

**School Mobility in the Early
Elementary Grades:
Frequency and Impact from
Nationally-Representative Data**

**Valerie E. Lee, David T. Burkam, and Julie Dwyer
The University of Michigan**

Our Charge:

To use the Early Childhood Longitudinal Study—Kindergarten Cohort data to investigate critical questions of how school mobility affects young children's development through third grade.

Presentation Outline

- 1. Conceptualizing and modeling school change**
- 2. Using ECLS-K for school mobility studies**
- 3. Research questions and analytic models**
- 4. Results**
- 5. Closing remarks**

1. Conceptualizing and modeling school change

Figure 1 Conceptual Model: Causes and Potential Negative Consequences of School Mobility in the Early Grades

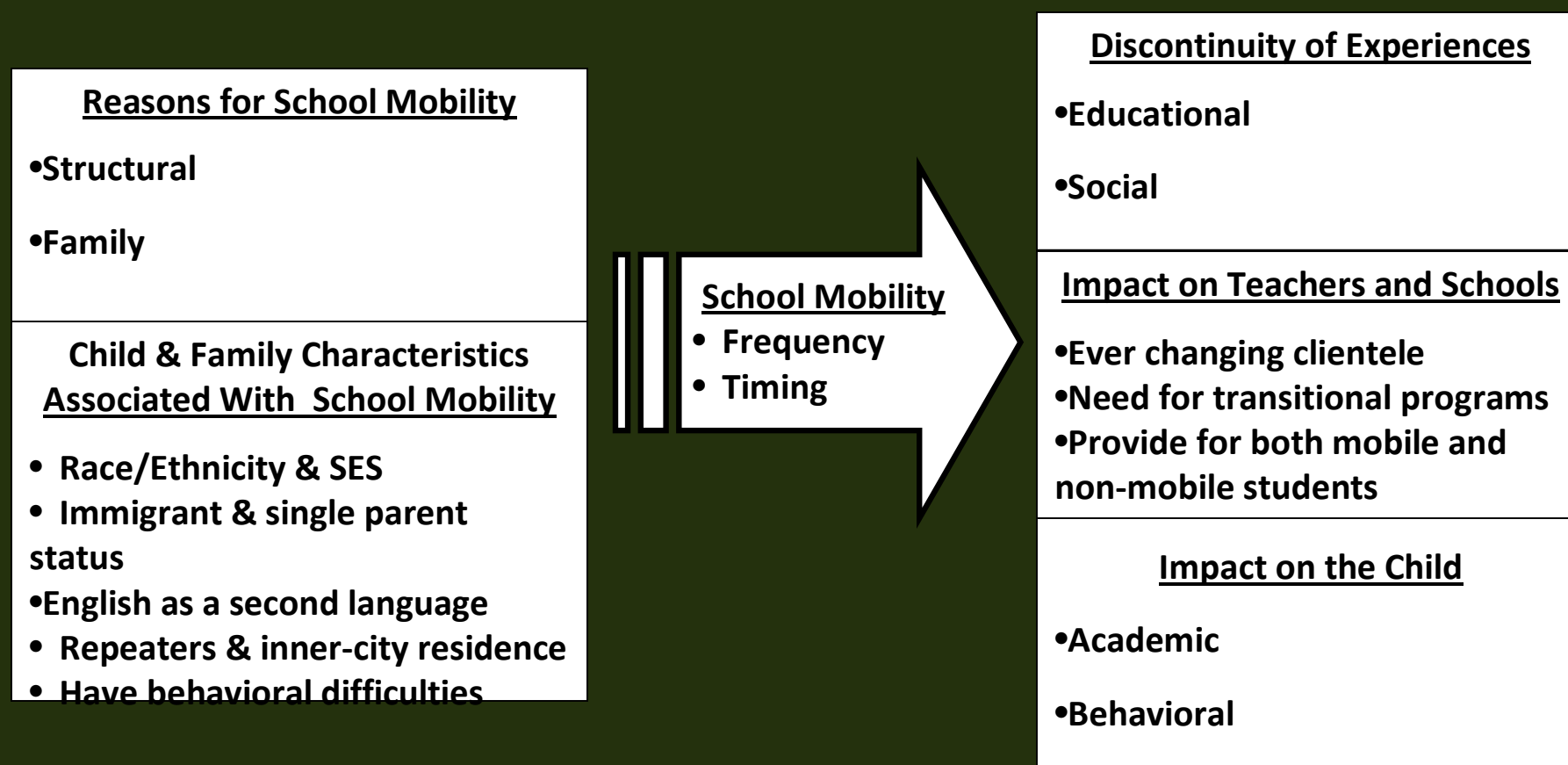
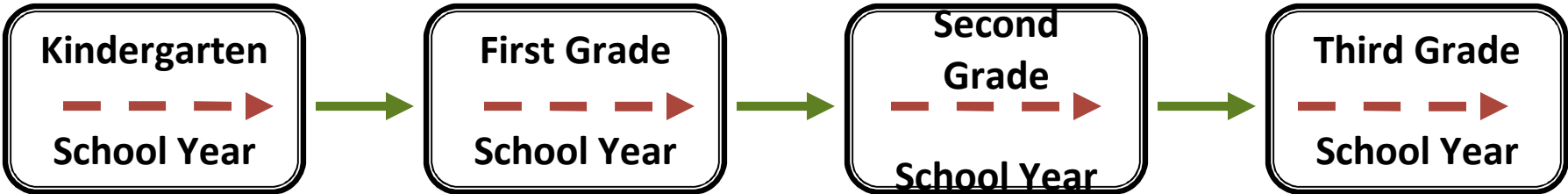




Figure 2 Conceptualizing School Change in the Early Grades



A total of seven possible school changes during the first four years of school

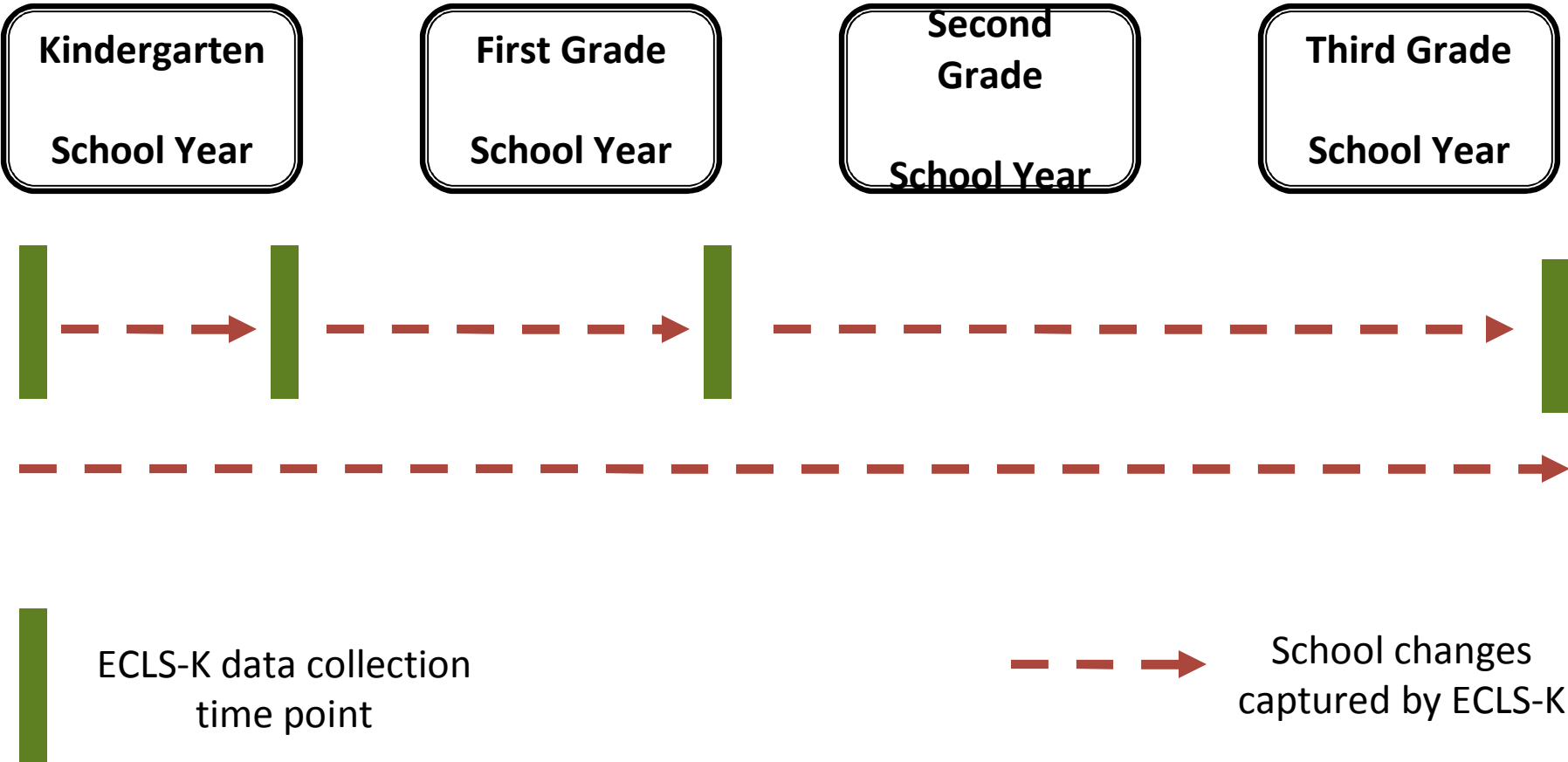
-  Changing schools during the school year
-  Changing schools between school years

2. Using ECLS-K for school mobility studies

What is the Early Childhood Longitudinal Study—Kindergarten Cohort [ECLS-K]

- **Longitudinal data collected by the National Center for Education Statistics**
- **A large nationally-representative sample of the 98-99 kindergarten class**
- **Information collected from parents, teachers, and school personnel**
- **Cognitive assessment in reading/literacy skills and mathematics**

Figure 3 Modeling School Change with ECLS-K









3. Research Questions and Analytic Models



- 1. Who changes schools and who does not change schools?*
- 2. What is the broad nature of the school move (during the school year, between school years, structural reasons, family reasons)?*
- 3. What is the impact of changing schools on children's reading and mathematics learning?*
- 4. Is that cognitive impact conditioned by other characteristics of the child or family? Are the effects different by gender, race/ethnicity, social class?*


How Do We Capture Mobility?

Timing:

- Ø Beginning of kindergarten to the end of kindergarten 
- Ø End of kindergarten to the end of first grade  
- Ø End of first grade to the end of third grade  
- Ø Beginning of kindergarten to the end of third grade 

Reason for moving:

- Ø *Structural* reasons (school does not include next highest grade) 
- Ø *Family* reasons (residential relocation or the family's desire or need for a new school) 

For school changes across all four years, we look only at frequency of moving (never, once, two or more times) 

What is included in our regression models?

Outcomes

Reading and math skills (IRT scores)

Mobility status

Indicators for structural and family motivated school changes, or total number of school changes

Covariates

- gender, race/ethnicity, non-English speaking household, single-parent household, total number in household, socioeconomic status (composite including household income, parents' education, parents' occupational prestige
- prior achievement
- whether child repeated kindergarten or received special education services

Unadjusted effects, adjusted main effects, and interaction effects

4. Our results

I. Frequency of School Mobility

Beginning of Kindergarten to End of Kindergarten (n = 17,745).

| | |
|-------------------------------------|-------|
| Remain in same school | 93.0% |
| Change schools (for family reasons) | 7.0% |

End of Kindergarten to End of First Grade (n = 14,943).

| | |
|---------------------------------------|-------|
| Remain in same school | 77.1% |
| Change schools for structural reasons | 5.2% |
| Change schools for family reasons | 17.7% |

End of First Grade to End of Third Grade (n = 11,975).

| | |
|---------------------------------------|-------|
| Remain in same school | 72.5% |
| Change schools for structural reasons | 3.1% |
| Change schools for family reasons | 24.4% |

I. Frequency of School Mobility

Beginning of Kindergarten to End of Third Grade (n = 11,975).

| | |
|----------------------------|-------|
| Remain in same school | 55.7% |
| Change schools once | 35.9% |
| Change schools twice | 8.1% |
| Change schools three times | 0.3% |

II. Mobility Rates Across Gender, Race, and SES

- **Mobility rates are similar for boys and girls.**
- **Black children consistently exhibit the highest mobility rates (except for structural changes).**
- **Overall only 45% of Black third graders are enrolled in their kindergarten schools, as compared to nearly 60% of White and Asian third graders.**
- **Children from lower-SES homes are more likely to change schools than their more affluent peers, especially during the first two years of schooling.**

II. Mobility Rates Across Gender, Race, and SES

- **Traditionally disadvantaged children (lower-SES and Black children) are more likely to change schools than their peers, especially for *family* (rather than *structural*) reasons.**
- **This fact underscores the importance of mobility studies that control for race/ethnicity, SES, and prior achievement.**

IMPORTANT TO SAY AT THE BEGINNING

The results from our regression models are clear. If researchers only look at *main effects* (the overall effects for everyone), the impact of school mobility is mostly benign. A more complex picture emerges only when looking at *conditional effects* (how the impact is different for different children).

And these results become quite complex.

We will mention only a few of the major results in this presentation.

III. Cognitive Impact: Changing Schools During Kindergarten

Children who change schools during the kindergarten year exhibit lower reading and math achievement by year's end (ES = $-.39$ SD in reading, ES = $-.33$ SD in math).

This negative impact on reading remains after controlling for child and family characteristics (ES = $-.15$ SD for reading), but there is no longer a significant impact on math.

Changing schools appears to be even more detrimental for the reading development of low-SES children.

Even though there is no overall impact on math development, low-SES children's math development appears to be hindered by changing schools.

III. Cognitive Impact: Changing Schools During Kindergarten

Higher risk of immediate grade retention: 4% of children who remain in the same school repeat kindergarten the next year, but 12% of children who change schools repeat kindergarten the next year.

Conclusion:

Changing schools during kindergarten has a small but lingering negative impact on reading development, and negatively impacts math development by the end of first grade (from our subsequent models).

IV. Cognitive Impact: End of K to End of First Grade

Overall, changing schools between the end of kindergarten and the end of first grade (for whatever reason – structural or family) has a *negligible impact* ($|ES| < .10 \text{ SD}$) on reading and math development.

But the effects are different for different types of children!

Structural change: certain types children from pre-primary schools (pre-K through K schools) experience difficulty when changing to a different school for first grade.

Family change: (a) children receiving special education services and (b) children who in addition changed schools during kindergarten are negatively impacted in both reading and math development.

IV. Cognitive Impact: End of K to End of First Grade

Once again there is a higher risk of grade retention:

Nearly 6% of children who remain in the same school are not in third grade two years later, but nearly 8% of children who change schools for family reasons and 13% of children who changed schools for structural reasons are not in third grade two years later.

V. Cognitive Impact: End of First Grade to End of Third Grade

Overall, changing schools between the end of first grade and the end of third grade (for whatever reason – structural or family) has *no impact* on reading and math development.

But once again the effects are different for different types of children!

***Structural change:* children who change during kindergarten and then change schools again because their first-grade school didn't have a third grade experience substantially decreased math development.**

V. Cognitive Impact: End of First Grade to End of Third Grade

Family change: once again, children receiving special education services are negatively impacted in both reading and math development by changing schools.

VI. Cognitive Impact: Beginning of K to End of Third Grade

This is the most broad way of looking at the impact of school mobility, and possibly the least informative.

Overall, changing schools *once* during the first four years of schooling has *no impact* on reading and math development, after adjusting for child and family characteristics.

Overall, changing schools *two or more times* has a small *positive impact* on reading and math development (ES \approx .10 SD), after controlling for child and family characteristics. **Note: before controlling for child and family characteristics, changing school two or more times is associated with somewhat lower achievement at the end of third grade (ES \approx -.10 SD).**

VI. Cognitive Impact: Beginning of K to End of Third Grade

There are a few exceptions to these overall patterns. For example, children receiving special education services are negatively impacted by changing schools (consistent with the previous results).

5. Closing Remarks

Closing Remarks

- **The complexity of our results makes any simple statement about the cognitive impact of school mobility nearly impossible.**
- **The cognitive impact of changing schools is different for different children. Researchers who focus only on main effects without exploring conditional effects are likely to misestimate the impact.**
- **Controlling for race/ethnicity, SES, and prior achievement is essential.**

Closing Remarks

- *How* and *when* researchers measure and classify school changes substantially influences the results of the investigation. It is important to collect longitudinal data, ideally at the beginning and ending of each school year.
- The reasons for changing schools influence the cognitive impact of changing schools. It is important to collect information from schools and parents regarding the reason(s) for school change. Some change is structural, some change is motivated by family reasons. Further information about the variety of family reasons (e.g., residential change, desire for a new/different school) is important.

Closing Remarks

- **Non-cognitive outcomes are as important as cognitive outcomes. Unfortunately, the teacher-reported behavioral measures in ECLK-K suffer from many problems that make their use problematic: e.g., highly-skewed distributions and substantial amounts of missing data among children who changed schools.**