Estelle Cantillon

Regulating School Choice in Brussels

This article aims to contribute to the current debate on the optimal regulation of school choice in the Brussels Capital Region. We first summarize the current regulatory framework and make the distinction between the political objectives pursued by the regulation of school choice, and the procedure that implements these objectives. We argue that these two aspects can be analyzed separately. We then describe the specific challenges that the Region faces as far as school choice is concerned. Next, we analyze two scenarios consisting of a set of political objectives for school choice regulation in Brussels and a possible ranking among those. These political objectives echo some of the objectives for school choice regulation mentioned in the public debate but are tailored to the specific needs of the Region. Finally, we describe a procedure that implements these objectives. The exercise illustrates the type of arbitrage public decision makers need to make and several key practical aspects of the implementation.

Estelle Cantillon *holds a Ph.D. in Economics from Harvard University and is a FNRS Research Associate at the Université Libre de Bruxelles (Solvay Brussels School of Economics and Management and ECARES). Her current research lies on the boundary between industrial organization and market design. On the same topic, she has recently written a policy-oriented piece with Nicolas Gothelf on « la régulation des inscriptions scolaires: pourquoi et comment? » (Proceedings of the 18th Congress of French-speaking Economist, CiFOP editions).*

Contacts :

Estelle Cantillon, +32(0)2 650 38 40,
Estelle.Cantillon@ulb.ac.be

Michel Hubert (réd. en chef.), +32(0)2 211 78 53 –
+32(0)485 41 67 64 – hubert@fusl.ac.be

Introduction

Today, school choice regulation lies in the middle of conflicting demands: parents want to be able to register their child in a school of their choice, politicians want to restore education as an instrument for social mobility, schools want to be able to have an influence on their population, school networks want to maintain their autonomy and specificity, some want a more egalitarian non discriminating school system, others want a school system that rewards excellence.

This article has three objectives. First, and following up on Maniquet (2009) and Cantillon and Gothelf (2009), we take a step back and summarize the key issues in the current debate. In particular, we make two distinctions. The first distinction is between school choice regulation and social diversity: these two issues are distinct, even if school choice regulation can have social diversity as a goal. The second distinction is between the objectives pursued by school choice regulation and school choice procedures. Objectives are the result of a political comprise between the sometimes conflicting interests of stake-holders. The procedure is a method that implements these objectives. In this role, not all procedures are equally good and a "technical" discussion needs to take place alongside the political discussion.

The second objective of this article is to argue that school choice regulation is especially critical for the Brussels Capital Region. Moreover, the school choice situation in Brussels is different from that in other big cities in the country and it begs for a specific solution.

Finally, the third objective is to contribute to the debate on the shape that regulation of school choice could take in Brussels. To do so, we start from a set of political objectives as well as a possible ranking of these objectives. We then propose a procedure that implements them. The idea here is to build on the current debate and the specific challenges that Brussels faces in order to illustrate the necessary political arbitrages and the technical aspects of their implementation.

School choice regulation : state of affairs

School choice regulation in Belgium

In Belgium, school choice regulation depends on the language communities. In Flanders, the GOK[1] decree regulates school choice since 2003. Its main objective was to increase transparency in registrations. The decree set a common date to start registrations and introduced priorities based on a "first-come, first-served" principle. The only allowable reason for refusing to register a child is the lack of space.

A second reform in 2006 introduced local coordination platforms (in Dutch: "lokale overlegplatformen", LOP) in charge of coordinating the details of school enrollment practices within local areas. LOPs are made of representatives from all schools in the area, as well as parents' associations, unions and key social associations. The decree allows LOPs to give priority – through an early registration period - to specific categories of pupils, including pupils from disadvantaged background.

Faced with parents' growing discontent over long queues in front of popular schools, the Flemish education minister announced in March 2008 a two-year period during which local coordination platforms could experiment with enrollment policies as long as they respected the principle of equal treatment of equals. In addition, the new GOK decree allows schools to use a geographic criterion instead of a "first-come first-served" criterion when demand exceeds supply. In June 2009, the coordination platform for Brussels, LOP *Brusse*l, voted in favor of a centralized school registration procedure with, as criteria to select pupils in case of excess demand, the distance between the school and the pupil's home or workplace of his parents as well as time spent in a Dutch-speaking daycare.[2] The procedure's details are still being worked out at the time of writing.

On the French-speaking side, minister Simonet has started consultations with all stake-holders to discuss the form that school choice regulation will take in 2010-2011. Several principles are already agreed upon: the governmental declaration mentions a higher degree of coordination across schools (section 1.7. of the declaration) and the introduction of a transparent and efficient procedure that respects parents' freedom of choice, contributes to social diversity and respects schools' autonomy (section 2.4.).[3]

There are convergence points between the two language communities: some common objectives (respecting parents' preferences and promoting social diversity) and a convergence towards a transparent and efficient school enrollment procedure, with local areas playing a coordination role.

---

[1] GOK is the acronym for gelijke onderwijskansen (literally : equality of opportunities in education). Legal texts are available at: www.ond.vlaanderen.be/wetwijs/thema.asp?id=54

[2] "Niet meer kamperen voor de schoolpoort", Brussels Niews, 17 juin 2009 (www.brusselsnieuws.be)

[3] The full text (in French) of the governmental declaration is available at: http://www.cfwb.be/index.php?id=1774

Two debates : social diversity and school choice

Social diversity is currently at the heart of the ongoing debate on school choice regulation in Belgium. These two debates are distinct, however. School choice regulation can have other objectives than the promotion of social diversity. In addition, social diversity in schools depends at least as much on selection during schooling than at the entry level. In this section, we summarize the ins and outs of these two different debates.

The PISA surveys have put social diversity on the political agenda in Belgium. These surveys, which evaluate teenagers' skills in reading, mathematics and sciences, have highlighted the great disparity in performances among Belgian teenagers. Other studies have later confirmed that the school system in Belgium no longer contributes to social mobility, but instead replicates existing socio-economic disparities (Dupriez and Vandenberghe, 2004, Jacobs et al., 2009).

Given that Belgium has one of the most socially segregated school system (Jenkins et al, 2008), it became clear that increasing social diversity within schools could be an instrument to improve social mobility and the average performance of Belgian pupils.[4] Social diversity is driven by selection at the entrance (and thus by registration policies) and by selection during schooling. Thus, regulating school choice is only one instrument among others to influence school populations.

As far as school choice regulation is concerned, equity, not social diversity, was the main motivation initially. The laissez-faire system of free choice by schools and parents that prevailed until the first GOK decree in Flanders and the Arena decree in French-speaking Belgium was not transparent and did not guarantee a fair treatment to all children. In fact, social diversity did not lead to any priority in the Arena decree and when the GOK decree talks about « gelijke onderwijskansen » (literally : equal opportunity in education), it means putting all children on an equal footing. Quotas for social disadvantaged pupils (later rebaptized "GOK pupils") are a possibility left to the coordination platforms, not an obligation.[5]

It is also useful to stress that parents' preferences have precedence on both sides of the linguistic border. Thus school choice policies regulate schools' population composition only when a school faces excess demand.

---

[4] Even though there is a well-established statistical link between school-level social diversity and average PISA performance (countries characterized by a higher level of social diversity tend to have higher average scores), the exact mechanism behind this link is less well-understood. The empirical hurdle here is to separate the effect of social diversity from other aspects that are difficult to observe, yet are often correlated with social diversity (teachers' quality, the adequacy of the chosen pedagogy, whether the atmosphere in the classroom is conducive to learning, …). This debate is outside the scope of this article (see for example Dupriez and Draelants, 2004 and Hoxby and Weingarth, 2005, for excellent summaries of the scientific evidence).

[5] In French-speaking Belgium, social diversity as an objective first appeared in 2008-2009 with the Dupont decree.

Distinguishing political objectives and procedure

Regulating school choice means finding a way to assign pupils to schools. A school choice policy contains two key elements: (1) criteria and rules to determine which child has priority over another one, at each school, (2) a procedure that determines which child goes where, given his parents' preferences and his priority status.

These two elements can be analyzed independently: political objectives determine the priorities from which pupils benefit at each school; the choice of procedure is largely driven by good governance concerns (transparency, efficiency, ease of use,…).

We first discuss political objectives. Which pupil has priority over which other pupil, and under which conditions? Here the exercise comes down to listing objectives and associated criteria. Some objectives and criteria give rise to an absolute priority, i.e. a priority independently of the number of pupils benefiting from this priority. For example, the GOK decree, like the Arena and Dupont decrees, give siblings of pupils already registered at the school priority at that school. Other criteria give rise to a conditional priority and a quota: pupils who meet these criteria benefit from a priority up to the level of the quota. Conditional priorities are particularly well suited to political objectives aiming to achieve a balance between different categories of pupils. The objective of promoting social diversity is an example.

When school choice policy has several objectives, it is essential to rank them in order to be able to make a choice when two objectives are incompatible. When there is indeed incompatibility between two objectives, the criterion associated with the subordinate objective influences the outcome at the margin only.

Note that political objectives need not be "one size fits all". They can be tailored to the local needs because different school districts face distinct school populations and challenges. Political objectives can also vary with the school grade.

Once political objectives are decided so that priorities are defined for all pupils at all schools, the procedure determines which pupil goes where. In this function, not all procedures are equally effective: there are good procedures, less good procedures and plain bad procedures. The next example illustrates this.

Suppose there are two schools, A and B. Each school can admit two pupils. There are four pupils, a, b, c and d. Pupils a, b and c prefer school A to school B and pupil d prefers school B to school A. Because more pupils prefer school A to school B, it is not possible to give everybody their first choice. Suppose further that the pupil priorities (resulting from the political objectives) at each school are as follows:

> School A : a, d, b, c

> School B : b, a, c, d

In words, in school A, pupil a has priority over pupil d, who has priority over pupil b, who has priority over pupil c. In school B, the priority order is b, a, c then d.

We first consider the centralized procedure that is currently used in Gent. [6] Parents are asked to submit rank order lists of the schools in which are interested to

---

[6] This procedure is often referred to as the school-proposing deferred acceptance algorithm.

the LOP.[7] The LOP then runs a computer program where each school compares the number of pupils interested in attending with its capacity and tentatively accepts the pupils highest on its list based on priorities. In the example above, school A accepts pupils a and d, and school B accepts pupils b and a. Pupil a gets two offers. Given that he prefers school A to school B, he declines the offer from school B, which can then offer the freed up seat to pupil c. This is the only offer that pupil c gets and he accepts it. Given that both schools have allocated their seats and all pupils have accepted their most desirable school among the offers received, the procedure ends with pupil a getting his first choice, and the other pupils getting their second choice. Note already that this result is not optimal: pupil b and pupil d would be happy to exchange their assignments.

This result would also be the result in a decentralized procedure when pupils apply to each acceptable school and final allocations are reached through a sequence of offers by schools to the pupils ranked highest in priorities and rejections or acceptances by these pupils depending of their available offers. This was the procedure implemented by the Dupont decree.

Consider now an alternative that differs from the previous one in that the starting point is parents' preferences, not school priorities. Specifically, in a first step, the procedure considers pupils' first choices. Each school considers these requests and tentatively assigns all pupils if there are enough seats. Otherwise, the school accepts those pupils with the highest priorities, and rejects the other requests. In a second step, pupils whose request was rejected apply to their second choice school. Each school considers again all received requests – those tentatively accepted in the first step and the new requests – and tentatively accepts those benefiting from the highest priority up to its capacity.[8] All other requests are rejected. This process continues until all pupils are assigned to a school or no more school is acceptable to them.

To illustrate again using our example, pupils a, b and c apply to school A in the first step, and pupil d applies to school B. Given that school A is the first choice of more pupils than it has capacity, it accepts the requests of the two highest ranked pupils, i.e. a and b (d did not introduce a request because school A is not his first choice), and rejects pupil c. In contrast, school B only receives one request in step one and accepts it. In the second step, pupil c applies to his second choice school, school B, which accepts him. Given that all pupils are assigned to a school, the procedure ends and all registrations are confirmed.

At the end of the procedure, pupils a, b and d get their first choice, and pupil c gets his second choice. This is a better result that under the previous procedure, *even though we did not change anything to the priorities and thus to the underlying political objectives*. In particular, there is no pupil with a place in a school, when another pupil who prefers that school and has a higher priority does not have one. The only

---

[7] The full description of the procedure is given in a document called "Aanmelding voor inschrijving in het Gentse basisonderwijs, besluit goedgekeurd door de algemeen vergadering van het LOP Gent Basisonderwijs", dated 22 September 2008.

[8] Note, in particular, that a request accepted in the first step can be rejected in the second step.

difference lies with the choice of the procedure and this simple example shows that procedures matter.

The procedure we have just described is called the student-proposing deferred acceptance algorithm (student-proposing DAA) and was first proposed by Gale and Shapley (1962). This procedure has two key advantages:

- At each step, schools consider the requests tentatively accepted in the previous period and the new requests received on the same footing (i.e. not taking into account when these requests were received). As a result, pupils do not "lose their turns" in their second choice school if they did not get their first choice school. They can thus safely rank the schools truthfully. They do not need to strategize. This property is a necessary condition for a procedure to respect parents' preferences: indeed, there is no way to respect parents' preferences if these are not known. In addition, this property has a redistributive dimension because some parents are better able to strategize than others. A procedure that elicits truthful preferences makes it easier for all parents to participate effectively and contributes to greater equity (for evidence that a procedure that requires parents to strategize primarily hurts pupils from socially disadvantaged background, see Abdulkadiroğlu et al., 2006).

- As suggested by the example and proved more generally by Gale and Shapley (1962), the student-proposing deferred acceptance algorithm is more efficient than the procedure used by *LOP Gent,* in the sense that *every* pupil gets assigned to the same school or a preferred one relative to his assignment under the procedure used by the *LOP Gent.* This result has recently been generalized by Abdulkadiroğlu et al. (2009). They show that the student-proposing DAA is not dominated by any other procedure that respects priorities and elicit truthful preferences.

To conclude, *for given political objectives*, not all procedures perform equally well. The study of the properties of such procedures is an active field of research in social choice theory and market design. Maniquet (2009) and Cantillon and Gothelf (2009) have recently summarized the main conclusions of this research for a non specialized readership. They reach similar conclusions and, in particular, they recommend the student-proposing deferred acceptance algorithm.

The challenge of school choice regulation for Brussels

Even though school choice regulation is a responsibility of the language communities, and not of the regions, it affects the Brussels Capital Region directly and with specificities that make the problem more difficult to solve and partially different from the problem encountered in the other big cities of the country. In this section, we describe four challenges that Brussels faces and which are directly related to school choice regulation.

A growing population and schools near capacity

In 2007, 40,000 preschoolers, 71,000 primary school children and 68,000 secondary school children lived in the Region. According to the Federal Planning Bureau, those numbers will be, respectively, 50,000, 88,000 and 75,000 in 2017. This is a growth rate between 11.5% to 25% over ten years. Today, Brussels' schools are already close to saturation.[9] This situation explains in part the tensions around school choice policy: it is not possible to give every child a place in his most preferred school. In the short term, it is essential to find a fair and humane way to allocate scarce seats to pupils. In the medium term, it is urgent to build new schools in Brussels.

A polarized population

Brussels' population is socially, economically and culturally very polarized (see, for example, Deboosere et al., 2009). In this context, the education system plays a critical role in fostering social cohesion and social mobility. School segregation – the fact that different pupils go to different schools – is one of the reasons why the education system does not fulfill this role. In turn, school segregation is the result of several factors, including some that are beyond school choice regulation (e.g. the existing spatial segregation and pupil selection during their schooling). Others, such as freedom of choice and selection by schools are directly impacted by school choice regulation. Finally, we note that the high school density on the territory of the Region exacerbates segregation and makes regulation all the more necessary.

A significant interdependency with its hinterland

If one looks at the origin of the pupils attending school in the Region, there is no doubt that the Region as a whole is a single catchment area: pupils routinely attend schools well beyond the boundaries of their boroughs and there is a high level of mobility of pupils across the Region (on this, see for example, Delvaux et al., 2005).

---

[9] For Dutch-speaking schools, Janssens (2009) evaluates the average occupation rate at 98.6% for preschools and at 85.8% for primary schools. For French-speaking schools, the statistical department of the French-speaking community (ETNIC) recorded 40,077 registered children in preschools and 65,194 registered children in primary schools in Brussels (academic year 2007-08). At that same time, there were 1,850 classrooms in preschools and 3,058 classrooms in primary schools. On the basis of 24 children per classroom, this represents an occupation rate of 90 and 89% respectively. On the basis of a maximal capacity of 20 children per classroom, this represents an occupation rate of 108% and 106% respectively. For secondary school education, the only available numbers are the following: out of 108 secondary school establishments in Brussels, 54 were at capacity on August 31, 2009, the day before the start of the academic year (and after a near complete deflation of the "bubble"). Half of establishments are thus at capacity.
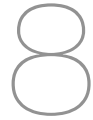
This said, there are also important flows between regions. For example, one child out of ten attending a Dutch-speaking preschool in Brussels lives outside of the Region, and about one child out of ten living in the Region attends a preschool outside of Brussels. Part of these flows can be explained by a place of residence close to the boundaries of the Region. This explanation remains very partial however. For example, Cantillon (2009) finds that proximity only explains 10% of the decisions to attend a preschool outside of the Region for children of high socio-economic status and 25% of the decisions for children of low socio-economic status. Parents' workplace locations explain part of the inflow. It is interesting to note that incoming pupils to the Dutch-speaking preschools tend to be from a higher socioeconomic status and a higher proportion of them have Dutch as their mother tongue (Cantillon, 2009). These incoming pupils attend relatively privileged schools. Janssens (2009) finds an increasing outflow of pupils and a decreasing inflow into the Region's Dutch-speaking schools.

According to the Consultative Commission "Training, Work and Education" (CCFEE), 14% of the pupils attending French-speaking schools in the Region live outside of the Region. Most of them come from Flanders.[10] Outflows for French-speakers are smaller: 2% of Brussels children attend a French-speaking school outside of Brussels. Clearly, any school choice policy must account for these flows and their motivation.

Linguistic diversity and an overlap of uncoordinated school systems

Several authors have emphasized the great linguistic diversity of the population of Brussels (Van Parijs, 2007, Janssens, 2008). This linguistic diversity is an economic and political challenge for Brussels. It is also a challenge for school choice regulation. Indeed, according to the second Language Barometer of the Vrije Universiteit Brussel (Janssens, 2007), approximately 9% of Brussels' households have Dutch and French as their home languages and 16.3% do not use either language at home. For the children of these households at the very least, school choice is as much about choosing a language of education as choosing a school. This represents one child out of four under the hypothesis of a fertility rate equal to the rest of the population.

Children of European civil servants are very much in the same situation. Four European schools are dedicated for them, but three of them are over capacity and the fourth one is not conveniently located for many civil servants.[11] So again, school choice for these European civil servants is as much about the school system (European or Belgian) as about the school.

This blurred identification to a unique school system at the individual level contrasts with the non coordination of the existing school systems: French-speaking schools, Dutch-speaking schools and European schools. Registrations take place at different times according to different procedures. This non coordination forces parents to

---

[10] These numbers are available in a document entitled « L'enseignement francophone en Région de Bruxelles-Capitale » available on the website of the CCFEE, http://www.ccfee.be/index.php?travaux

[11] See for example the report on school choice procedures in the European schools of Brussels available at : http://www.eursc.eu/index.php?id=212

play around a double set of constraints, keeping a registration in the system that closes registrations earlier, while waiting to hear from another system, or to choose a school system as a function of the timing of its registrations. This situation is a source of frustrations for parents. It also generates inefficiencies of the very same kind as those generated by decentralized procedures (p. 4). [12]

Towards a regulation of school choice to the benefit of Brussels

Now that we have described the specific challenges facing Brussels, we turn to the question of the form that school choice regulation should ideally take in Brussels. The objective here is not to propose a ready-to-use solution but to illustrate the process of construction of such a solution and to shed light on the arbitrages that will need to be made. The exercise also illustrates a series of practical considerations that come *after* the political decision and which, for this reason, are rarely discussed. They are nevertheless important.

Political objectives

Four objectives are often mentioned in the public debate: respect of parents' preferences, equity among children, promotion of social diversity, and incentives for parents' investment in children's education.

The objective of respecting preferences implies, among others, that the only acceptable reason for not giving a child his first choice school is the lack of places available at that school. This objective reasserts the freedom of choice in education, a heritage of the "School Pact" of 1959. To respect preferences is also important in the context of interdependency between Brussels and its periphery. Too many constraints on school choice in Brussels could lead to an exodus of some families and further polarization of its population.

The equity objective aims to put all children satisfying the same objective criteria on the same footing, and this, independently of the efforts made by their parents. This objective is essential given the state of saturation of Brussels' schools and the resulting need to decide which child to register when there is excess demand. Equity also contributes to the objective of social diversity which we have already discussed at length.

The objective of fostering parents' investment in their child's education does not correspond to any specific challenge facing Brussels. This said, the specific situation in Brussels makes this objective particularly difficult to achieve. The idea here is simply to reassert that parents are expected to actively take part in the decision of the school for their child, and in particular that they get informed and meet the management of the school before making their choice. Encouraging parents' investment meets a demand by some schools and some parents who would like to have more control over the decision process.

---

[12] Other authors have advocated a greater coordination among coexisting school systems in Brussels. The reasons they give go beyond school choice regulation. See, e.g. Van Parijs (2007), Delvaux (2008) or Janssens, Carlier and Van de Craen (2009).

Other objectives, or at least criteria, have been mentioned in the debate. These include priorities for siblings, priorities for children living in the neighborhood of a school, and priorities for children whose primary school uses a similar pedagogy. In addition, Dutch-speaking children benefit from a conditional priority (via a quota) in Dutch-speaking schools of Brussels.[13] This quota guarantees that every Dutch-speaking child in Brussels has a place in a Dutch-speaking school.

Some of these objectives are more or less desirable depending on the school grade under consideration. For example, a sibling priority increases the chance that all children of a household can attend the same school. This makes the logistics of bringing children to school and taking them back easier. This objective is particularly attractive at the primary school level when children do not go to school by themselves. It is less attractive at the secondary school level in Brussels given the adequate supply of public transportation.

Two scenarios

Even if we simply focus on the four main objectives of respect of preferences, equity, promotion of social diversity and incentives for parents' investment, it is clear enough that it may not be possible to meet all of these objectives.

Indeed, respecting preferences and promoting social diversity are not entirely compatible. If children from different socioeconomic status want to attend different schools and that this is feasible, then respecting their preferences means giving up on social diversity.

Likewise, fostering parents' investment is not always compatible with social diversity because not all parents have the same resources to take the required steps for a meaningful choice. Fostering parents' investment is not entirely compatible with equity either because rewarding parents' investment means penalizing the children of those parents who did not make this investment.

On the other hand, there is no incompatibility between the equity objective and the objective of respecting preferences, and between the objective of encouraging parents' investment and the objective of respecting preferences.

A compromise is thus necessary: when two objectives are incompatible, which one should take precedence? We consider two scenarios based on the public debate. These scenarios have in common that parents' preferences take precedence over every other objective, and that social diversity takes precedence over the objective of fostering parents' investment.

The reason for this choice is simple. In the current context and the resulting strong tradition of free choice, it seems very difficult not to give precedence to preferences. Concretely, this means that school choice regulation is only constraining in case of excess demand.

---

[13] According to Janssens (2009, tables 16 and 26), the proportion of pupils who speak Dutch at home is equal to 33% at the preschool level and 38% in primary school. These numbers should be compared to the current quota of 45%.

Likewise, given the importance of social diversity in the Brussels context, it is likely that this objective will be favored over the objective of fostering parents' investment if a political consensus emerges at the level of the Region.

The trade-off between equity and parents' investment remains to be decided. We consider two scenarios here.

In the first scenario, equity takes precedence. Concretely, this means that *no aspect of the procedure* can favor a child based on his parents' efforts and, in particular, that a meeting between parents and school management is not a requirement for applying to a school (instead, it can happen once the registration is confirmed). Indeed, asking parents to meet the school directors of *all* the schools in which they apply comes down to favoring those children whose parents are able to make those time-consuming steps.

The second scenario compromises between the two objectives, by giving an advantage to children whose parents informed themselves about the schools and made the effort to meet the school management, but by limiting this advantage in order to maintain a maximal level of equity. By doing so, this scenario meets the demands from some parents and schools. However, its benefits reach beyond meeting these particular interests. Rules and incentives (and it is the economist speaking here) have the power to change behavior. By giving even a tiny advantage to children whose parents met the management of the school or attended an information session at that school, one sets this behavior as the norm and this helps generalizing it, to the benefit of all. We describe below how to implement this scenario in more detail.

Finally, we note that for primary education at least, there seems to be a consensus for a priority for siblings. This priority would come after the objectives of respecting preferences, but before the objective of promoting social diversity and fostering parents' investment.

Criteria

To each objective, we need to associate one or several criteria to determine for each pupil whether a priority applies. Cantillon and Gothelf (2009) summarize the desirable properties of such criteria so that those pupils who will benefit from a priority are indeed those for whom the priority was designed. They recommend criteria that are reliable, verifiable (by schools or by the entity in charge of managing the process) and based on individual characteristics. If such indicators are not available, an alternative is to use a combination of several indicators.

In the context of the two scenarios that we have described, the sibling criterion is easily defined. It is reliable, verifiable and individual. A pupil will satisfy the "endorsement criterion" associated with the objective of fostering parents' investment if one of his parents attended an information session at the school for which he claims to meet the endorsement criterion, or has met with the school management. This criterion is verifiable by the school if parents leave their coordinates. It is individual and reliable. In order to limit the impact of the endorsement criterion on equity, a pupil could claim to meet this criterion in maximum one or two schools (even if his parents attended information sessions at more schools).

It is more difficult to define a satisfactory indicator for social diversity. The issue here is that socio-economic status is highly multi-dimensional and that many existing indicators are only partially reliable or not verifiable. Cantillon and Gothelf (2009) stress the weaknesses of the indicators used in the GOK decree and in the Dupont decree. The use of several indicators is desirable and the criterion could be said to be met, for example when the pupil satisfies 2 or 3 indicators out of a list. Note that the social diversity criterion should lead to a conditional priority and not an absolute priority because the aim is to reach a balance.

Priorities

Political objectives, their hierarchy and the criteria associated with them, induce priority classes over pupils at each school. Here, we illustrate the classes of priorities that the two scenarios under consideration imply. For simplicity, we abstract from sibling priority.

In each school, we define two quotas: a quota for socio-economically advantaged pupils and a quota for socio-economically disadvantaged pupils. Each category of pupils has priority over the others within the corresponding quota (conditional priority).[14]

The ranking of pupils based on these criteria stops here for scenario 1. In scenario 2, one then places those pupils who satisfy the endorsement criterion ahead of the other ones, *within each quota and priority class*.

The resulting ranking is still partial: two pupils satisfying the same criteria are not ranked. To be able to decide between them if needed, an ultimate criterion is needed. A random draw is the most equitable solution.[15]

A procedure based on the student-proposing deferred acceptance algorithm

Now that the priorities of each pupil at each school are well-defined, we can discuss the procedure that matches pupils to schools. We follow here the recommendation of Maniquet (2009) and Cantillon and Gothelf (2009) to use a procedure based on the student-proposing deferred acceptance algorithm described on page 4. Its major advantage lies in its efficiency properties. In that sense, it is the procedure that best respects parents' preferences.

---

[14] Note that this definition differs from the practice of quotas under the GOK decree. Under the GOK decree, socio-economically disadvantaged pupils have priority within their quotas but are on the same footing as the other pupils for the remaining places. The advantage of the formula proposed in the text is that it maximizes the chance that the population mix corresponds to the quota. It is then easier to interpret the quota relative to the objective. With the current practice under the GOK decree, the quota provides for a minimum number of socially disadvantaged pupils but it does not for example provide for a minimum number of socially advantaged pupils at each school. Concretely, suppose that 30% of the school population is socially disadvantaged. Then, a quota of 30% for socially disadvantaged pupils will lead to implement a 30-70 ratio between socially disadvantaged and socially advantaged pupils if this is possible given parents' preferences. In that sense, it maximizes the chance for social diversity.

[15] This is used in New York and Boston for example. *LOP Gent* uses distance from home as the tie-breaker.

In this procedure, parents are asked to submit a rank order list of schools in which they are interested. In scenario 2, parents must additionally list the school(s) where they benefit from the endorsement criterion.[16] The procedure then combines these preferences (plus, possibly the list for the endorsement criterion) with the priorities of each child in each school, as generated by the political objectives and the tie-breaker described above.

Increased coordination between school systems

To the extent that some children consider two schools in their relevant choice set, those schools should be included within the same procedure. Otherwise, these children will participate in all the procedures that cover their schools of interest, generating multiple registrations (since they could, in principle, receive one school assignment in each procedure) and a suboptimal final result. Given the nature of the Brussels school population, this simple criterion justifies a unique and common procedure for all schools – Dutch-speaking, French-speaking and European – within its territory.

It is useful to stress at this point that the use of a common procedure does not require common political objectives and common priority criteria: each system defines its own objectives that generate priorities over pupils at each school. In other words, this proposition is entirely consistent with a regulation of school choice by language Communities and thus with the existing institutional framework. The only constraint is to use the same algorithm to match pupils with schools. The advantage for pupils is that they can rank as number one a school from one system and as number two a school from another system.

---

[16] This adjustment is technically similar to that recently proposed by Abdulkadiroǧlu et al. (2008), even though the motivation is different. Asking parents to mention one or two schools for which they want to benefit from the endorsement criterion introduces a strategic decision because it is not always in their interest to write down their first and second most preferred schools. Abdulkadiroǧlu et al. (2008) show that it remains in parents' interest to rank the schools truthfully in the submitted rank order list.

Other considerations

« The devil lies in the details » goes the saying. The eventual success of school choice regulation in Brussels will also depend on many details which we now briefly describe.

Measures to ensure effective participation by parents

Participation by all parents is a necessary condition for effective equity and social diversity in school choice regulation.[17] One advantage of a centralized procedure as the one advocated here is that one can, in theory, easily check that all parents have participated. Several measures can further foster this participation:

- All parents must be properly informed about the procedure and how it works.

- Parents must be able to submit their rank order lists using different channels: the Internet, by mail, by telephone, through schools, ….

- The contact between parents and schools must be facilitated so that there is no needless hurdle to satisfy the endorsement criterion. For example, schools should be asked to organize several information sessions before the deadline for preference submissions.

- Sufficient information about schools should be easily accessible to all parents. Ranking several schools is a difficult enough task even when one has all information available.

How many school should parents rank ?

In a saturated school system such as the one that prevails in Brussels, how many schools should a parent rank in order to ensure that his child will receive an offer by the end of the procedure? The short answer is: it depends on the preferences of that parent. If his child benefits from a priority in his fourth preferred school and is not sure to get an offer from his most preferred, second and third most preferred schools, then this parent should rank four schools. In practice, this will also depend on the level of heterogeneity of preferences in the population. At one extreme, *if everybody has the same preferences*, one will need to rank as many schools as the number of schools in excess demand. At the other extreme, if parents have very different preferences, a few schools should do.[18]

---

[17] Indeed, it is useless to give some children categories priorities if they do not take advantage of these priorities.

[18] In New York, where the public school system is saturated, parents rank 12 schools and this number seems to be insufficient for about 3.5% of children who end up without schools at the end of the procedure. In simulations based on data from Dutch-speaking preschools in Brussels, Cantillon (2009) shows how preference heterogeneity influences the number of schools to list.

Default rank order lists

An important ethical question concerns the treatment of pupils whose parents did not submit rank order lists.[19] In the standard solution, these pupils are left to choose from the schools with remaining capacity at the end of the procedure. An alternative is to create a default rank order list for these pupils, for example based on the distance from their place of residence. This measure would guarantee a seat in desirable schools to those pupils and thus would ensure that these children are not penalized by the lack of information or efforts by their parents. The downside of this measure is that it would introduce some inefficiency into the system if one of these children gets allocated a place in a capacity-constrained school but in the end declines it for a place in a school not at capacity. In this case, this measure would not have led to any benefit for this child and would have prevented another child to get a place in a preferred school.

Progressive adjustment of criteria

Social diversity is determined as much at the admission stage as during a child's schooling. Thus, fostering social diversity requires the active support of school teachers and management. Measures that help these key stake-holders deal with social diversity in a harmonious way will make it easier for them to back such policy. Quotas far away from the current school population could lead to instability. Intermediary quotas that account for the specific situation of every school could help school management envision their future more serenely.

Concluding comments

School choice regulation divides parents, schools, public decision-makers and other stake-holders because it is not possible to accommodate all their aspirations. It is however urgent to find a solution in Brussels. In this article, we have analyzed two scenarios that reflect two possible compromises among sometimes incompatible political objectives and have proposed a solution that implements these compromises. The proposed procedure is simple, flexible and as efficient as possible given the constraint of truthful revelation of preferences and respect of priorities. Rather than a ready-to-use solution though, this intellectual exercise illustrates the arbitrages on which public decision-makers will need to take a stance and the numerous practical aspects that need consideration for implementation.

---

[19] In some English school districts, which are also highly saturated, about a quarter of parents do not submit rank order lists. As a result, their children get administratively assigned to a school.

References

ABDULKADIROĞLU Atila, YEON-KOO Che et YOSUKE Yasuda, (2008), *Expanding "choice" in school choice*, mimeo.

ABDULKADIROĞLU Atila, PATHAK Parag, ROTH A.E., & SÖNMEZ T., (2006), *Changing the Boston School Choice Mechanism*, mimeo.

ABDULKADIROĞLU Atila, PATHAK Parag and ROTH Alvin, (2009), « Strategy-proofness versus efficiency in matching with indifferences: Redesigning the NYC high school match », forthcoming *American Economic Review.*

CANTILLON Estelle, (2009), *School choice in Brussels Dutch-speaking preschools: Evaluation of the effect of the use of a distance-based tie-breaker*, research report for LOP Brussel, 50 p.

CANTILLON Estelle et GOTHELF Nicolas, (2009), *Réguler les inscriptions scolaires : pourquoi et comment ?*, Proceeding from the 18th Congress of Belgian French-speaking Economists, CiFOP, November 2009.

DEBOOSERE Patrick, EGGERICKX Thierry, VAN HECKE Etienne et WAYENS Benjamin, (2009), « The population of Brussels : a demographic overview », in *Brussels Studies*, CFB n° 3, pp. 1-18.

DELVAUX Bernard, DEMEUSE Marc, DUPRIEZ Vincent, GUISSET Christophe, FAGNANT Annick, LAFONTAINE Dominique, MARISSAL Pierre et MAROY Christian, (2005), *Les bassins scolaires : de l'idée au projet. Propositions relatives aux domaines d'intervention, aux instances et aux territoires*, research report for the French-speaking Community, 260 p.

DELVAUX Bernard, (2008), « Un enseignement unique », opinion piece published in *La Libre*, 3 September 2008.

DUPRIEZ Vincent et VANDENBERGHE Vincent, (2004), « L'école en Communauté française de Belgique : de quelle inégalité parlons-nous ? » *Cahiers de recherche en éducation et formation,* 27, Girsef.

DUPRIEZ Vincent et DRAELANTS Hugues, (2004), « Classes homogènes versus classes hétérogènes: les apports de la recherché à l'analyse de la problématique », *Revue Française de Pédagogie,* 148, pp. 145-165.

GALE David and SHAPLEY Lloyd, (1962), « College admissions and the stability of marriage », *American Mathematical Monthly,* 69(1), pp. 9-15.

HOXBY Carolyn and WEINGARTH G., (2005), *Taking race out of the equation : school reassignment and the nature of network effects*, mimeo.

JACOBS Dirk, REA Andrea, TENEY Céline, CALLIER Louise, LOTHAIRE Sandrine, (2009), *L'ascenseur social reste en panne. Les performances des élèves issus de l'immigration en Communauté française et en Communauté flamande*, Fondation roi Baudouin, 92 p.

JANSSENS Rudi, (2007), « Van Brussel gesproken: Taalgebruik, taalverschuivingen en taalidentiteit in het Brussels Hoofstedelijk Gewest (Taalbarometer II) », *Brusselse Thema's* 15, Brussel, VUBPRESS, 2007.

JANSSENS Rudi, (2008), « Language use in Brussels and the position of Dutch – some recent findings », in *Brussels Studies,* n° 13, 7 January 2008, pp. 1-14.

JANSSENS Rudi, (2009), « Onderzoek naar de capaciteit van het Nederlanstalig basisonderwijs in het Brussels Hoofdstedelijk Gewest » , BRIO onderzoeksverslag.

JANSSENS Rudi, CARLIER Donat and VAN DE CRAEN Piet, (2009), « Education in Brussels *», CFB n° 5,* January 2009, pp. 1-19.

JENKINS Stephen, MICKLEWRIGHT John and SCHNEPF Sylke, (2008), « Social segregation in secondary schools: how does England compare with other countries », *Oxford Review of Education,* 34(1), pp. 21-37.

MANIQUET François, (2009), « Inscriptions dans les Ecoles: Quelques Enjeux et Quelques Solutions », *Regards Economiques*, 70.

VAN PARIJS Philippe, (2007), « Brussels Capital of Europe: The new linguistic challenges », in *Brussels Studies,* n° 6, May 2007, pp. 1-10.