



RESEARCH ON IMPROVING
SYSTEMS OF EDUCATION

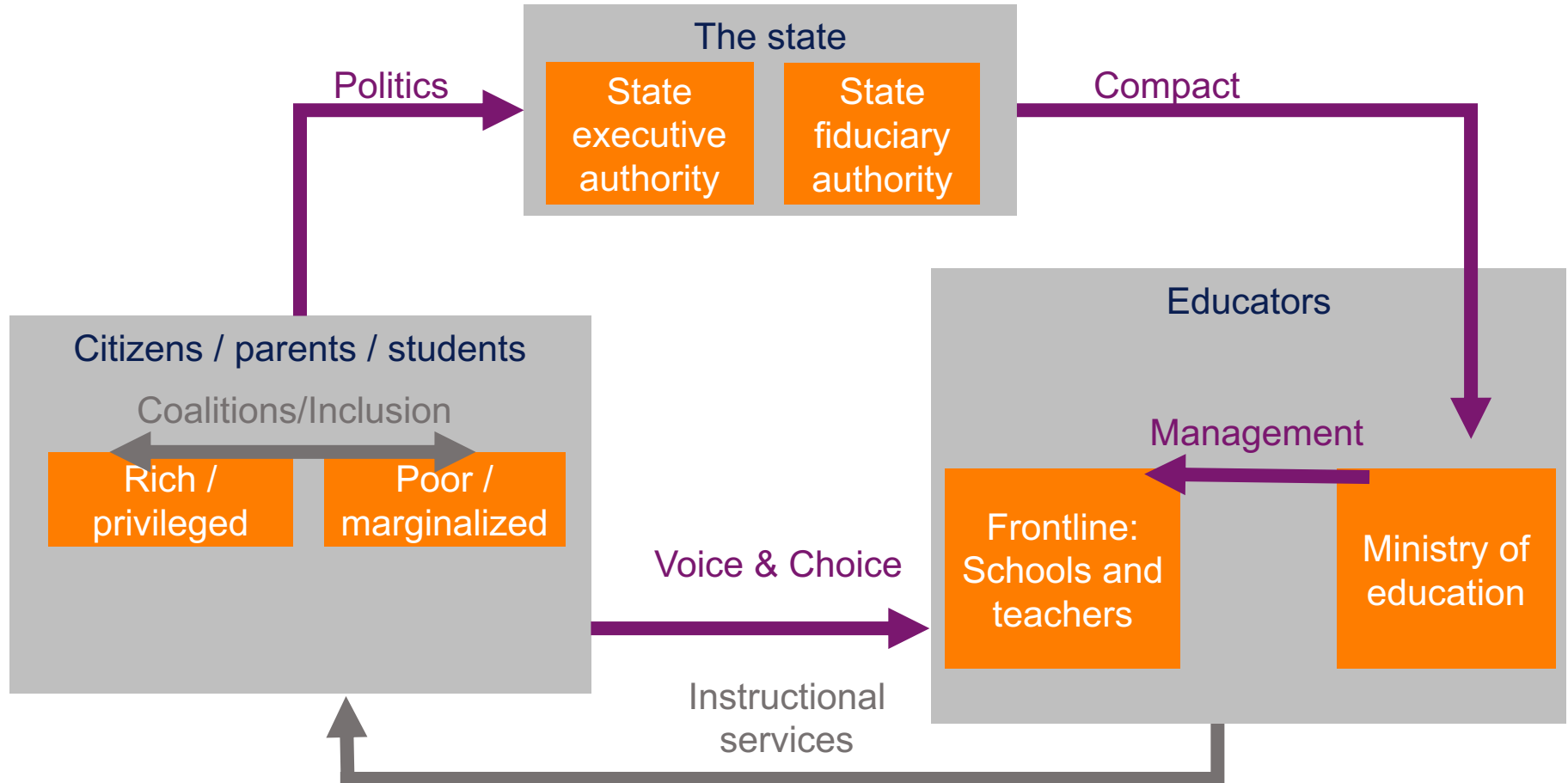
Understanding the functioning of education systems: Research methods and perspectives from the RISE Programme

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CIES | April 29 2021



An analytical description of an education system names the actors and the relationships among them



Outcomes of education system are the organic/endogenous result of the choices principals and agents take informed and structured by design elements in each relationship

Five features of each relationship of accountability (Principal (P) to Agent (A))	Principal-agent relationships			
	Politics: Citizens and the highest authorities of the state	Compact: Highest authority of the State to Education authority	Management: Education authorities and schools, school leaders, and teachers	Voice & Choice: Service recipients (parents/children) and providers of service (schools, school leaders, teachers)
	Delegation: what the principal wants the agent to do.			
	Finance: resources the principal allocates to the agent to achieve tasks.			
	Information: how the principal assesses the agent's performance			
	Support: preparation and assistance that the principal provides to the agent to complete the task.			
Motivation: How the principal motivates the agent.				
Performance of agent is the endogenous outcome of the interactions between the agents, which are structured by the features of the relationship.				
Systems deliver learning when strong relationships of accountability align across design elements around learning objectives				

RISE Programme research puts this framework to use to understand how education systems in developing countries can overcome the learning crisis



Four research methods to understand systems

- Structural modeling
- Qualitative observation
- RCTs to generate system insights
- New methods to measure emerging concepts

Structural models, take empirical insights and build a models that can inform thinking about the system

Paper & Authors

“A Structured Model of the Dynamics of Student Learning in Developing Countries, with Applications to Policy” Michelle Kaffenberger & Lant Pritchett

Setting



Global

Overview

- Synthesize literature on learning profiles. Identify parameters that characterize learning.
- Build and calibrate a model to reproduce learning outcomes in developing countries.
- Conduct four policy simulation using model: expanding schooling, slowing curriculum pace, widening focus of instruction to encompass more children, improving overall instructional quality.

System insights from paper findings

- Predict the consequences of scaling a policy. Can use experiments to elicit production function parameters, but to predict what will happen at scale you need to have a model of to simulate the overall consequences of those, which depends on behavior.
- In the simulations: massive expansion of enrollment does not change the proportion of students reaching the SDG, slowing curricular pace increases it four-fold.

Contribution of this method

- All conventional wisdom, back of the envelop calculations or claims, are based on “invisible models”.
- Models make the assumptions behind “invisible models” visible.
 - e.g. : results of schooling expansion are very different if you assume dropout is endogenous to learning vs exogenous.

Qualitative observation: careful, thick observation of entire reform process from the beginning

Paper & Authors

“The Delhi Education Revolution: Creative disruption or Creative Resistance?” Yamini Aiyar, Vincy Davis, Taanya Kapoor and Gokul Govindan

Setting



Delhi, India

Overview

- New political party comes to power in 2015 and makes education a priority, undertakes a set of foundational skills focused reforms (adaptation of TARL methods)—but only controls late basic (neither primary nor higher).
- Three-year ethnographic study of Delhi school reforms (participant observations, classroom observations, focus group discussions and semi-structured interviews with key informants across Delhi government schools.
- Aim to study the dynamics and process of implementing the reforms.

System insights from paper findings

- Political will is a necessary but not sufficient condition for systems change. Politicians goals come up against constraints of bureaucratic processes (compact and management relationships) and cultures, which change slowly.
- Success of reform depends on how frontline workers understand, adapt, and integrate reform practices.

Contribution of this method

- Decision to embed and observe from the beginning moves beyond study of “success or failure” to insights on how change happens (which risks “selection on the outcome” bias).

RCTs informed by, and designed to generate, system insights

Paper & Authors

“Upping the Ante: the Equilibrium Effects of Unconditional Grants to Private Schools” Tahir Andrabi, Jishnu Das, Asim Khwaja, Selcuk Ozyurt, and Niharika Singh

Setting



Punjab (Faisalbad), Pakistan

Overview

- RCT allocates *villages* to one of three groups: 1) control; 2) low treatment, one school in village gets a grant; 3) high treatment, all schools in village get a grant
- Schools in low treatment villages invest in inputs and don't change fees. They see higher enrollment and higher revenues, but no change in test scores.
- Schools in high treatment villages invest in inputs and teachers and raise fees. They too expand enrollment (but by less), but also raise test scores.

System insights from paper findings

- Private schools are operating in a general equilibrium where they make choices based on parent preferences (as agents of the voice and choice relationship).
- Credit constraints (finance) are alleviated for just one school, that school they can raise revenue by expanding, but if credit constraints are alleviated for all schools then schools try to raise revenue for their school by competing to improve quality.

Contribution of this method

- Experiment design varies features of the system environment, allows study of how outcomes change when nature of system and choices available to parents and schools change. Able to illicit this because each villages is essentially a closed market.
- Variation in system parameter is distinct from RCTs that study an intervention “at scale” but do not vary conditions across systems.

New methods to measure emerging concepts

Paper & Authors

“System (In)Coherence: Quantifying the Alignment of Primary Education Curriculum Standards, Examinations, and Instruction in Two East African Countries” Michelle Kaffenberger and Julius Atuhurra

Setting



Tanzania



Uganda

Overview

- Use an established (in the US) methodology (the Survey of Enacted Curriculum) to study the alignment between curriculum, assessments, and classroom instruction in Uganda and Tanzania.
- All three components are not well aligned with each other.
- Paper highlights these results in Tanzania and Uganda and provides a proof of concept for how this can be applied as a tool to inform policy.

System insights from paper findings

- Incoherence between curriculum (delegation) and assessments (information) in both systems.
- Teachers, faced with these incoherences, tend to choose neither their instruction tends to be broad in terms of content and complexity, rather than focused on following either exams or curriculum.

Contribution of this method

- Identify key concepts and develop empirical methods that can measure these concepts.
- Measurement of concepts can produce useful tools to motivate action.
- Serendipitous discoveries arise, especially in large research projects.

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