Time Use and Academic Achievement

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Trends in American Time Use

- Over the past 150 years, the U.S. has undergone dramatic changes which have affected patterns of familial time use.

- Children's time use has shifted, most likely in relation to parents' more hectic schedules. Between 1981-1997:
  - Fewer children visiting, going to church, participating in passive leisure.
  - More children in sports activities, art activities, and in daycare (Hofferth and Sandberg 2001)

- Shifts in time use affect children along SES lines (e.g., Bianchi and Robinson 1997; Lareau 2003).
  - More advantaged students tend to:
    - Spend more time in structured activities, reading/being read to, doing homework.
    - Spend less time watching television and in unstructured activities.

Time Use Implications: Education

- Interest in time use is important as it coincides with sociological research on the importance of the out-of-school environment for academic achievement (e.g., Jencks 1972).
  - Some suggest that much of the achievement gap can be explained by out-of-school environments (Alexander, Entwisle, and Olson 2007)
- Researchers turn to non-school factors to explain achievement.
- Studying children's time use in particular activities can add to this literature.
  - Differing time use patterns may be one way to better explain achievement gaps between advantaged and disadvantaged students.

Predicting Academic Achievement

- Research indicates that how students use their time predicts standardized test scores, grades, and college outcomes (e.g., Aschaffenburg and Maas 1997). Studies find:
  - Positive Relationship: Structured activities, Reading
  - Negative/No Relationship: Unstructured activities
  - Mixed Results: TV, Homework (may be positive for older students)

- Thus, time use may be one way to pinpoint what out-of-school factors are important for achievement.

- **BUT…** the activities that positively predict achievement are those frequented by the most advantaged students.
  - Relationship between time use and academic achievement may be spurious.
  - Previous studies do not adequately control for class or use quasi-experimental or experimental methods to isolate causality.

Present Study

- I will examine the relationship between time use and academic achievement, with a focus on isolating causality using several methodologies.
  - These methodologies will also help control for reverse causality.
- Focus on unstructured leisure, structured leisure, watching TV, reading/being read to, homework.
- Research Questions
  - Do the above activities significantly predict standardized test scores, after more fully controlling for SES?
  - Do these activities help explain gaps between advantaged and disadvantaged students?

Data and Sample

- Data
  - Panel Study of Income Dynamics (PSID)
    - Longitudinal survey begun in 1968.
    - Family measures (e.g., income, demographics)
  - 1997, 2002 Child Development Supplements (CDS)
    - Individual background characteristics (e.g., gender, race)
    - Time Diaries (*N* time 1 = 2094, *N* time 2 = 2569)
    - Woodcock-Johnson Revised Achievement tests
- Sample
  - Children aged 6-11.
  - Restrict to black and white children.

Methods

- OLS
  - Similar to previous studies, but with much more detailed class measures: parental income, wealth, occupational prestige, and education Detail
  - Despite extra controls, susceptible to omitted variable bias.
- Fixed Effects
  - Cross-sectional sibling fixed effects
  - Longitudinal individual fixed effects
  - Controls for unmeasured characteristics across siblings and individuals, but if these don't remain constant and they affect outcome, bias remains.

Methods, Continued

- Instrumental Variable (IV): Find a variable that predicts time use, but not achievement.
  - Possible Instruments
    - Use time use from one sibling in 2002 to replace time use of another sibling in 1997.
    - Siblings time use should be correlated.
    - Time use in T2 should not predict achievement in T1.
    - But, it may be correlated with the error, i.e., sibling's time use may be correlated with an unobserved variable that is important for achievement.

Methods, Continued

- More Possible Instruments
  - Gender
    - Previous research indicates gender predicts how children spend their time.
    - Because of its theoretically randomness, it should not be correlated with the error term.
    - But, we know there are relationships between gender and test scores.
- Other ideas?
  - Exogenous job loss?

Conclusions

- With research highlighting importance of non-school factors in influencing schooling experiences, studies have increased attention on children's time use, finding consistent relationships between certain activities and academic outcomes
- However, previous research is limited in its ability to establish causal relationships.
- Present study will add to literature by attempting to isolate causality.
- Results are important for academics as well as policymakers.