

Honors Thesis Proposal: Learning Outcomes, Data Collection, and Analytical Possibilities for  
Pratham's Hamara Gaon Educational Interventions in India

By XXXXXXXX XXXXXXXX

**Working Title:** Learning Outcomes, Data Collection, and Analytical Possibilities for Pratham's Hamara Gaon Educational Interventions in India

**Project Purpose:** This paper is based on data collected by Pratham, a large NGO that works with government schools in India. The broad purpose of the project is to answer the question, "How can we support village communities in India as they come up with solutions to illiteracy for children in primary school?" The specific purpose of the paper is to analyze existing measurement strategies related to Pratham's Hamara Gaon learning interventions for children in Indian villages, recommending adjustments to existing data collection and analysis methods to more accurately determine causality when evaluating the effectiveness of interventions. This will include a descriptive analysis of the effects of programs implemented in villages across India during 2018-2019, a dissection of Pratham's current data-collection techniques, and a strategic recommendation for future data-collection based on work in similar settings.

**Project Importance:** Pratham programs have been the subject of various research studies related to education within development work. Previous research has used Pratham to examine the relative productivity of several modes of implementing an Indian English education curriculum,<sup>1</sup> the importance of beneficiary participation in community education interventions,<sup>2</sup> and other factors that influence the effect of Pratham's programs on student outcomes. The results of this Pratham-specific research connect to broader education and development research related to learning interventions. For example, Conn compiled a meta-analysis of impact evaluations related to educational interventions in Sub-Saharan Africa,

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<sup>1</sup> Banerjee, Abhijit V., et al. "Pitfalls of Participatory Programs: Evidence from a Randomized Evaluation in Education in India." *American Economic Journal*, 2010.

<sup>2</sup> He, Fang, and Leigh. "How to Teach English in India: Testing the Relative Productivity of Instruction Methods within the Pratham English Language Education Program." *Poverty Action Lab*, 2008.

finding that programs altering instructional techniques greater effects than other types of interventions.<sup>3</sup> Tan evaluated experiments in Philippine elementary schools, finding benefits to providing teachers with learning materials.<sup>4</sup> Such analyses guide education policy and NGO interventions.

All of this research relies heavily on effective data collection and econometric analysis. Development economist Esther Duflo provides a toolkit for using randomization in development economics, while other economists emphasize quasi-random experiments and synthetic control groups.<sup>5</sup> My analysis will shed light on the descriptive effects of Pratham's most recent learning interventions, using data untouched by previous researchers. It will then focus on identifying and designing appropriate data collection and econometric techniques for Pratham's Hamara Gaon program so that it can measure the effectiveness of future programs.

## **Project Overview**

### *Background on Pratham*

Pratham is a large NGO that works with government schools in India. It was founded in 1994 with support from UNICEF and the Mumbai Municipal Corporation as an organization that aimed to create self-sustaining preschools and remedial education opportunities for primary school students in Mumbai.<sup>6</sup> Pratham grew to become a driving force in education research and in programs focused on improving reading levels among primary and upper primary school students. It has built a national network that reaches 58 million children in 21 Indian states.<sup>7</sup>

Pratham is also a key player in global education policy research through its emphasis on citizen-led assessments. It created the Annual Status of Education Report, an annual,

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<sup>3</sup> Banerjee, Abhijit V., et al. "Pitfalls of Participatory Programs: Evidence from a Randomized Evaluation in Education in India." *American Economic Journal*, 2010, [pubs.aeaweb.org/doi/pdfplus/10.1257/pol.2.1.1](https://pubs.aeaweb.org/doi/pdfplus/10.1257/pol.2.1.1). Accessed 27 Sept. 2019.

<sup>4</sup> Tan, Jee-Peng, et al. "Student Outcomes in Philippine Elementary Schools: An Evaluation of Four Experiments." *The World Bank Economic Review*, Sept. 1999, [academic.oup.com/wber/article/13/3/493/1664656](https://academic.oup.com/wber/article/13/3/493/1664656).

<sup>5</sup> Duflo, Esther, and Rachel Glennerster. "Chapter 61 Using Randomization in Development Economics Research: A Toolkit." *Handbook of Development Economics*, 2007.

<sup>6</sup> Pratham USA. [prathamusa.org/about-us/history/](https://prathamusa.org/about-us/history/). Accessed 27 Sept. 2019.

<sup>7</sup> Pratham USA. [prathamusa.org/about-us/history/](https://prathamusa.org/about-us/history/). Accessed 27 Sept. 2019.

nationwide survey conducted by citizens to assess students basic reading and arithmetic skills.<sup>8</sup> This report model of this report has spread to 14 countries and 3 continents. The data that I will use for my analysis was also citizen-led—collected by local volunteers in 2,345 Indian villages.

The Hamara Gaon Project is Pratham's latest series of learning interventions for primary school children. It began in August 2018 and consists of three key interventions: Learning Camps, Libraries, and Community Events. Learning Camps are 24-day programs that group children by level and teach fundamental reading and mathematics. Libraries are community based—they group children in hamlets and provide them with learning materials. Community events are opportunities for the children to showcase their learning through the interventions. Pratham's data management team is currently seeking to measure the effectiveness of these interventions and make adjustments to future programs to optimize student learning and retention.

#### *Village Report Card Data*

The data I will use for the project focuses on learning levels and enrollment statistics for children in villages where the Hamara Gaon program has been implemented. It is referred to as Village Report Card data, and was collected in a census format by local volunteers over two years, organized by child. The volunteers collected information on 583,352 children ages 3-18. The children live in 2,345 villages, which are organized into 124 blocks in 82 districts. In Year 1, families were surveyed pre-intervention on a number of indicators including technology use, education of parents, tuition paid for children's education, school enrollment, and the learning levels of children. In Year 2 (post-intervention), families were surveyed on a similar set of variables.

Historical data from Pratham includes similar measures of enrollment and learning levels, per-child, over time. The 2018-2019 data is the only data that surrounds the Hamara Gaon interventions.

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<sup>8</sup> "1996-2005: Foundations." *ASER Centre*, [www.asercentre.org/p/158.html](http://www.asercentre.org/p/158.html). Accessed 27 Sept. 2019.

## *Hypothesis and Methodology*

Discussions with Pratham's data management team and research on methods used to evaluate learning interventions as discussed in the project purpose lead me to hypothesize that a more robust data collection method—one that allows us to estimate counterfactual outcomes—will help Pratham not only establish causality but also evaluate future programs. Burde and Linden provide an example of the implications of improved data collection. They conducted a randomized evaluation of the effect of village-based schools on children's academic performance using a sample of 31 villages and 1,490 children in rural northwestern Afghanistan.<sup>9</sup> Their randomization methods allowed for robust statistical analysis and causal inference. Applying such methods to an organization like Pratham could allow for clear outcomes spurred by interventions.

I will start by analyzing the existing Village Report Card data, examining the correlation between program participation and learning levels. I will also include other descriptive measures including attrition rates, trends in demographic variables related to income and parents' education levels, and correlation between program participation and student enrollment in public schools.

After performing basic descriptive analysis, I will compare the Village Report Card data collection technique to other methods used to measure the impact of learning interventions in development economics. I will also provide a detailed literature review of econometric methods used to estimate causal effects of programs in primary schools internationally. Ultimately, I will assess the feasibility of different data collection and analysis methods for Pratham. This will lead me to design a strategy and series of recommendations that Pratham may implement to measure the Hamara Gaon intervention and any other similar, village-based programs. If appropriate, I will identify potential areas and villages for randomized treatment with future interventions.

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<sup>9</sup> Burde, Dana, and Leigh L. Linden. 2013. "Bringing Education to Afghan Girls: A Randomized Controlled Trial of Village-Based Schools." *American Economic Journal: Applied Economics*, 5 (3): 27-40.

## **Qualifications of the Thesis Committee**

*Faculty Advisor: Olga Stoddard (Economics)*

Olga Stoddard is an Assistant Professor in the BYU Economics Department and a Research Affiliate with the Science of Diversity and Inclusion Initiative. She received a PhD in Economics from the University of Hawaii, and has expertise in behavioral, labor, and public economics. I developed a relationship with Dr. Stoddard as a student in her Economic Development class, and later worked for her as a Research Assistant on a project focused on gender dynamics research. Many of the topics I will address in my thesis stem from the curriculum in Dr. Stoddard's Economic Development class. Her familiarity with development research and Randomized Control Trials allows her to both understand and guide my research.

*Faculty Reader: Eric Eide (Economics)*

Eric Eide is a Professor of Economics at BYU whose research focuses on economics of education and health economics. He has done significant research related to K-12 education policies, including school spending and grade retention. He also has international experience in education as a former employee of the RAND Corporation, where he worked to reform the K-12 education system in Qatar. Dr. Eide was one of my first Economics professors at BYU. I am currently enrolled in his Economics of Education class, which deals with various interventions related to primary education. This class and Dr. Eide's education research are relevant to my understanding of the economics of education as it applies to Pratham interventions.

*Honors Coordinator: John Stovall (Economics)*

*\*Potential Honorary Reader: Lant Pritchett (Development Economist, Harvard and Oxford)*

## **Project Timeline**

October 10<sup>th</sup> 2019: Receive full dataset from Pratham Data Management Team in India

October 10<sup>th</sup>-February 1<sup>st</sup> 2019: Clean and analyze data, gather descriptive conclusions, research econometrics methods used for education interventions

February 1<sup>st</sup> – February 21<sup>st</sup>: Discuss basic findings with Pratham and format in formal paper

February 21<sup>st</sup>: Thesis Defense Information Form due

March 11<sup>th</sup>: Thesis Defense due

March 13<sup>th</sup>: Thesis Submission Form due

March 20<sup>th</sup>: Final Thesis PDF due, Thesis publication

**IRB or IACUC Approvals:** Not Needed

### **Culminating Experience**

The most significant presentation of my research will be to Pratham itself. The organization is hoping to adjust its strategy regarding community engagement, learning camps, and community libraries. Thus, I plan to present my findings to Pratham with relevant recommendations on how the organization can adjust its interventions to increase enrollment, reading levels, and community participation. I may also comment on future data collection methods so that causality can be determined more precisely.