<thead>
<tr>
<th>Sty</th>
<th>Gr.</th>
<th>Type</th>
<th>3 moves</th>
<th>Mobil</th>
<th>Stable</th>
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</thead>
<tbody>
<tr>
<td>AEH</td>
<td>1</td>
<td>Nn</td>
<td>0.36</td>
<td>55%</td>
<td>40%</td>
</tr>
<tr>
<td>OR</td>
<td>4-8</td>
<td>Nn</td>
<td>0.62</td>
<td>71%</td>
<td>47%</td>
</tr>
<tr>
<td>SS</td>
<td>1-8</td>
<td>Nn</td>
<td>0.24</td>
<td>10.3%</td>
<td>7%</td>
</tr>
<tr>
<td>RL</td>
<td>1-8</td>
<td>Nn</td>
<td>0.12</td>
<td>15%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>8-12</td>
<td>Nn</td>
<td>0.54</td>
<td>26%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Note. Median = 0.36. Mean = 0.38
Moving by Context

Evidence that intra-district moves in urban areas have more detrimental effects

Moves to high quality schools linked to higher achievement

Child & family subgroups not assessed
<table>
<thead>
<tr>
<th>Guidelines for Causal Inference</th>
<th>Level of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporality</td>
<td>Med</td>
</tr>
<tr>
<td>Size or magnitude</td>
<td>Low/Med</td>
</tr>
<tr>
<td>Gradient (Dose-response)</td>
<td>High</td>
</tr>
<tr>
<td>Specificity</td>
<td>Low</td>
</tr>
<tr>
<td>Consistency</td>
<td>High</td>
</tr>
<tr>
<td>Coherence</td>
<td>Low</td>
</tr>
</tbody>
</table>
Limitations

Selection of relatively high-quality studies

Unverified assumption of linear effects

Wide variability of mobility measurement

Bias associated with attrition or over-control

Very limited assessment of mediators
Conclusions

1. Frequent mobility most consistently associated with lower school success.
2. Estimated impacts are largest for school dropout.
3. Precision of mobility measurement varies substantially across studies.
4. Evidence of conservative bias present.
5. Scant assessment of differences by child and family subgroups.
Conclusions

6. Heterogeneity of effects by type, reason, grade, and frequency, contexts and their interactions are not well established.

7. Attention to nonlinear and threshold effects was very limited.

8. Research on mediators and mechanisms of effects just beginning.

9. Longer-term effects need further investigation.
CLS Examples on Mobility

1. Robustness testing
2. Indirect effects
3. Child-Parent Center PK-3 evidence
4. Mobility contribution to economic returns
CLS Sample Description

Cohort of 1,539 Kindergartners born in 1979-1980 who attended publicly funded early childhood programs for children at risk in Chicago public schools.

Data collected annually from many sources with 90% or higher recovery into adulthood. Mobility measured starting in K from school records and supplemented with parent/student reports.
## Threshold Impacts for School Moves and Related Factors

### Grade 8 reading

<table>
<thead>
<tr>
<th>Category</th>
<th>Impact</th>
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</thead>
<tbody>
<tr>
<td>1 move K-8</td>
<td>-1.9</td>
</tr>
<tr>
<td>2 moves K-8</td>
<td>-2.7</td>
</tr>
<tr>
<td>3+ moves K-8</td>
<td>-5.7*</td>
</tr>
<tr>
<td>Magnet school</td>
<td>6.4*</td>
</tr>
<tr>
<td>Private school</td>
<td>2.8</td>
</tr>
<tr>
<td>Out of Chicago</td>
<td>-0.6</td>
</tr>
<tr>
<td>High family risk</td>
<td>-5.7*</td>
</tr>
</tbody>
</table>

Note. *p< .05
Threshold Impacts for School Moves on Educational Attainment

Highest grade-
Age 25

1 move K-12             -0.08
2 moves K-12            -0.17
3 moves K-12            -0.25*
4+ moves K-12           -0.32*

Residential moves       -0.10

Note. *p < .05
Paths to Well-Being Affected by Early Childhood Experiences

**Early Childhood Ages 3-9**
- **Social/Economic Conditions**
  - Child demographics
  - Socio-Environmental Risk
  - Neighborhood Attributes
- **Program Participation**
  - Timing
  - Duration
  - Intensity
- **Motivation**
  - Self-efficacy
  - Perceived competence
  - Persistence in learning
- **Developed Abilities**
  - Cognitive development
  - Literacy skills
  - Pre-reading/numeracy skills
- **Social Adjustment**
  - Classroom adjustment
  - Peer relations
  - Self-regulating skills
- **Family Support**
  - Parent-child interactions
  - Home support for learning
  - Participation in school
  - Parenting skills
- **School Support**
  - Quality of school environment
  - Continuity and support
  - School characteristics

**Ages 5-12**
- **Child Well-Being**
  - School Achievement and Performance
  - School Remediation
  - Delinquency and Crime
  - Health & Mental Health
  - Educational Attainment
  - Economic Well-Being
  - Family Circumstances

**Adolescence to Adulthood**
- **Motivation**
- **Developed Abilities**
- **Social Adjustment**
- **Family Support**
- **School Support**

**References**
- MA = Motivational Advantage
- CA = Cognitive Advantage
- SA = Social Adjustment
- FS = Family Support
- SS = School Support
Child-Parent Centers

Covariates
- Mother's Education
- Family Composition
- Sex

Preschool Participation

Parent Involvement (1st-3rd grades)
- .17

Cognitive Measures at school entry (5 yrs)

Academic Motivation (K/1st grade)
- .37

Social Emotional Maturity (1st – 3rd grades)

Retention or Special Education by age 14
- .15

Academic Achievement (14/15 years)
- .39

School Mobility
- .18

School Quality
- .08

Educational Attainment
- Last Grade Completed (age 21)
- .40

School Mobility
- .12

Juvenile arrests
- .12

Academic Motivation
- K/1st grade

School Quality
- .42

School Quality
- .08
Perry Preschool Study

**Covariates**
- Mother's Education
- Family Composition
- Sex

**Preschool Participation**

**Cognitive Measures at school entry (5 yrs)**
- Parent Involvement (1st – 3rd grades)
- Academic Motivation (K/1st grade)
- Social Emotional Adjustment (1st – 3rd grades)

**Academic Achievement (14/15 years)**
- .19
- -.35

**Retirement or Special Education by age 14**
- -.21

**Juvenile arrests**

**Educational Attainment**
- Last Grade Completed (age 21)
- .13

**School Mobility**
- .32
- -.28
- -.16

**Educational Measures at school entry (5 yrs)**
- .58
- .42
- -.21

**Preschool Participation**
PK-3 Education Programs

Programs
Planned interventions and services beginning during any of the first 5 years of life and continue up to third grade

Practices
Elements of PK-3 programs such as preschool, full-day kindergarten, class sizes, curriculum alignment, parent involvement.
Child-Parent Centers

Child-Parent Center
Preschool/Kindergarten
(Wing or Building)

Head Teacher

Principal

Elementary School
Grades 1 to 3

Curriculum Parent-Resources Teacher

Outreach Services

Parent Component

Curriculum Component

Health Services

Parent Component

Curriculum Component

School-Wide Services

Age 3

To

Age 9

School-Community Representative
Resource Mobilization
Home Visitation
Parent Conferences

Parent Resource Teacher
Parent Room Activities
Classroom Volunteering
School Activities
Home Support

Language Focus
Small Class Sizes
Inservice Training

Health Screening
Nursing Services
Free + Reduced-Price meals

Parent Room Activities
Classroom Volunteering
School Activities
Home Support

Reduced Class Size
Teacher Aides
Instructional Materials
Individualized Instruction
Inservice Training

Health Services
School-Community Representative
Free + Reduced-Price meals
Resource Mobilization
## CPC Impacts on School Moves

<table>
<thead>
<tr>
<th>Prog. Group</th>
<th>2+ moves grade 4-8</th>
<th>3+ moves grade 4-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extended</td>
<td>-13.8%</td>
<td>-9.9%</td>
</tr>
<tr>
<td>School-age</td>
<td>-5.8%</td>
<td>-6.7%</td>
</tr>
<tr>
<td>Preschool</td>
<td>-9.3%</td>
<td>-3.9%</td>
</tr>
</tbody>
</table>

*Note.* Marginal effects from probit regression. See Table 9 and Appendix E for model information.
### Mediational Contribution of Mobility to Age-26 CPC Returns

<table>
<thead>
<tr>
<th></th>
<th>NPV</th>
<th>B/C ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>$84,556</td>
<td>10.57</td>
</tr>
<tr>
<td>School age</td>
<td>$11,706</td>
<td>3.97</td>
</tr>
<tr>
<td>Extended</td>
<td>$9,397</td>
<td>8.35</td>
</tr>
<tr>
<td>Mobility preschool contribution</td>
<td>$10,524</td>
<td>1.19</td>
</tr>
</tbody>
</table>

Note. Mobility link exclusive to educational attainment and crime benefits. See Table 10. Values are 2008 dollars.
Research Directions

1. Measure U. S. school moves annually.
2. Assess linear versus threshold effects.
3. Assess child and family subgroups.
4. Examine move type, reasons, and frequency within and across ages.
5. Examine processes & mediators.
6. Fully assess indirect and context effects.
7. Improve evidence on programs & policies.