

Who we are

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As a team, our members have helped redesign allocation methods for:

- Boston Public Schools
- NYC High Schools
- Medical residency and fellowship matches
- Market for new economics professors
- New England Program for Kidney Exchange

What we do

Reminder: All assignment systems on the table are parent-guided, at least to some extent.

We do...

- ...help ensure that the parent-guided part of assignment functions well. This is what we do best.
- ...help the Board understand how using parent guidance in different ways can affect assignment.

We do not...

- ...judge how much parent-guidance there should be. This is for the Board to decide.

Once the Board has reached a decision, we want whatever is implemented to “run well”. **This is our foremost concern.**

What do we mean by “run well”

For the parent-guided component of an assignment system to “run well”, it must:

- Incorporate decisions made by the Board.
- Deal with technical issues that the Board might not be aware of.

Preview

- **Technical issues**
 - Simplicity
 - Non-wastefulness
- **Incorporating Board decisions**
 - 3 baseline assignment systems with differing levels of parent guidance
 - 2 “dials” that can be used to fine-tune any of the baseline systems.
- **What the data tell us**
- **What the data cannot tell us**

Simplicity

Learning about schools is tough on parents

- A parent must explore different school options before he or she can know which one best fits a child's needs.
- This is taxing for parents, but allows the SFUSD to use parent input to guide their assignment process.

Additional complexity?

- Once a parent has an idea of which schools best fit their child's needs, there is no need for any additional complexity; however, ...
- ...with many assignment systems it might not be in a parent's best interest to simply rank the schools in the order they truly like them.
- Why is this a problem?

Examples

- “I like School A best, but I don’t think my daughter has a good chance of getting in, so I will rank School B as my top school instead.”
- “I like School A better than School B, where my son has a sibling priority. Unfortunately, I am not sure that he will get in to School A, and I lose sibling priority if I don’t rank School B first. I guess I won’t rank School A after all.”

Why is this undesirable?

- Parents should not have to think about how likely their child is to get in to a given school, (which depends on the behavior of other parents).
- They should be able to just rank schools in the order of their true preference.
- Children whose parents do not have a good idea of how likely they are to get into various schools are at an extreme disadvantage.
- Such an assignment system adds unnecessary stress for parents, and may harm many.

Good news

- We propose assignment systems where it is always in the best interest of a parent to just rank schools truthfully. We call these systems “**simple**”.
- **All** of the assignment systems presented here have this property.
- **Suggestion**: Whatever assignment system the Board adopts should be **simple** in the way we have just described.

Non-wastefulness

What is non-wastefulness?

- Say we are considering two assignment systems that both fulfill the Board's goals equally well.
- The only difference between the two is that one gives 60% of parents a school they ranked, while the other gives 20% of parents a school they ranked.
- **Non-wastefulness** says that we pick the system that gives 60% of parents a ranked school.
- **Suggestion**: Whatever assignment system the Board adopts should be **non-wasteful** in the way we have just described.

A warning

- **Simplicity** and **non-wastefulness** sound like common sense; however, ...
- ...many districts unwittingly use assignment systems that do not meet these guidelines.
- In fact, the current Diversity Index system is neither simple nor non-wasteful.
- This is not because diversity was considered, but rather is because of how those diversity considerations were implemented.
- **Our suggestion is that any system that the Board adopts should stand up to these two criteria.**

Roadmap

- Technical issues
- **Incorporating Board Decisions**
- What the data tell us
- What the data cannot tell us

Incorporating Board Decisions

We will present:

- 3 **baseline** assignment systems with differing levels of parent guidance.
- 2 “**dials**” for fine-tuning these baseline systems.

Baseline assignment systems

Our baseline systems are differentiated by the extent that they allow for parent guidance in the assignment process.

In all of these systems, students are asked to rank 7 schools.

Local assignment with city-wide Choice

- Initially assigned to neighborhood school.
- Students can only rank city-wide schools.
- Transfers are processed when feasible.

Local assignment with Choice

- Initially assigned to neighborhood school.
- Students can only rank All schools.
- Transfers are processed when feasible.

Choice based assignment

- Students are not initially placed anywhere.
- Assignment is based on what schools students rank.
- Many flavors we discuss below.

Preferences

Given the discussions so far, we introduce the possibility of:

- **Local preference:** Students who live in the attendance area of the school receive higher preference.
- **Academic Preference:**
 - K: Students whose local school is a low-API school receive higher preference.
 - 6 and 9: We could use the local or the currently attended school to determine the academic preference status.

Preferences as “dials”

Local preference lets students attend their neighborhood school (as long as there is space) if they rank it.

This may crowd out students from other neighborhoods who want to attend (and prefer that school over their local school).

Note the tradeoff: The local preference dial cannot place more students locally *and at the same time* give more opportunity for students to attend who are not local.

Preferences as “dials”

These preferences are “dials” that can be used to adjust the final assignment in a predictable way.

Academic preference increases opportunity for students in low API attendance areas to attend higher-API schools.

This will reduce the number of students enrolled in low API schools.

Note the tradeoff: The academic preference dial cannot place more students at low API schools *and at the same time* give opportunities to students to leave these schools.

“Dials” allow for fine-tuning

Preferences are not an on/off sort of thing, but rather allow for a **spectrum** of policies

We could have an academic (or local) preference for

- Every seat (100% of seats)
- No seat (0% of seats)
- Some seats (? % of seats)

These dials are for the Board to adjust as they try to achieve their goals.

The “dials” can also be adjusted from year to year to deal with changing demand patterns and district priorities.

Things to think about concerning the “dials”

- What fraction of seats have academic preference?
- What fraction of seats have local preference?
- How do these two preferences interact: Do we give first academic and then local preference (or vice versa)?
- Are there some programs where we want preferences and others where we do not?
- Who qualifies for academic preference?

Roadmap

- Technical issues
- Incorporating Board Decisions
- **What the data tell us**
- What the data cannot tell us

Initial note

All simulations we consider give top preferences to

1. Inclusion students
2. Newcomers
3. Students currently enrolled in schools that have not made Adequate Yearly Progress, as defined by the No Child Left Behind Act (non-transitional grades)
4. Siblings

These preferences are held over from the current assignment system

Extra preferences in simulations are given only after these

Simulations

- To get at how the options on the table might perform, we ran simulations using parent rankings in the Round 1 Kindergarten data for 2008-2009
- We look at all of the baseline systems and a few very coarse settings of the dials
- These are just to give a flavor of what different assignments can accomplish.
- Other dial settings and fine-tunings are possible.

Five simulations

Local Assignment with city-wide Choice (1)

Local Assignment with Choice (2)

Choice based assignment

- Local preference (3)
- Academic preference (4)
- Both Academic and Local preference (5)

We also present outcomes from the **Diversity Index** system, for comparison.

Tradeoffs to consider

- Students whose local school has low academic performance (low API) and who can attend a higher-API school is a measure of opportunity given to those students. It may at the same time reduce enrollment at those schools.
- Local preference increases predictability but may have diversity costs.

Proportion of students who receive a school they ranked

Simulation	1 st rank	1 st or 2 nd	Not ranked
Local + city-wide	39%	52%	34%
Local + All	52%	68%	19%
Choice with Local Pref.	53%	69%	16%
Choice with Academic Pref	53%	68%	17%
Choice with first Academic then Local Preference	54%	69%	17%
Current System (DI: Diversity Index)	54%	68%	20%

Local + city-wide is the outlier here: Importance of carefully drawn attendance areas that take into account any city-wide program (present or future) ₂₇
 3% corresponds to about 150 kids.

Ethnically isolated schools (here use 60%, but maybe other % may be useful to look at too)

Simulation	> 60% of a single ethnicity
Local + city-wide	16
Local + All	15
Choice with Local Pref.	22
Choice with Academic Pref	19
Choice with first Academic then Local Preference	19
Current System (DI: Diversity Index)	21

DI results in more ethnically isolated schools than any parent guided assignment system that uses Academic Preference

Kids from low API neighborhoods that can attend a higher API school

Simulation	% of kids in higher API schools
Local + city-wide	32 %
Local + All	45 %
Choice with Local Pref.	46 %
Choice with Academic Pref	55 %
Choice with first Academic then Local Preference	54 %
Current System (DI: Diversity Index)	49 %

DI assigns fewer underserved kids to higher API schools than any parent guided assignment system that uses Academic Preference.

Number of schools that have more than a given percentage low SES students

Simulation	55 %	60 %	65 %
Local + city-wide	17	12	10
Local + All	19	14	9
Choice with Local Pref.	23	16	11
Choice with Academic Pref	14	14	8
Choice with first Academic then Local Preference	21	16	9
Current System (DI: Diversity Index)	19	13	10

Demand for Neighborhood Schools

Of the 4266 students who submit rankings in Round 1 for the academic year 2008-2009 a total of 1947 kids rank their local school (45.6%)

Percent of students that receive their local school or a school they rank higher (among kids that rank their local school)

Simulation	Percentage
Local + city-wide	85 %
Local + All	83 %
Choice with Local Pref.	85 %
Choice with Academic Pref	72 %
Choice with first Academic then Local Preference	81 %
Current System (DI: Diversity Index)	72 %

Properly tuned Choice systems are not less likely to be predictable compared to local assignment systems.

Almost all systems are more predictable than the current system.

Roadmap

- Technical issues
- Incorporating Board Decisions
- What the data tell us
- **What the data cannot tell us**

Data have limitations

- Our simulations are informative, but there are other issues that data cannot address well.
- The only way to deal with these sorts of issues is to be aware of them and let experience be our guide.
- Designing a school assignment system is an interesting interface between data work and experience-based knowledge.

Every district is different

- The following may or may not be big concerns for the SFUSD. It is hard to address them with data, so the Board will have to use its collective wisdom concerning public education in San Francisco.
- We do not know if these issues will come up in SFUSD. We just want the Board to be aware of them.

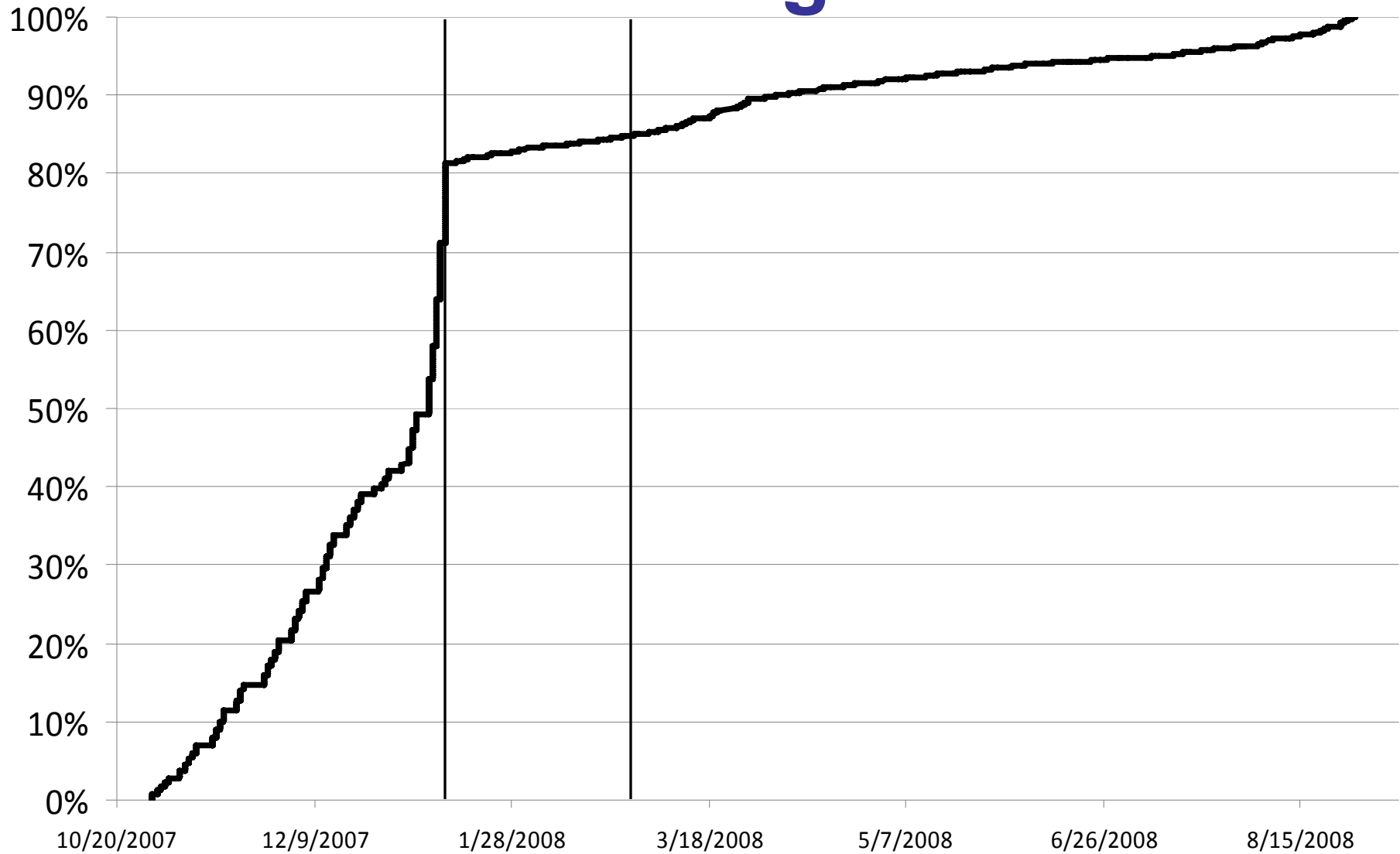
Intangible issues

- Too much emphasis on neighborhood could possibly induce parents to move for schools they prefer. Who can move and who can't?
- We should think about whether policy changes could possibly change attitudes about private and charter school alternatives to the SFUSD.
- All assignment systems have weaknesses, so instead of looking for the “perfect” system, we might look for a system whose weaknesses are easily ironed out by supplementary policies.

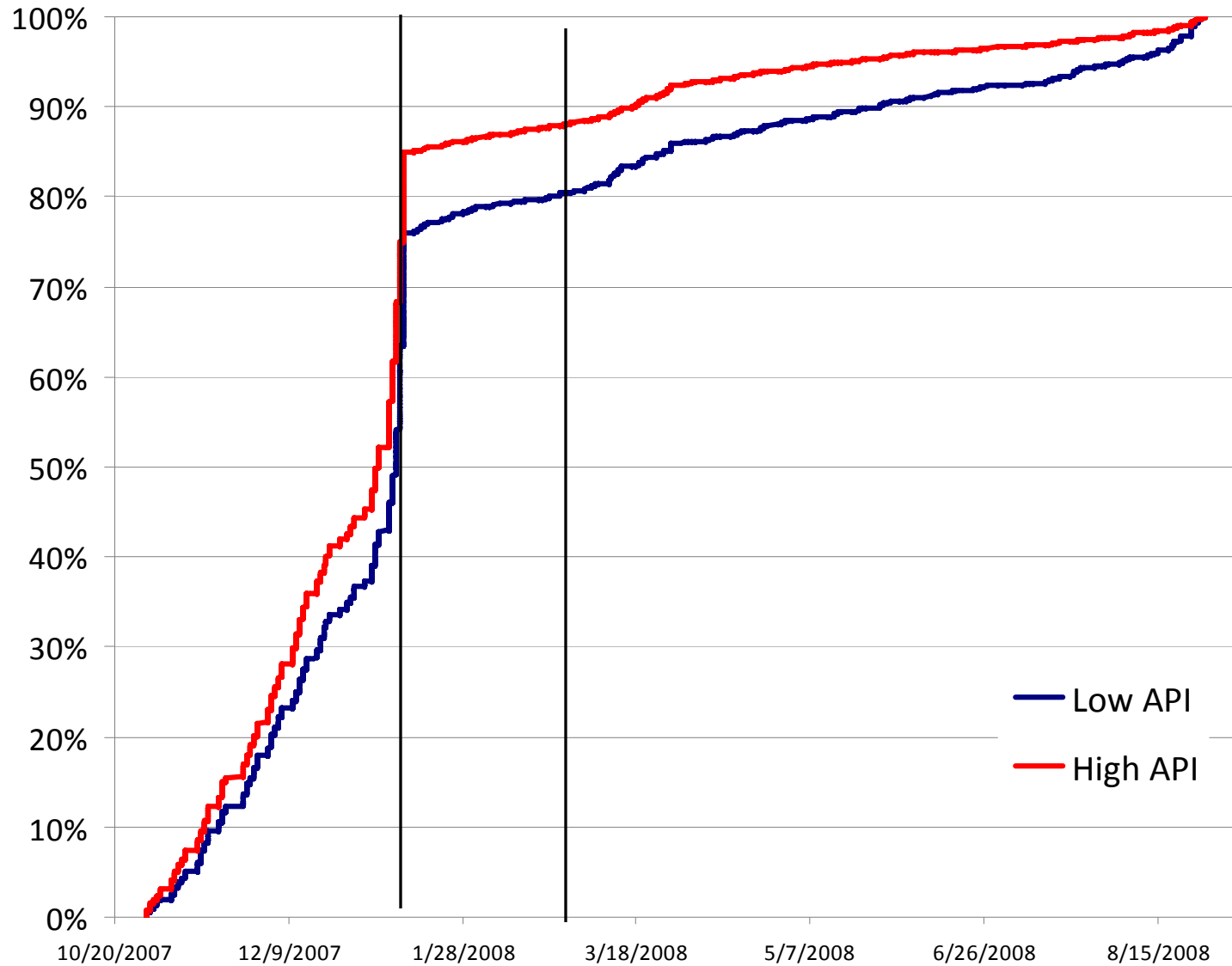
Parting note: due dates

- Under the current system, students who submit their school rankings after early January are considered late.
- Being late carries a substantial penalty
- We know that about 20% of students submit their rankings late
- Could moving back the due date help with equity?

When do parents submit rankings?



When do parents submit rankings



Due date analysis

- The tradeoff in moving the date back is that we must then give assignments to parents later
- The benefit is that we have a chance to give around 10% of students a more fair chance of getting a school that they rank.
- More students in underserved neighborhoods submit late. Moving the due date could help to equalize opportunity and narrow the achievement gap.
- **Caveat:** We can't help all students in this way, as many show up less than a month before the first day of school and were not previously in SFUSD schools.

Summary

- Using simple and non-wasteful assignment systems seems like a common sense first step to achieving Board goals.
- Three assignment systems, distinguished by differing levels of parent guidance.
 - Local assignment with city-wide Choice
 - Local assignment with Choice
 - Choice-based assignment
- Two preferences can be used as “dials” to fine-tune for specific Board goals.
 - Academic Preference
 - Local Preference

Summary

- Data is important, but experience informs us where data cannot answer
 - How will SFUSD policy changes affect attitudes about private and charter schools?
 - Will parents move if the assignment system focuses too much on where a student lives?
 - Can potential weaknesses be ironed out with supplementary policies?
- Moving back the submission due date could help around 10% of students get a better chance of getting schools that they rank.

Thanks