



Matching Practices for Secondary Schools – Germany

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German school system

Germany is a federal state consisting of 16 States (Bundesländer). Education policy is decided at the level of the States. Depending on the State, education is compulsory for nine or ten years with the first four or six years being primary school. Primary and secondary school education in Germany is mostly public and free of charge. There are some private schools, but only about five to six percent of German students attend private schools (this number is increasing however). Private schools are allowed to charge school fees, but most of them receive large subsidies and school fees are kept relatively low. They can also select students according to their own set of criteria. This country profile describes school admissions for public schools.

Traditionally, there have been four types of (public) secondary schools in Germany: Gymnasium, Realschule, Hauptschule, and, since the 1970's, Gesamtschule, a combination of the first three. These types of schools differ in length, curriculum and final qualification. Gymnasium is the main track for students to enter university, equivalent to the French lycée or the Italian liceo. At the end of Gymnasium, students receive the Abitur, allowing them to take up university studies. About a third of German students attend a Gymnasium, and this number has risen over the years. [3] Gymnasium lasts until grade 12 or 13.2 Realschule lasts until grade 10 and leads to the 'Mittlere Reife' (MSA), a degree historically compared to the English GCSE or the US high school diploma. It qualifies students to enroll in an apprenticeship or

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These country profiles are part of a collective effort by network members to map matching practices across Europe

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² Dating back to the Weimar republic, *Gymnasium* lasted for nine years (in addition to four years of primary school). During the Third Reich, *Gymnasium* was reduced to eight years. West Germany returned to nine years in 1949, while East Germany typically awarded the Abitur after 12 years. Since re-unification, both systems have co-existed with changes both ways. In fact, the length of the *Gymnasium* curriculum has been a hotly debated issue. Concerns have been raised regarding the international competitiveness of German students under either regime (called G8 or G9 in States where primary school lasts 4 years) and about compromises in curriculum. After a move to G8 in recent years, parents' and teachers' protests have led to compromises and changes. E.g., in some States, schools can choose whether to offer G8 or G9, or as in Berlin, *Gymnasiums* award the Abitur after 12 years while at *Sekundarschule* it is awarded after 13 years.

vocational school. *Hauptschule* lasts until grade 9 and leads to a lower secondary education degree after which students can decide to start work or enroll in some apprenticeship or vocational school. **Gesamtschule** is a comprehensive school where students do not enter any of the above tracks to start with. *Gesamtschule* avoids the early tracking that *Gymnasium*, *Realschule* and *Hauptschule* induce, with the consequence that some students may end up in wrong track choices.³ Rather, students gradually sort into one of the tracks, leading to the certificate relevant for that school type, as schooling progresses. The duration of *Gesamtschule* therefore varies between an additional five (*Hauptschule* track), six (*Realschule* track), or eight or nine (*Gymnasium* track) years of schooling. In addition, there are many close cousins of the traditional *Gesamtschule* that for example avoid separate tracks altogether or include primary school as well (e.g. *Gemeinschaftsschule*, *Sekundarschule*).

Admission procedures to secondary schools differ substantially across States (*Länder*). In some States, such as Bavaria and Saxony, grades from primary school are critical for entering *Gymnasium*. In other States, such as Berlin, Hamburg, Hesse, and North Rhine-Westfalia, the choice of a secondary school track (such as *Gymnasium* or *Realschule*) is a parental right: every child whose parents register the child for *Gymnasium* after primary school is guaranteed a space in some *Gymnasium*. This is the case of Hesse, for example, where Frankfurt is located (one of the three case studies below). Several States have recently moved from the grade-based admission regime to parental choice.

Within States, different districts can use different procedures. For example, the State of Hesse gives educational districts such as the City of Frankfurt virtual autonomy as regards to how the school allocation procedure is implemented. The rest of this profile describes three case studies which provide a sense of the heterogeneity and commonalities across Germany. The first deals with the State and city of Berlin, the second shows how secondary school seats are allocated in Frankfurt (Main), and the third part focuses on the State of North Rhine-Westphalia, detailing also the practices in some of its bigger cities such as Cologne.

³ Beyond settling children's educational fate early, the German multi-track secondary school system has been criticized for generating segregation. This has become more pronounced as *Gymnasium* is becoming more popular, and the alternatives to *Gymnasium* – especially *Hauptschule* and *Realschule* – allow students to take up fewer and fewer occupations. Parental choice is seen as having an ambiguous influence on segregation: it avoids the determinism of grade-based mechanisms but also acts as a social selection mechanism.

Summary box

Organization of education	Mostly publicly funded schools.
Stated objectives of enrolment policy	All students should get a place at a school of suitable type. Beyond this principle, objectives differ across States with some States allowing some preference input while others do not. Recently, States have moved towards allowing for more school choice.
Who's in charge?	Shared responsibility of schools and districts.
In place since	Varies across States and districts
Available capacity	Decided by the district or the school, depending on the State
Timing of enrolment	Exact timing varies across States and districts, but takes place during the first few months of the year.
Information available to students prior to enrolment period	Primary school teachers advise students on suitable secondary schools; schools offer Open House Days; schools or districts may publish other relevant information depending on the State and district.
Restrictions on preference expression	In districts allowing choice, parents can express their preferences for up to three schools, but some districts restrict preferences to one or two schools (at a time).
Matching procedure	Varies across States and districts but variants of the first-preference-first mechanism are common; admission decisions are typically taken by schools (decentralized). Manual coordination is used in some districts to improve the final allocation.
Priorities and quotas	States provide guidelines for acceptable criteria for priorities and quotas. Districts can add further constraints. It is common for schools to have their own admission criteria (within guidelines).
Tie-breaking	Schools (or districts when some district level coordination is used) can use lotteries or manual decisions.
Further special features	Lots of local variations in the procedure and criteria.

Secondary Schools in Berlin

Background on Berlin

Berlin is one of two federal States in Germany where primary school covers six years (age 6-12), rather than four.⁴ Until recently, there existed four secondary school types: *Gymnasium*, *Realschule*, *Hauptschule*, and *Gesamtschule*.

One of the most pressing problems in Berlin are failing schools, in particular among the *Hauptschulen*, as better students (and more ambitious parents) trying to apply at other nearby schools or are even moving to a different neighborhood. In 2010, in an attempt to remedy this problem, Berlin moved to a two-tier system of *Gymnasium* and the new *Sekundarschule* that replaced *Real-*, *Haupt-* and *Gesamtschule*. The *Sekundarschule* offers the Abitur exam after 7 years, while students at a *Gymnasium* have to pass the Abitur exam after 6 years.⁵ Both school types also offer the MSA after 4 years.

Both types are subject to the same application procedure. In 6th grade, the primary school teachers recommend one of the two school types to their students (based primarily on grades). However, these recommendations are not binding and students are free to apply at any school. Moreover, if students' preferences w.r.t. specific schools cannot be satisfied, they are guaranteed a seat at their preferred type of school.

Two additional details of the Berlin public school system should not go unmentioned. First, besides the primary and secondary schools described above, there exist *Gemeinschaftsschulen*, which start at grade 1 and continue until grade 10, 12 or 13 depending on students' choice of track. They try to attract a heterogeneous group of students. The first of currently 22 *Gemeinschaftsschulen* were introduced in 2008.⁶ Because they start at grade 1, students of *Gemeinschaftsschule* can continue straight into secondary education without further application. Second, there are 34 *Gymnasiums* that admit some of their students after 4 years of primary school (and lead them to the Abitur over a course of 8 years). For these seats there are about twice as many applicants and admission is typically based on entrance exams.

Finally, apart from the public schools described above, about 10% of Berlin's 300,000+ students attend private schools – a number that has increased by more than 70% over the last decade. Private schools receive partial, yet substantial, funding from the State of Berlin (93% of the wage bill at a hypothetical public school of the same size, which amounts to about two thirds of the private schools' expenditures). They are free to decide on tuition and admission but the school board supervises them with the declared objective that there should be no exclusion of students based on parents' income.

Description of current practices

⁴ The other state is Brandenburg. In 2010 Hamburg's parliament voted unanimously to switch to 6-years of primary school. However, in the same year, the decision was reversed in a successful referendum, initiated and supported first and foremost by parents of (prospective) *Gymnasium* students.

⁵ In addition, the *Sekundarschule* has other advantages, such as smaller class sizes than *Gymnasium* (24 versus 32 students).

⁶ Besides *Gemeinschaftsschulen*, there exist a total of 105 *Sekundarschulen* and 92 *Gymnasiums*.

The Senate Department for Education, Youth and Science regulates the admission procedure for public secondary schools in Berlin. City districts decide on capacity and are responsible to supply each of their students with a seat at their preferred type of school. Schools may set admission criteria that fit a school's chosen profile within a certain set of restrictions (see below). The current policy for school admission has been in place since the academic year 2010-11.

Application Form: In late January / early February, students in their last year of primary school receive a single application form together with a recommendation for a school type (*Gymnasium* or *Sekundarschule*). With this form, parents/students apply at their school of choice in person. On the application form, they can also list a second and third choice.

Application Timeline: The admissions procedure lasts for about nine weeks from mid February to end of April. During the first two weeks, parents can apply to their top choice. After that, each school decides on admissions and forwards unsuccessful applications to the schools listed as second and third choice, respectively. For the remaining unassigned students, the district's school board provides an alternative offer. During the last week of April, students are informed about either a successful admission to one of their three choices or about the alternative offer.

Decision Process – first round: In the first round, if applications exceed the capacity of the school, 10% of the seats are reserved for applicants with special hardships (the law is not specific on the definition). If there are remaining seats among these 10%, applicants who already have a sibling at the school have priority over these seats.

Next, 60% of seats (plus any remaining of the above 10%) are allocated based on school specific criteria, set as a combination of

- (weighted) average of primary school grades
- extracurricular activities (e.g. sports, playing an instrument)
- entrance exam (written or oral) or a practical exercise
- student's choice of second foreign language

Admission criteria need to be justified by the school's profile (e.g. artistic, athletic, language or math oriented) and have to be approved by the district's school board. The majority of schools simply use average grades as their sole admission criterion.⁷

For the last 30% of seats, any remaining siblings among the applicants benefit from a priority. Finally, a lottery is used to allocate remaining seats among remaining applicants.

All first round admissions are definitive.

Decision process – second and third round: Rejected applications are forwarded to the students' second choice school. Here, applicants from that school's city district enjoy priority over students from outside districts. Any remaining seats are then allocated based on a weighted average of primary school grades. Rejected applications are forwarded to the third choice school, where the same decision process is applied. In each round, admissions decisions are definitive.

Clearing Period: For students not admitted at one of their three top choices, the home district's school board has to provide an alternative offer. They first try to find open seats within their own district, before

⁷ 63% of all *Gymnasiums* based their decision on a simple grade point average; for overdemanded *Gymnasiums* the number is 52%. *Sekundarschulen* relied more heavily on a simple grade point average; 87% of all *Sekundarschulen*, 79% of overdemanded *Sekundarschulen* (numbers for 2012/13, see [4])

organizing an *Ausgleichskonferenz*, i.e. a “balancing conference” to match seats and students across districts. In this process, districts may decide to increase or reduce capacity at some schools.

If students do not accept the alternative offer, they can look for open seats themselves – each district’s school board provides information on seats that are still available at that time.

Performance

The following data for 2011/12 and 2012/13 are taken from a report by a senate commission that evaluated the experience with the new mechanism (see [4]).

2011/12: For *Gymnasium*, 10,573 of 11,527 applicants received their (reported) first choice (91.7%).⁸ In addition, *Gymnasiums* admitted 463 students to their second and 217 students to their third choice school. This amounts to a total of 97.6% who received a seat at one of their three top choices.⁹ For the *Sekundarschule*, the numbers are not quite as good. 11,939 of 15,184 received their top choice (78.6%), while 1,177, resp. 536, received their second or third choice (for a total of 89.9%).

2012/13: For the *Gymnasium*, 8,435 of 9,062 applicants received their (reported) first choice (93.1%), 335 their second and 126 their third choice. This amounts to a total of 98.2% who received a seat at one of their three top choices. The numbers for the *Sekundarschule* improved slightly, compared to the previous year. 10,715 of 12,895 received their top choice (83.1%), while 892, resp. 367, received their second or third choice (for a total of 92.9%).

2013/14: (Press release by the Senate Department, April 25th 2013) Combining both types, 18,331 of 20,626 applicants received their top choice (88.9%), while another 1,606 received their second or third choice (for a total of 96.7%). The remaining 689 applicants received an alternative offer and were free to enroll at any *Sekundarschule* or *Gymnasium* that had vacant seats – at both types, there were about 700 seats remaining.

Recent policy changes

The admission process described above was introduced in 2010 as part of a larger school reform (arguably its most important part concerned the introduction of the *Sekundarschule*). At the time, Berlin was governed by a coalition of social democrats (SPD) and socialists (Die Linke) and the declared objectives included improved access to good schools for underprivileged students, as well as greater diversity of student composition within schools (i.e. a more equal distribution of students across schools).

With respect to improved access for underprivileged students, one of the most important aspects was the abolition of geographical priorities. In order to increase heterogeneity, a lottery was introduced as a new (and controversial) component.

The fraction of seats covered by the lottery scheme was subject to debate. The socialists favored a fraction of more than 30% of seats¹⁰, while the social democrats were split – some supporting a larger

⁸ Given the procedure used (short ranking list and first-preference-first allocation), it may not be in the interest of students to report their true first, second and third choices. More of this below.

⁹ Here (as in [4]) it is assumed, that students who rank a *Gymnasium* as first choice also rank *Gymnasiums* as second and third choice and that the same is true for applicants at *Sekundarschulen*. Unfortunately, there is no data on the individual application forms.

¹⁰ In addition, they wanted to include social criteria, e.g. reserve a certain fraction of seats for children who receive welfare benefits.

fraction as well¹¹, as it would allow for a more diverse mix of students, while others worried that a lottery would be perceived as “arbitrary”, rather than “fair”, by the general public. In the end, both sides agreed on a fraction of 30% of seats that would be subject to the lottery.

The lottery was opposed by the conservatives (CDU), who criticized it as arbitrary. Moreover, they supported the old geographical priorities and called for prioritization of siblings. When a new coalition between SPD and CDU was formed, following the election in 2011, the coalition agreement declared that the new admission process should be amended so as to i) provide students with seats at a school closer to their home and ii) guarantee and expand the current level of diversity at schools. Moreover, both sides agreed to give priority to siblings in the admission decision.¹²

In the presence of residential segregation, residence-based priorities clash with the attempt to guarantee diversity in schools or, more specifically, to guarantee access to popular schools for underprivileged students. As a compromise, the new law and its associated guidelines, enacted in 2014, (re)introduced residence-based priorities, but confined them to the admission decision for the second and third choice schools (keep in mind that most applicants are admitted at their reported first choice). Moreover, the new rules give priority to siblings – both in the 10% tier reserved for hardship cases, as well as among the last 30%, thereby (slightly) further reducing the importance of the lottery.

Perceived issues

Strategic Behavior: As a direct acceptance mechanism, the current procedure is not strategy-proof. In particular, if one lists a popular school as first choice, there is a high chance of being rejected in round 1, and the chances of being admitted to the second or third choice school are slim, since seats at these schools are likely to be taken by the time of round 2 or 3. This induces two natural manipulations: rank a less popular school as first choice so as to secure a seat in round 1 or, alternatively, rank a relatively unpopular school as safe second choice, so as not to be subject to the clearing period’s proceedings. These strategic considerations and the associated uncertainty are reported as “stressful” and, as one parent remarks, “there should be the option to report the first preference truthfully, without having to fear lower priority at the second choice school.”¹³

Another concern is that the strategic complexity favors children of well-educated parents. In fact, the higher percentage of applicants at *Gymnasiums* who are admitted to their first, second and third choice could be seen as suggestive evidence for that conjecture. Applicants at *Sekundarschulen* seem to make less use of the “natural manipulations” described above and, as a consequence, are four times as likely not to receive one of their three top choices.¹⁴

¹¹ The first draft by Senator Jürgen Zöllner (SPD) included a fraction of 50%.

¹² Übergangungsverfahren in die Oberschule

Das neue Verfahren zur Schulaufnahme soll nach Abschluss des Aufnahmeverfahrens 2012/13 insbesondere hinsichtlich der wohnortnahen Versorgung wie auch der Absicherung einer heterogenen Schülerschaft weiterentwickelt werden. Wir werden prüfen, ob es einer Veränderung der Auswahl-kriterien bedarf, um Heterogenität auch an übernachgefragten Schulen zu fördern, und die Schulen ermutigen, mehr Verantwortung für die Auswahl ihrer Schülerschaft zu übernehmen. Wir wollen eine stärkere Profilbildung der weiterführenden Schulen. Die Koalition will eine rechtssichere Geschwister-kinderregelung einführen. Die Härtefallregeln bleiben erhalten.“ (Koalitionsvereinbarung, 2011, S. 49).

¹³ Jedes Kind sollte sich eine echte “Erstwunschschule” wählen dürfen, ohne befürchten zu müssen, dann bei der Zweitwunschschule nur nachrangig berücksichtigt zu werden.“ See [5].

¹⁴ According to [4], in 2011 there was a total capacity of 11,945 seats at *Gymnasiums*; 11,527 students applied at a *Gymnasium* as their first choice and 11253 Students were admitted at a *Gymnasium* as their first, second or third choice school. For *Sekundarschulen*, capacity was 15,667; 15,184 applicants ranked a *Sekundarschule* as

Information on schools' popularity: Schools differ in the amount of information that they provide regarding the number of applicants and the necessary GPA that guaranteed admission in previous years. Some principals offer detailed information, and go as far as publishing the current number of applicants online during the two week application period [8]. Others refuse to provide any information, as they fear that it could create discrimination of students who owe their admission to the lottery, rather than to their grades. Still others seem to supply information strategically: one school that has been under-demanded in all recent years (and therefore admitted all of its applicants) informed parents that a GPA of 1.8 (on a scale from 1 (best) to 6 (worst)) was enough to secure a seat in previous years. While technically correct, the underlying motivation seems to be to create the impression of an elite status in order to attract better applicants [9].

Parents complain about a lack of information that makes it harder for them to optimally choose their three top schools [5]. However, school boards fear that detailed information creates a false sense of security – and parents might feel cheated (and, more importantly, inclined to sue the district) if they are rejected at a school they deemed safe based on last year's data.¹⁵

Sibling priority: The first guideline accompanying the new mechanism (see [7]), sought to give priority to siblings as part of the 10% tier reserved for hardship cases. However, this was not explicitly formulated in the law (see [6]) and was dropped in the guideline's second version. When parents complained about the lack of sibling priority, a spokesperson for the Senate announced that there would be special treatment for siblings if there exists additional hardships, e.g. for children of single mothers. The majority view of the Senate commission [4] was that for children between ages 12 and 19, there is no need to make special accommodations for siblings. Nevertheless, 2014 saw the introduction of an explicit sibling priority into law, in partial fulfillment of the CDU's campaign promises on the school admission process.¹⁶

Geographical priority: The abolition of geographical priorities was one of the most important aspects of the new admission process. In particular, it allows underprivileged students of districts with low quality schools to apply in districts with more popular schools – this reduces the role of real-estate prices, or parents' income as an (indirect) selection criterion. Of course, this move comes at the expense of parents/students who live in the neighborhood of popular schools. Moreover, city districts are responsible to provide a seat at some school to every student living in that district. Hence, districts that house popular schools experience a net inflow of students, with the consequence, that i) (relatively) many of its students are subject to the clearing period proceedings while ii) (relatively) few seats are remaining in the district's schools. To address the objections by (some) parents and the problems faced by (some) districts, the new law reintroduced geographical priorities, but only for the second and third choice school [6].

first choice and 13,652 students were admitted at a *Sekundarschule* as their first, second or third choice school. Of course, a rigorous test of this hypothesis would require information on parents' true preferences. In general, the smaller number of top-choice assignments at *Sekundarschulen* could also be the consequence of a relatively strong correlation in preferences (relative to the preferences over *Gymnasiums*), for example caused by the desire to avoid certain schools that are considered "failing schools."

¹⁵ In the first year under the new mechanism, one principal of a previously unpopular school promised parents that an application at his school would be safe so that parents could avoid the controversial lottery. Unfortunately, some parents' fear of a lottery was so strong that the school was eventually oversubscribed and had to reject some applicants after the lottery stage.

¹⁶ Apart from the introduction of a sibling priority, conservatives had campaigned for the abolition of the lottery component (see CDU campaign program "100 Lösungen für Berlin", No. 34).

Legal concerns: When the new mechanism was introduced, there were concerns that both the abolition of neighborhood priorities and the new lottery component would lead to many legal complaints and lawsuits, and it was unclear how many of them would be successful. At least initially, the first concern turned out to be valid; filed complaints with school boards spiked to 1,161 in 2010, and resulted in 156 lawsuits. However, by and large courts have upheld school board decisions and the new law in general, so that the number of filed complaints (and lawsuits) had been reduced to 415 (22) in 2012 (see [4]).

Secondary schools in Frankfurt

Background Frankfurt

In Hesse as in most other German states, students enter secondary schools after four years of primary school. Although teachers recommend a school track (such as *Gymnasium*, *Realschule*), parents have the final decision. In the following, the focus is on the specific mechanism used in Frankfurt (Main), the largest city of Hesse, to allocate students to *Gymnasium*.

The organization of the “Frankfurt School Mechanism” is shared between State, city and school. Its primary goal is to give as many applicants as possible one of their preferred schools. Each school decides for itself which students to admit. Admission criteria are set by the schools independently; they have to be objective and non-arbitrary. Valid criteria include neighborhood priority, siblings, etc. Grades are not valid criteria. Rules and targets of the admissions system are adjusted every year, given demographic predictions and the performance of the matching procedure in previous years. Each school has a set quantity of seats, but capacity can be adjusted up or down depending on demand. Over time, these quantity targets can be adjusted depending on school infrastructure.

Regarding the timing of the process, parents submit their preferences by March and the admission process begins by April. Information about the schools, including curriculum, timetables and demographics, is provided at the time of preference submission. Schools may also choose to report their demands in previous years directly to parents upon request. Primary school teachers serve as recommenders and identify schools where admission is competitive. Final admissions are made as late as September.

A separate but identical procedure is used for *Gymnasium*, on the one hand, and *Hauptschule*, *Realschule* and *Gesamtschule*, on the other hand. The matching procedure is largely decentralized. It relies on some combination of the decentralized variant of the first-preference-first mechanism (aka the Boston mechanism) and manual trades, with the maximization of the top three preferences as its main objective.

A special feature of the Frankfurt mechanism is the role of the local matchmaker. Not only does the matchmaker choose target capacities for all schools, but he also mediates the second and third rounds of the admission process. He also deals with ties. His primary goal is to maximize the number of first, second and third choices that are satisfied, i.e. to minimize the number of students sent to schools not listed as one of their up to three top choices. This may involve swapping students between schools if this helps increase the number of students getting their third choice and above.

Description of current practices

Step 0

The matchmaker publishes target capacities for each school based on his/her estimates of next-year school entrants and information from school regarding possible year five repeats.

Step 1 – preference submission

During the last year of primary school, parents and students are invited to open-house days at all secondary schools. The head teacher at primary school advises parents regarding suitable school type and specific school choice. By early March, parents list up to three schools in order of preference. Sometimes head teachers talk over these lists with the parents, but ultimately the parents are free to choose. Importantly, if a parent chooses to select *Gymnasium* schools on that list, the child is guaranteed a *Gymnasium* spot at some school. Primary schools forward these lists to the matchmaker at the city hall by the end of March.

Step 2 – matching

Step 2.1 – round 1

Applications are forwarded to students' first-priority schools in April. School principals select students up to capacity based on criteria such as the student's motivation for the specific profile of the school, neighborhood priority, siblings, preference for eight- or nine-year cycle, etc. Criteria including name, religion, grades, or arbitrary selection cannot be applied. However, each school is free to apply their own criteria and make the choices themselves. Principals submit their admission lists to the matchmaker.

Step 2.2 – rounds 2 and 3

In the summer, all school principals participate in the matchmaker's conference. Principals bring their admission lists and announce year-five repeats and effective vacancies. The matchmaker publicizes second priorities of unmatched students, and schools with open vacancies are thus filled. In some cases, trades between schools may occur; i.e. a previously matched higher-priority student may be swapped for a currently unmatched lower-priority student if the higher-priority student can also be matched elsewhere. In some cases, under extreme over- or under-demand, schools can be asked to open or close an extra class. The matchmaker repeats the process with third priorities.

Step 2.3

At the end of the conference, a list is made with remaining school vacancies.

Step 3 – clearing

Head teachers at primary school give the list of remaining vacancies to the parents of unmatched students and slots are filled on a rolling basis, possibly involving several rounds.

Step 4

Parents unwilling to participate in Step 3, or unable to be matched anywhere, are matched by the matchmaker depending on capacity and neighborhood priority.

Performance

In 2012/ 2012, 2,520 students applied to Frankfurt *Gymnasiums* with capacity of 2,534 seats. 2,167 applicants (86 percent) obtained their first choice. 240 (9.5 percent) got their second or third choice, of

which roughly half are second and half are third choice but this is not recorded explicitly. 96 (4.4 percent) chose from the remaining schools with capacity. 17 (0.1 percent) were allocated a school by the matchmaker.¹⁷

Recent policy changes

The rules and targets in the Frankfurt school admission procedure are adjusted every year, given demographic forecasts and the performance of the match in previous years.

Perceived issues

An issue with the “Frankfurt School Mechanism” is that it is not strategy-proof for parents to submit their truthful ranking of schools. There are several incentive issues resulting from the mechanism’s focus on top-three choice satisfaction maximization. Most evidently, parents can attempt to “force” their children into their top choice by submitting truncated lists, even though the matchmaker and some schools such as the *Heinrich-von-Gagern-Gymnasium* do not prioritize those applicants and advise against this.

Moreover, the focus on maximizing the total number of top-three school allocations can create some further incentives for misrepresentation. These are created because some students who were initially allocated to their first or second choice may be “traded” in the open conference for students who ranked the school lower, if the students can still be placed in a lower ranked school. In this case, parents may strategically manipulate second and third choices for other competitive schools, even if these are not their true second and third choices. Finally, parents whose real preferences go for very competitive schools are often explicitly asked to also list a safe-bet lower-priority choice, i.e., to possibly misrepresent their preferences. Whether these theoretical concerns are real-world problems should be investigated further.

Since schools have preferences over students, the final match may be unstable. Thus, there could be pairs of students and schools who profit from side-contracting around the proposed matching. To enforce the final matching, the matchmaker and the matchmaker’s conference probably play a crucial role.

Finally, the performance of the “Frankfurt School Mechanism” critically relies on the quality of the matchmaker; in particular on the accuracy of his predictions and the diplomacy and effectiveness of his mediation during the school allocation conference. Under a good matchmaker, the flexibility of the mechanism may turn out to be dynamically more efficient than a rigid system.

Existing data and legal texts

Heinrich Nax has aggregate data for the “Frankfurt School Mechanism” and some data from one individual *Gymnasium*. General information can be found at [10].

Secondary Schools in North Rhine-Westphalia (NRW)

Background NRW

¹⁷ This information was provided to Heinrich Nax via telephone and email conversations with *Heinrich-von-Gagern-Gymnasium*’s principal Thomas Mausbach and the Frankfurt matchmaker himself, Dieter Sauerhoff.

In North Rhine Westphalia (NRW), students go to primary school for four years (age 6-10). Four main secondary school types exist: *Gymnasium*, *Realschule*, *Hauptschule*, and *Gesamtschule*. NRW recently introduced the *Sekundarschule* as a fifth school type which serves as an alternative to *Gesamtschule*. The *Sekundarschule* teaches students of all levels in the fifth and sixth year and then splits them according to their capabilities. After obtaining the “*Fachoberschulreife*”, students might continue at another school to obtain their “*Abitur*”. For better readability and because the two school types are very similar, we use the term *Gesamtschule* to mean both the *Gesamtschule* and the *Sekundarschule*.

Before the application procedure starts, primary school teachers in NRW recommend one of the school types *Gymnasium*, *Realschule* or *Hauptschule* to every student. The *Gesamtschule* is recommended for every student as it is intended to enroll students with heterogeneous performance. Since 2011 the primary school teachers’ recommendations are not binding any more. Students can apply for any school type of secondary schools.

The stated objective of the enrollment policy is that all students get a place at a school of suitable type whilst taking students’ preferences about specific schools into account. Available capacities are set individually by each school (according to overall guidelines). Parents receive information about the application procedure and general decision criteria. Demand figures from previous years are sometimes available. Some city districts give strategic advice to the parents. Parents apply to only one school at a time. In most city districts they are nevertheless allowed to express their second choice when applying to a school.

Description of current practices

The Ministry of School and Further Education in NRW regulates the admission procedure for publicly-funded secondary schools in NRW. City districts must follow the guidelines set at the level of the State, with some limited scope for own decision-making. The current policy for school admission in NRW has been in place since the academic year 2013-14. While application deadlines and admission criteria are centralized, the application procedure itself is decentralized – parents apply in person at the school of their (first) choice and schools decide mostly autonomously about admission, within the State and district guidelines.

Registration Form: At the beginning of each calendar year, students enrolled in the last year of primary school receive a registration form for application at a secondary school. The registration form allows for the application to one single school at a time. It is up to the city districts to inquire for a student’s second choice once the student applies at a school.

Application Timeline – early admission and general admission phases: The entire admission procedure for secondary schools lasts for six weeks in February and March and is divided into two parts – an early admission phase during the first two weeks and the general admission procedure starting in week three. If educational authorities expect that, within their district, applications for one or more schools of a certain school type are likely to exceed capacity, an early admission procedure for this school type may be requested. In the first week of the admission phase, students can apply to one of the schools eligible for early admission. The principals of the schools inform the parents by the end of the second week about the acceptance decision. From week 3 onwards, students can apply to all other schools. Students rejected in the first phase participate in the application process for the other schools just like all students who did not apply to a school yet.

Experience in 2013-14: Many cities in NRW, e.g. Cologne, Dusseldorf and Bonn, requested an early admission phase for Gesamtschule. The school authorities argued that in previous years, not only specific schools of this type faced excess demand but also that applications for this school type as whole exceeded available capacity. Students rejected during the early admission phase could then still apply for their most preferred *Gymnasium*, *Realschule* or *Hauptschule*. There are some cities, e.g. Bochum, that did not request any early admission phase but ran the admission procedure for all school types in parallel though they also face excess demand for some schools.

Decision Process: The timeline and coarse decision criteria are set centrally; the admission procedure is decentralized and sequential. If a school's applications exceed its capacity, the principal is required to base his/her acceptance decision on one or more criteria from a list issued by the State NRW. Eligible decision criteria (no particular ordering) include

- Siblings attending the school
- Well balanced quotas of boys and girls
- Well balanced quotas of students with different mother tongues
- For Gesamtschule: academic diversity
- Distance to student's home
- Distance to student's primary school
- Lottery

Furthermore, principals are asked to coordinate with schools of the same type in their neighborhood (possibly involving school authorities and the school governance as well). The goal of the coordination procedure is to assign as many students as possible to their school of choice and at the same time to find "reasonable" alternatives for rejected students. Alternatives might be a student's second choice or a school of the preferred type within the neighborhood. In practice, many city districts conduct admission conferences after the schools received the applications.¹⁸ Students are then informed about the decision. Either they are offered a school place (not necessarily their first or second choice) or they receive their registration form back.

Clearing Period: After the schools' admission decisions, there may still be students left without a school place or with an unsatisfactory offer. These students can request information about which schools have remaining capacity. The remaining seats are then assigned in a decentralized manner, for the most part on a first-come first-serve basis.

Performance

The data available about the performance of the current enrollment policy are very limited. The policy is recent and the decentralized nature of the procedure limits data availability. Some schools publish the number of applications they received. Structured data about how many students received their first or second choice do not exist. In their published reports, city districts concentrate on how many students received their preferred school type rather than the preferred specific school.

Cologne: In the application phase 2014, a total of 2,540 students applied to schools of the type Gesamtschule, whereas the total capacity for this type of schools was only 1,790 (see [12]). Those places were allocated during an early admission phase. For the school types *Gymnasium*, *Realschule*

¹⁸ There is no indication of problems with stability, i.e., schools and students side-contracting around the matching. Possibly these conferences play an important role to eliminate instabilities and to enforce the matching that was agreed upon.

and Hauptschule, most students were assigned to their preferred school type (but not necessarily their preferred school).

Bonn: For the academic year 2013-14, the schools of type Gesamtschule received a total of 979 applications, 305 students were rejected. [13]

Recent policy changes

In November 2012, the State of NRW modified its school law and harmonized the admission procedure for secondary schools as described above. Before then, city districts could decide more flexibly on the admission timeline.

Perceived issues

Parents and city districts discuss several issues with respect to the admission procedure.

Strategic Behavior: The current procedure is not strategy-proof, i.e. parents may benefit from not applying at their most preferred school. This especially occurs if the preferred school is assigned in the second admission phase. If the first choice is a popular school, parents risk losing the opportunity to get a seat at other schools when reporting truthfully. Therefore, parents might consider applying at a school in the early admission phase even if it is not their first choice. If they get accepted in the early admission phase, they face the strategic decision whether to take this “safe place” or decline the offer and try to receive a place at a school that is assigned in the later phase but might be more preferred. City districts sometimes even advise parents to speak with school principals about their chances before applying to a school and to consider “safe” schools as an alternative.

Missing Transparency: Parents complain about the limited transparency on school choice. It is not clear to them how many students received their first and second choice. Furthermore it is difficult to compare application numbers because the real first choices of the parents remain unknown. For instance, participating in the early admission phase does not influence the chances of getting admitted at schools that are assigned in the second admission phase. Relatively high admission numbers for schools in the early admission phase therefore might be due to the structure of the process.

Inequity: Parents complain that being assigned during the second admission phase is a disadvantage because the uncertainty is resolved later for them. Furthermore, if their first choice is assigned in the second phase, they do not have a second chance for another school in case their application is unsuccessful.

Cities complain that the school types *Gymnasium*, Realschule and Hauptschule have a structural disadvantage because they have to take the students that “are left”. Some school authorities fear that parents that would like to send their children to a *Gymnasium* opt out from the public school system because private schools decide earlier and that this flight could reduce the quality of the public schools. The city of Bonn, for instance, tried to get an exception for the admission procedure. They wanted to continue the admission procedure they used in the previous years. The request was rejected by the Ministry of School and Further Education in NRW.

Existing data and legal texts

School statistics are published each year by the school ministry of NRW (see [11]). The legal text regulating the admission procedure in NRW is available at

<https://www.schulministerium.nrw.de/docs/Recht/Schulrecht/APOen/HS-RS-GE-GY-Sekl> (§1).

The corresponding administrative regulation is available at <http://www.ler-nrw.de/archiv/APO-S1.pdf>.

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[2] Programme for International Student Assessment (PISA), OECD, 2000, 2003, 2006, 2009, 2012.

[3] Detailed information about the percentages of students enrolled in the different school types can be found at www.oecd.org/berlin/themen/pisa-internationaleschulleistungsstudiederoced.htm.

[4] In 2012, the Senate Department for Education instituted a commission to evaluate the new mechanism. Its final report includes most of the data on Berlin mentioned in this article – and much more. It can be found under https://www.berlin.de/imperia/md/content/sen-bildung/bildungspolitik/abschlussbericht_aufnahmeverfahren.pdf?start&ts=1414510485&file=abschlussbericht_aufnahmeverfahren.pdf

[5] Berlin's parent representative formulated a summary and a response to the Senate commission's report which can be found under www.lea-berlin.de. In addition, it published a collection of comments by parents that illustrate many aspects of the current procedure as perceived by parents: http://www.lea-berlin.de/downloads/Elternkommentare_Aufnahmeverfahren.pdf

[6] The legal framework, the so called Schulgesetz or SchulG (i.e. Berlin's school law), is available at gesetze.berlin.de. The admission mechanism is defined in §56. Note that the website allows to compare the law's current and previous versions.

[7] The guidelines that govern the law's implementation by schools and school boards, go by the name of Sek I-VO and are available at gesetze.berlin.de. Admission at over demanded schools is governed by §6. As for the school law, the website allows to compare current and previous versions of the guidelines.

[8] Der Tagesspiegel 17.02.2011, available online at <http://www.tagesspiegel.de/berlin/schule/oberschulen-anmeldeschluss-jetzt-kommen-die-taktiker-und-zoegerer-/3849992.html>

[9] Berliner Zeitung, 21.01.2013, available online at <http://www.berliner-zeitung.de/berlin/schulwahl-plaetze-aus-der-lostrommel,10809148,21510880.html>

[10] For general information see frankfurt.de and schulamt-frankfurt.lsa.hessen.de

[11] The official website of the Ministry of School and Further Education in NRW <http://www.schulministerium.nrw.de> publishes school and student numbers for each year and each school type.

[12] Kölner Stadtanzeiger, 21.02.2014, available online at <http://www.ksta.de/koeln/-gesamtschulen-so-viele-absagen-wie-noch-nie,15187530,26310714,view,asTicker.html>

General information about the schools in Cologne can be found at <http://www.bildung.koeln.de>.

[13] Detailed information and discussions about the school system and landscape in Bonn can be found at the homepage of Bonn's parent representative <http://www.ssp-bonn.de>.

MiP Country Profiles downloadable from matching-in-practice.eu

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