Engaging Families in Co-Designing the Algorithmic Student Assignment Policy in San Francisco Unified School District

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Abstract
The San Francisco Unified School District (SFUSD) passed a resolution in 2018 to redesign their algorithm-based decision-making student assignment system to promote predictability, proximity, and diversity. We worked in collaboration with SFUSD and conducted community engagement interviews with families and guardians as stakeholders to realign the goals of this algorithm with the interests of community in mind. We further performed an inductive qualitative analysis of these interviews using the grounded theory approach. Using this analysis, we generated a theory for the new system.

Methods

A. Recruitment Strategy

- Worked in collaboration with SFUSD, education placement center and non-profits to recruit ideal participants for the study.
- Primary form of communication was email

B. Data Collection

- Semi-structured interviews (n=2) over the phone
- Participants: Families of color with a low socio-economic status (identity remains confidential)
- Interviews were recorded and transcribed using text-to-speech service

C. Data Analysis

- Inductive Qualitative Analysis
- Approach – Ground Theory Method
- Analysis software - maxQDA

References

Discussion

- Decision-making algorithms when subjected to novel cases tend to make erroneous assignments in high confidence. Personalized information required by the edge cases was provided by the “street-level bureaucrats” [4] of the system. The new design of intelligent decision-making algorithms should establish reflexivity, like the bureaucrats, to examine the repercussion of their decisions before the decision is made.
- Our findings revealed that marginalized parents wanted their children to attend schools with children of similar ethnic background and culture. This finding makes us question whether the community wants diversity as a metric in the schools.

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Figure 1: San Francisco residential segregation by Ethnicity (Image Copyright, 2013, Walden Cooper Center for Public Service, Rector and Visitors of the University of Virginia (Dustin A. Cable, creator))

Figure 2: The matching algorithm takes students’ preferences over schools and schools’ priorities as inputs and outputs the most efficient assignment of students to schools.

Figure 3: Snowball Sampling

Figure 4: Conducting Interviews

Figure 5: Grounded Theory Coding Phases

Figure 6: A. Recruitment Strategy

- Parents who don’t own a vehicle can’t adhere to an assignment made far from where they live

B. Limitations of the Sibling Tiebreaker

- Sibling tiebreaker assigns the younger sibling to the older sibling’s school while the vice versa is not true

C. Time and Information Costs for Navigating the System

- Families needed one-on-one support for enrolling their child at a favorable school.
- They strongly encouraged the fact that having someone who they can talk to at the district can be very resourceful.

D. Inequitable Distribution of Resources and Diversity

- Families believe that resources are not distributed equally amongst schools
- Families shared that some schools supported some ethnic backgrounds more than others.

E. Limited Support for Immigrants and Foster Children

- Foster and newcomer students struggled to find openings in school because they arrived in the country during the academic term or moved across foster homes at inopportune times

“So the legal guardian reached out to me and said, I need have no transportation.” (P1)

“my preference would be to be able to meet them and have a one-on-one sort of liaison.” (P1)

“They need to be in a like Asian or Brussel Carnichael school.... because I don’t want them to get like culture shock” (P2)

“at least giving them a chance or like a slot, like considerations for them [immigrants] to be there.” (P1)