



Graduate School of Education
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Ambient Positional Instability in Education Systems: What We've Planned, What We've Learned in the First Quarter, and A Request

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Background

- **Issue:** Ambient Positional Instability (API) aka Churn
- **Meaning:** Teachers' shifts from one grade to another, from one course to another, from one position to another, etc. within a school, across schools, or out of schools, and within each year, and across years.
- **Example:** In one jurisdiction, from one year to the next, 50% of teachers shifted from teaching one course in middle school science to another course or grade or position in the middle schools . Similar shifts were encountered in 4 cities involved in our randomized trials to test science education innovations.

Background Cont'd

- **Definitions/Context:** API gets deeper than conventional *turnover* but includes it.
- For instance, our interest lies in changes in what courses a teacher teaches in a school over a two year period, in shifts from one grade to another, in shifts from teaching to administration, in addition to a teacher's leaving teaching.
- API rates greatly exceed turnover rates it appears.

Possible Implications

- High API *could* have serious implications for...
- Estimating the effects of programs that are tested in randomized trials.
- Designing new programs
- Managing schools/districts, human resources, and TVA work.
- Understanding correlates of students' performance on achievement tests.

Initial Project Aims

- We have NSF (10/13-3/16) funds to undertake...
- Case studies of selected schools/districts/states to learn about existence of and access to API-related data.
- A survey of 100 largest schools to learn about existence of and access to API-related data.
- Simulation studies to anticipate how magnitude of API at different education levels could affect student performance, API measurement issues, etc.
- Review of reports on randomized controlled trials to deepen understanding of API's role in these studies.

Excluded Aims

- For this project, we will *not* directly explore potentially important and pertinent issues, e.g.
- API and Teacher Value-Added studies
- “Impact” evaluations that relate API to subsequent student performance
- But we think API has implications for these.

Project Aims Revised During the First Quarter

- In addition to initial aims, we will explore...
- Intermediary organizations such as CCSR, CGCS, and CALDER to learn who has what kind of API-related data already exists, what is accessible, and what is used.
- Supra-local entities such as SEAs and Education Statistics Forum to learn about existence and access to API-related records.

What We've learned: First Quarter Case Studies

- To judge from exploratory studies and reconnaissance,[†] there is notable interest in topic.
- Evidence at this point is choppy.
- Chicago Public Schools publishes teachers' names, crude position (regular teacher) and school each year, so *some* kinds of API can be got, maybe.
- CCSR has transcript data limited to teacher, making it possible to understand shifts from one course to another at least in high school, i.e. *one* kind of API.

What We've learned:

First Quarter Case Studies - Cont'd

- Missouri has data dating from 20 years ago on teachers' shifts from one school and district to another, i.e. two kinds of API.
- Idaho appears to have data on teacher shifts from one position to another within school across years.
- Illinois publishes data on 160,000 teachers permitting understanding of school to school shifts, an API type, but not other types of API.

What We've Learned: First Quarter Case Studies - Cont'd

- Vernacular is often variable and confusing.
- Example: Public records for one big district identify teachers by name and give salary and district, and denominate most as “regular teachers.” The only contrast is with “Special Ed Teacher. No grades or courses etc. are given.
- Efforts by Ed Statistics Forum, Data Quality Initiative, are admirable in trying to bring order to definitions and vernacular.

What We've learned: First Quarter Review of Reports on Experiments

- We are reviewing every article in each *JREE* issue on RCTs.
- When the Program tested is of short duration (6-8 weeks, summer), API is rarely mentioned and presumably $API = 0$.
- When the Program tested is a year in duration, API is infrequently mentioned, and presumably low, but there are exceptions.
- When the Program tested is over a year in duration or when two sequential cohorts are involved, reporting on API is very choppy. One can learn sometimes that rates of API are a serious concern.

What We've learned: First Quarter Simulation

- We're now doing only static arithmetic simulations (statistical model based), rather than dynamic ones.
- Any such simulations depend on empirical API data, which we do not have much of as yet, and assumptions.
- With certain assumptions, it's easy to show statistical power of RCTs drops with increasing magnitudes of API at different education levels.
- With certain assumptions, it's easy to show how achievement level of students drops with increasing levels of API. But see CALDER for some empirical estimates.
- Such simulations are crude and insufficiently credible at this point.

What Next? A Request

- We welcome expressions of interest in the API topic. Contact information is on the last slide.
- Collaboration: Who? Why? How?
- Ideas
- Constructive Criticism
- Nominations of Data Files, Intermediary organizations, etc.

Thanks!

Appendix: API NSF Prime Group Members

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