Project Light

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Problem

Access to quality K-12 education is a challenge around the world. United Nations have made it as a one of the sustainable development goals. There are multiple factors affecting the quality education. However, there is a lack of data driven consensus on what those factors are and how much they affect the education quality. Moreover, these factors can differ from one region to another. Hence a one size fits all approach does not work

Solution

I propose Project Light – a data and experiment driven framework to improve education quality. This framework can be used globally, but still allows regional adaptation thru local data. Project Light is a four-stage cyclical framework: Qualitative Survey -> Quantitative Survey -> Experimentation -> Scale -> Qualitative Survey

1. Qualitative Survey
- Data question: What are the possible factors affecting education quality?
- Qualitative survey of teachers, students by Citizen science volunteers
- Data analyst find all the factors from the surveys
- Program Lead coordinates survey, analysis and funding for a region

4. Scale
- Question: How can the factor be improved at scale?
- Program lead coordinates with government and non-profit to secure funding and apply learning from the experiment to a larger scale

2. Quantitative Survey
- Data question: What are the top factors?
- Quantitative survey of teachers, students, school administrators by Citizen science volunteers
- Quantitative survey includes granular data for each factor. E.g. number of toilets in a school
- Data analyst find top factors from the data

3. Experimentation
- Data question: Can experiment prove that by influencing the factor, quality of education really improves?
- Run A/B experiment on multiple schools changing one of the factors such as toilet availability
- Program Lead coordinates experimentation and funding activities for a region

Inspiration

DUB talk by Julia K. Parrish on "Paper, Pencil, Smartphone, App: Optimizing Data Quality and Participant Retention in Hands-on Citizen Science" inspired me to think about quality and consistent data collection using Citizen Science volunteers.


Step 1 - Initial Survey
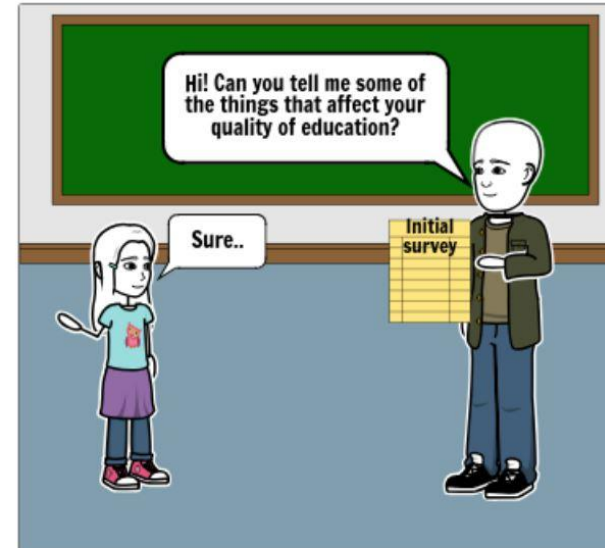
Citizen science volunteers survey a small random sample of students and teachers in the region to get a high level idea of the factors that affect quality education

Step 2 - Find all factors affecting education quality
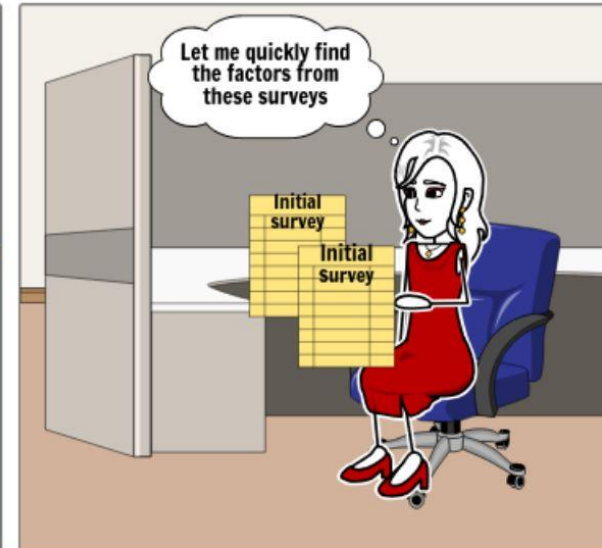
Data analyst analyzes the qualitative surveys and find all the factors that are affecting quality of education in the region

Step 3 - Detailed survey
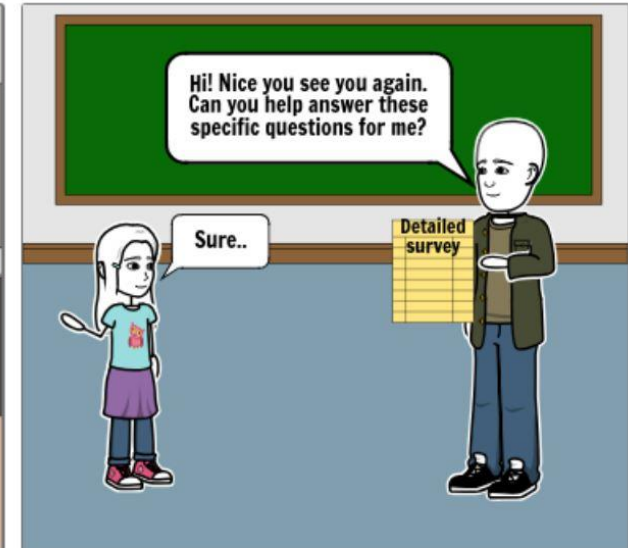
Citizen science volunteers now conduct a quantitative survey collecting data for specific factors identified from the Step 2. This survey is conducted over a larger random sample of students and teachers from the region

**Step 4 - Find top factors affecting education quality**

Data analyst combines the data from all the detailed surveys and finds the top factors affecting the quality of education

Step 5 - Pick one factor and run A/B experiment
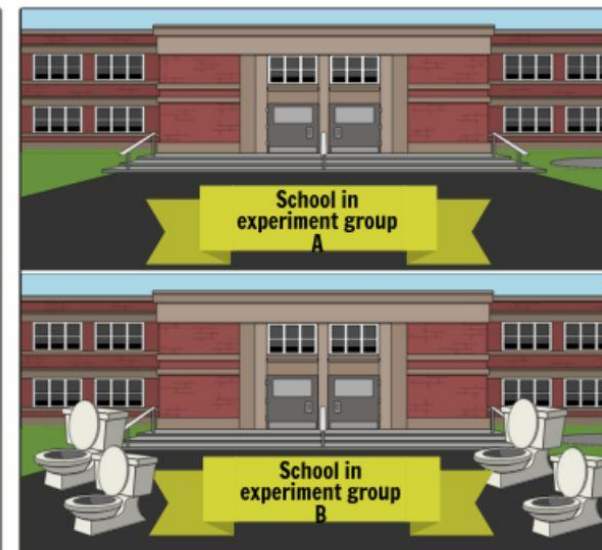
Find a factor such as availability of toilet and run A/B experiments to provide evidence that the factor indeed effects the quality of education

Step 6 - Apply solution at scale
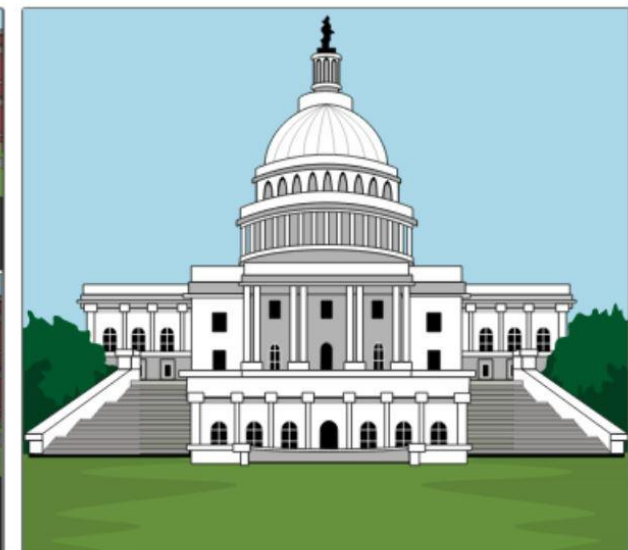
Share results with government and non-profits to make improvements at scale