



EDUCATIONAL DIVERGENCE

WHY DO PUPILS DO BETTER IN FLANDERS THAN IN THE FRENCH COMMUNITY?

Lead Piece by
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Comments by
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Foreword by
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The Re-Bel initiative aims to rethink in depth, in an open, rigorous, non-partisan way, what the institutions of the Belgian federal state - or of whatever else this part of the world needs to become - can and must look like in the longer term, taking full account of the evolving European context.

The Re-Bel initiative does not aim to produce one programme or manifesto to which everyone involved could subscribe. Its ambition is rather to provide a fertile intellectual environment in which new ideas and promising initiatives of all sorts can germinate and develop, with a concern for their relevance to a thorough reform of Belgium's institutions, but also to the institutional design of other complex polities, most obviously the European Union.

The Re-Bel initiative involves scholars from all Belgian universities, runs a web site, publishes e-books and organizes workshops and public events. It intends to associate to its activities both foreign colleagues and the Brussels-based international community. The working language will usually be English.

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Foreword

Paul De Grauwe (KULeuven) & Philippe Van Parijs (UCLouvain)

One major challenge the state reform is meant to address is the steady economic divergence between Flanders and Wallonia. This divergence turns out to be paralleled by a divergence in the measured performance of the Flemish and Francophone school systems. Whether the latter divergence contributes to the former or the other way around, addressing the educational divergence must be part of the solution. But this demands that we should first understand the causes of this divergence.

A close look at the available data reveals that the lower educational performance of the French-speaking community cannot be ascribed entirely, or even mainly, to the inferior economic performance of the Walloon economy or to the higher proportion of children of recent foreign origin in the Brussels Region. It also suggests that the divergence is not a recent phenomenon that could be explained, for example, by Flanders' higher per capita expenditure in education. All the contributions to this volume attempt to shed light on this issue, without prejudices or taboos, by considering, rejecting or proposing for critical discussion alternative explanatory conjectures.

The lead piece by economist Vincent Vandenberghe (Louvain) is a revised version of the background paper for a Re-Bel public event organized on this issue on the 3rd of June 2010. The contributions by Sergio Perelman, Pierre Pestieau and Daniel Santin (Liège and Madrid), by Jean Hindriks and Marijn Verschelde (Louvain and Gent) and by Frank Vandenbroucke (Leuven and Antwerpen) are written versions of the comments presented on that same occasion. The contribution by Dirk Jacobs (ULB) mobilizes some results from a report on the schooling of immigrant children in the two Communities in order to shed further light on the puzzling divergence.

Lead Piece

Vincent Vandenberghe

Inter-regional educational discrepancies in Belgium. How to combat them?

Vincent Vandenberghe (UCLouvain)

Introduction

1. Good-quality education is crucial for individuals. The international evidence suggests that equipping youth with formal skills is key in putting them on a successful life and career track. But human capital and education are also important for nations and communities. Education is the single most critical investment to raise the long-run growth potential. In the global economy, the performance of education systems is the yardstick for success, particularly in light of the fundamental technological and demographic challenges that are re-shaping our economies. Moreover, in a federal context like the Belgian one, characterised by: i) uniform wage/price formation mechanisms, ii) a strong aversion to income inequality and, iii) generous welfare transfers, combatting educational discrepancies across regions should also be viewed as a way to secure the federation's long-term stability.
2. The evidence abounds to suggest that there is now a sizeable inter-regional educational attainment gap opposing the Flemish- and French-Speaking regions. International surveys, measuring educational attainment in a comparable way, have emphasised the relatively poor results of the French-Speaking Community of Belgium. The latter can also be spotted when analysing Belgian census data. The dominant view is that poor economic performances in several French-Speaking areas contribute to a great extent to this poor educational performance. The Region of Brussels has the highest school drop-out rate (28%) of the country, followed by Hainaut (25%) and Liège (23%). Along this line of reasoning, reducing the inter-regional educational gaps should primarily involve fixing the social ills associated with poverty that impair mostly French-Speaking children's learning outcomes. This probably means improving (inter alia) the labour market outcomes of the adults in the families in which at-risk children develop, particularly in areas that have been severely hit by deindustrialisation (Hainaut, Liège) or have experienced massive influxes of (low-skilled) immigrants, like Brussels.
3. But this socio-economic "deterministic" approach of educational regional divergences calls for some nuances. First, the calendar of the emergence of the gap does not coincide perfectly with the development of inter-regional or sub-regional socio-economic discrepancies. For instance, the poor results of the French-Speaking Community of Belgium, highly publicised since the late 1990s, have been around for a long time; for much longer than most analysts usually assume. The deterioration of the French-Speaking education system's effectiveness relative to that of Flanders, or neighbouring countries, has its roots in a quite distant past; well before the 1980s (with the introduction of the "renové") or the 1990s (with the complete devolution of educational policy to the Communities). Inter-regional educational discrepancies probably started in the early 50s, and preceded the socio-economic ones, known to have emerged in the 1970s and early 1980s. If one can reasonably argue that two-digit unemployment rates and a string of associated social ills in Brussels, Liège or Hainaut now hamper educational performances, there are reservations as to the role these factors played in the past. Second, one should also avoid overemphasizing the role of socio-economic discrepancies because – conditional on a certain socio-economic profile of pupils – French-Speaking schools systematically perform less well than the Dutch-speaking ones. In other words, when controlling for the (potentially important) cross-Community differences in terms of pupils' socio-economic background, immigration status, attendance of a vocational track, or the pupil/teacher ratio, the resulting net gap across the two main linguistic Communities remains important; i.e. equivalent of more than a school year.

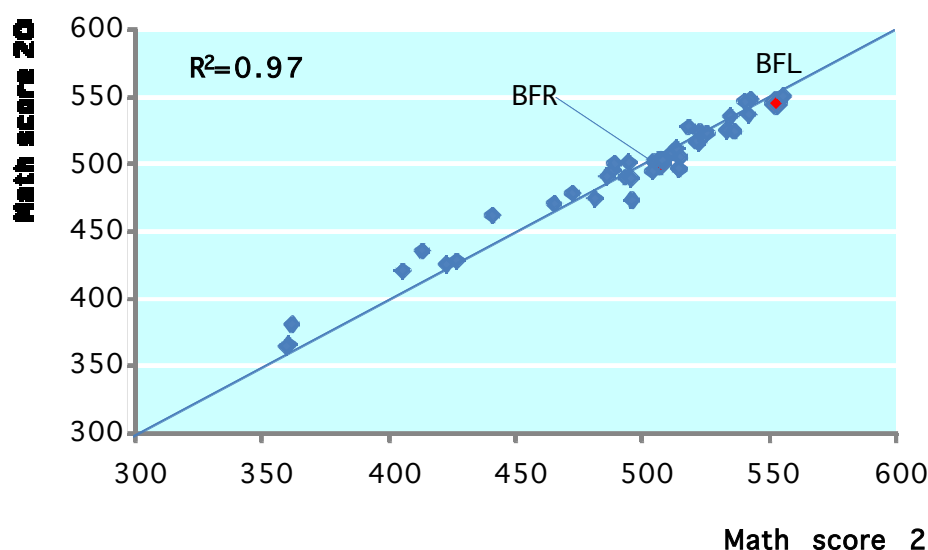
4. What then could explain the propensity of French-Speaking and Dutch-speaking schools to diverge so much in terms of performance? There is a growing consensus among economists that educational attainment is the quintessential joint product. It requires a strong commitment from both the demand side (pupils/students and their families) and the supply side (teachers, schools and public authorities). Could it be that Dutch-speaking individuals/families “make more efforts” and prioritize education to a greater extent than their French-Speaking equivalent? The issue remains open for discussion and calls for more research. From an historical point of view, there is no doubt that one needs to better understand the role that education as a vector of emancipation may have played in explaining the surge of educational attainment in Flanders.
5. This said, more on the supply side, there is the issue of governance. Could it be that a school-governance quality gap developed over the past decades across the linguistic border? The issue also remains largely unsettled. This said, there are many signs suggesting that the French-Speaking schools suffer from a very hybrid governance regime. Hybridation exists to a certain extent in Flanders and in many other places in the world. But, in comparison, it has loomed larger in the French-Speaking Community, whose decision-makers have been unable to agree on the amount of power to be granted to the central Ministry, the local professionals (heads of schools), and parents or pupils. Sempiternal divergences of view have ultimately led to a situation where the top-down/bureaucratic control (the obligation to implement instructions coming from Brussels) systematically cohabits with school-based autonomy and market-driven school management (the necessity to attract pupils to secure resources and jobs). Our thesis is that this hybrid governance regime largely echoes the “school war” and the diverging preferences of the three main “réseaux”. Contrary to most observers, we do not believe that the existence of “réseaux” translates into widespread cost-inefficiency. The true cost of the “réseaux” rather stems from their role in the emergence of a very hybrid governance for schools and teachers. Sceptics would rightly argue that “réseaux”, and the underlying antagonist conceptions as to what “good” school governance means, also exist in Flanders. True. But in Flanders, the “réseau” syndicating free catholic-affiliated schools is (and has always been) very dominant; with a market share exceeding 70%. This has perhaps contributed to limit the ravages of the hybrid governance disease French-Speaking pupils may suffer from.
6. The rest of the text comprises three main sections. Section 1 adopts a long-term perspective regarding educational performance. It tries to trace the origins of the inter-regional educational attainment gap opposing the Flemish- and French-Speaking regions. Section 2 assesses the various (historical and contemporary) factors that could explain the inter-regional performance gap, whereas Section 3 discusses at greater length the likely role of school governance.

1. The Long-term empirical evidence about inter-regional discrepancies

1.1. PISA 2003 vs. 2006

At the aggregate level — that of a country or a sizeable community — educational outcomes evolve very slowly and gradually. The comparison of PISA¹ 2003 and 2006 country-mean scores in maths (Figure 1.1) provides a quick illustration of this simple idea. These aggregates barely changed in three years², both in absolute and relative terms, despite many policy initiatives by decision-makers dissatisfied with their position in the PISA 2003 league table.

Figure 1.1. PISA 2003 and 2006 results - Country mean scores in Mathematics



Source: PISA, OECD, 2003 and 2006

For instance, the poor results of the French-Speaking Community of Belgium highly publicised since the late 1990s due to the availability and also the growing popularity of international surveys measuring educational attainment in a comparable way (TIMSS³, PIRLS⁴, PISA), have been around for a long time; for much longer than most analysts usually assume. And the deterioration of the French-Speaking education system's effectiveness relative to that of Flanders or neighbouring countries has its roots in a quite distant past; well before the 1980s (with the introduction of the so-called “renové”) or the 1990s (with the complete devolution of educational policy to the Communities and the adoption of a block-grant⁵ financing mechanism).

1.2. Average number of years of schooling as captured by the Belgian census

Figure 1.2, computed with Belgian census data, suggests that the gap between Flanders and the two other regions in terms of the educational attainment of young adults (25-29) became significant in the early 1970s. However, an educational attainment gap characterising those aged 25 or more reflects differences in the quality of education that probably opened up 15 to 20 years before, when these individuals had their first experience with formal education. The tentative conclusion is that the performance gap between the Belgian regions started to materialise and become statistically significant probably as early as in the mid-1950s.

1 The OECD's Programme for International Student Assessment.

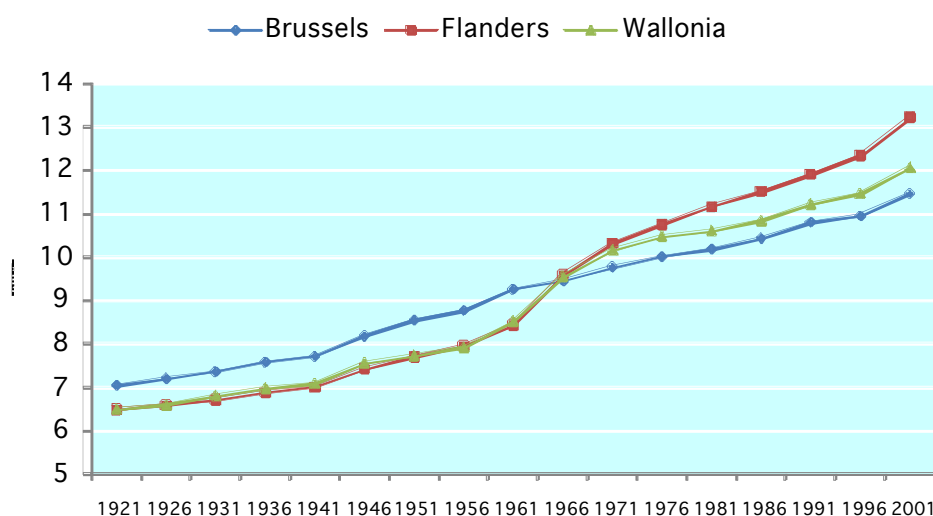
2 The same could be said of standard errors measuring the inequality of attainment between pupils within each country.

3 Trends in International Mathematics and Science Study.

4 Progress in International Reading Literacy Study. Both TIMSS and PIRLS are developed and implemented under the auspices of the International Association for the Evaluation of Educational Achievement (IEA).

5 In a federal system of government, a *block grant* is a large sum of money granted by the national government to a regional/local government with only general provisions as to the way it is spent.

Figure 1.2. The long-run dynamics of human capital accumulation in Belgium and its regions
Average number of years of education. Adults aged 25-29



Reported values are based on the self-reported highest education attainment of individuals converted in a number of successfully completed years of education. Past attainment of young adults are proxied by attainment of their contemporary seniors.

Source : Belgian census 1961,1991, 2001

1.3. Relative score in maths of teenagers: the international comparison

Critics would argue that the above census-based data are too quantitative. They define performance with the number of years of education. It could be more relevant (and convincing) to consider how (cognitive) skills have evolved over time. Reliable evidence is limited in this respect — Belgium, unlike France or the US has never seriously invested in a proper set of attainment/score indicators that statisticians could use to build time series. The few data available come for international surveys organised by the IEA (or more recently by the OECD). They cover the score of secondary school pupils. Similar surveys were never developed for tertiary education and Belgium and its Communities have rarely participated to those covering primary education.

Table 1.1. shows the evolution of the (relative) average math score for the two linguistic groups between 1965 and 2000. Reported values are standardized data points (also called Z scores). They correspond to the difference between the Community' average score and the international mean, then divided by the international standard deviation. The results just depict how many standard deviations the Community's score is away from the international mean. A positive value of 1.463 for the French-Speaking Community in 1965 suggests that its pupils largely outperformed (by more than 1.4 standard deviation) those of the other participating countries. The Flemish Community did not participate in the 1965 survey, — but it did participate in the subsequent ones, alongside the French Community. And the resulting trend largely accords with the “quantitative” census-based evidence reported on Figure 1.2. Whereas the (relative) performance of the French Community has steadily deteriorated since the mid-1960s, that of the Flemish Community has regularly improved.

Table 1.1. Long-term evolution of the relative score in maths of pupils in the Belgian Communities vis-à-vis other EU and OECD countries.
Standardized data points in maths ^a

	Year of international survey			
	1965	1980	1995	2000
Community	FIMS	SIMS	TIMSS	PISA
Flemish	-	0,388	0.899	1.140
French	1.463	0.157	-0.029	-0.258

FIMS: First International Mathematics Study
SIMS: Second International Mathematics Study
TIMSS: Third International Mathematics and Sciences Study
PISA: Programme for International Student Assessment

Reported values are standardized data points (also called Z scores). They correspond to the difference between the Community's average score and the international mean, then divide by the international standard deviation. The results just tell how many standard deviations the Community's score is away from the international mean.

Source: IAE, OCDE

2. What drives educational underachievement in French-Speaking Belgium

2.1. The socio-economic crisis hitting Brussels, Liège and the Hainaut?

A popular view is that the real problem rests with the social context in which schools pupils operate – namely, the family, neighbourhood, and peer environments that low-income children experience, or excessive school segregation. Adopting education reforms without changing social policy more broadly will simply punish educators for factors beyond their control.

Table 2.1. reports on a crucial indicator of educational attainment: the share of 20-24-year-olds who are no longer attending school and who have not obtained an ISCED 3 qualification (upper-secondary degree), who can thus be considered as “drop-outs”. Table 2.1 shows the breakdown by Belgian provinces. It gives some credit to the idea that poor economic performance contributes to lower educational attainment. It is the Region of Brussels that has the highest drop-out rate (28%), followed by Hainaut (25%) and Liège (23%).

Seriously improving at-risk children's schooling outcomes would involve fixing the other social ills associated with poverty that impair children's learning outcomes. In the Belgian context, this means improving (inter alia) the labour market outcomes of the adults in the families in which at-risk children develop, particularly in regions/provinces that have been severely hit by deindustrialisation (Hainaut, Liège) or have experienced massive influxes of (low-skilled) immigrants (Brussels, see Table 2.1).

But this socio-economic deterministic explanation of educational underachievement calls for some nuances. The calendar of the emergence of an inter-regional attainment gap in Belgium (Figure 1.2) does not coincide perfectly with the development of inter-regional or sub-regional economic discrepancies. It rather seems that educational discrepancies (that probably started in the early 50s) preceded the socio-economic ones (known to have emerged in the 1970s and early 1980s). If one can reasonably argue that two-digit unemployment rates (and a string of associated social ills) in Brussels, Liège or Hainaut now hamper educational performances of youth, there is some reservation as to the role these factors played in the past.

Table 2.1. Aged 20-24 without an upper-secondary degree (ISCED3)

Provinces	Percentage of youth without ISCED 3
Antwerpen	13.6
Limburg	15.1
Vlaams Brabant	15.2
West-Vlaanderen	11.5
Oost-Vlaanderen	12.6
Rég. Bruxelles-Cap.- Brussel	28.4
Brabant Wallon	13.9
Hainaut	25.2
Liège	23.0
Luxembourg	14.4
Namur	19.6
Women average	14.6
Men average	21.0

Source: EU-LFS, 2007

2.2. Lack of long-term financial incentives to stay on in education and succeed at school?

Education can be considered as a form of profitable investment. Since Adam Smith, economists tend to consider that education is similar to a physical means of production e.g. factories and machines (Debande and Vandenberghe, 2008; de la Croix and Vandenberghe, 2004). One can invest in human capital via education training (but also medical treatment). In that sense, education is similar to fixed capital although it is not transferable. The propensity of individuals to invest in human capital is also presumably driven by similar motives as their propensity to invest in, say, shares or bonds. The higher the return on their investment, the higher should be their willingness to spend time and other resources accumulating human capital (i.e. reading books, attending classes...).

Within that framework, an almost natural question is whether we have reasons to believe that “education does not pay” or at least that it does not pay so much, particularly in the areas forming the French Community, where many youth tend to underachieve at school.

One simple and relatively straightforward way to assess the ‘profitability’ of schooling in Belgium and its Communities is to resort to Mincerian wage estimates.⁶ These basically help understand how earnings are related to the educational attainment. And they have proved to be very consistent in virtually every country in every time period where they were estimated.

Results in Table 2.2. are based on EU-SILC⁷ gross wage and income data. Using these, one can estimate a log-linear⁸ wage equation known for delivering estimates of the rate of return associated with one additional year of (successfully completed) schooling. These rates of return are primarily driven by the slope of the wage/education curve or the ratio of low-educated individuals’ earnings to better-educated individuals’ earnings.

Panel A of Table 2.2 reports these Mincerian coefficients — computed solely with employed individuals earning some wage (i.e. workers) — for Belgium and a selection of EU countries. These suggest the financial incentive associated with schooling are average in Belgium compared with other EU countries. At 6.7%, the rate of return is higher than in Norway or Denmark — two countries known for their ‘compressed’ wage structure — but lower than in France for instance.

6 The standard form of the Mincer wage regression is $\log W = \beta_0 + \beta_1 S + \beta_2 \exp + \beta_3 \exp^2 + \varepsilon$, where W is the gross wage earned by an individual, S is the number of years of formal education he/she attended, and $\exp$ and $\exp^2$ a 2nd order function of the labour market experience (often proxied by age) that captures the propensity of individuals to i) acquire skills “on the job”, and ii) undergo skill depreciation over time.

7 European Union Statistics on Income and Living Conditions survey.

8 The advantage of the log-linear specification of the wage W is that it generates estimates for the S explanatory variable coefficient that are easy to interpret as they correspond to points of percentage of change of the wage level. For a model $\log W(S) = \beta_0 + \beta_1 S + \varepsilon$. There is indeed that $\beta_1 = d \ln W / dS = (dW/W) / dS \approx [W(S+1) - W(S)] / W(S)$ when $dS=1$.

Panel B of Table 2.2 contains, in its first column, similar estimates for each of the Belgian regions. The figures suggest that it is in Brussels that education offers the best return (8.7%), followed by Wallonia (6.7%) and Flanders (6.4%). Note already that the two regions with the highest drop-out rate (Table 2.1) are those offering the highest rate of return.⁹

The second column of the same table reports similar coefficients. But these are computed using data that also comprise unemployed and inactive people. By definition, these categories generally report very low (or no) wage/salary income. This means that the estimated coefficients aggregate two types of benefits associated with education: i) higher wages when in employment, ii) and a higher probability of being in employment and earning these higher wages. As the risk of zero (or very low) wage (i.e. being out of employment) is much higher among low-educated groups, the estimated returns (first column, panel B) are significantly higher than when restricting the analysis to the sole workers. Note that it is now in Wallonia that the rate of return is the highest (32.6%), followed by Brussels (28.8%) and Flanders (22.1%). Again, the two regions characterised by a higher drop-out rate (Table 2.2) are those granting the highest rate of return.

The last column of panel B, Table 2.2 contains the coefficients that are obtained with the full sample of individuals (employed, unemployed and inactive individuals) when state transfers are added to wages (i.e. unemployment and other social benefits). As transfers predominantly benefit low-educated people — that are more affected by the risk of unemployment and/or are more often inactive —, their inclusion predominantly lift their income. This translates into a flatter income/education curve. Logically, this leads to lower rates of return. The result also supports the idea that state transfers dampen the return on human capital investment. Note, however, that this does not affect our inter-regional comparisons. The two regions characterised by a higher drop-out rate remain those where the incentive to invest in education is a priori the highest.¹⁰

Due to data constraints we are not able to explore the effect of income taxation. But one can reasonably speculate that, due to its progressivity, income taxation reduces rates of return. Nonetheless, we do not expect it to alter the regional ranking highlighted here.

Table 2.2. Return on Human Capital Investment computed using gross annual earnings.

A. Belgium and other EU countries

Country	Workers (wages)	Probt
Austria	7.79%	0.0000
Belgium	6.77%	0.0000
Denmark	4.88%	0.0000
France	9.26%	0.0000
Germany	8.15%	0.0000
Netherlands	8.39%	0.0000
Norway	6.24%	0.0000
Sweden	4.91%	0.0000
United Kingdom	8.10%	0.0000

B. Belgium and its regions

Region	Workers (wages)	All individuals (wages)	All individuals (wages and transferts)
BXL	8.7%	28.8%	14.4%
VLA	6.4%	22.1%	13.8%
WAL	6.7%	32.6%	16.2%

⁹ Similar results are to be found in de la Croix and Vandenberghe (2004)

¹⁰ We abstain here from considering the so-called "general equilibrium" effects of higher educational attainment. Many economists would argue that if many individuals (say a whole cohort) increases its educational attainment, part of the benefits embedded in the current wage structure will vanish. More people holding a certain degree or diploma could translate into a (relative) depreciation of its value on the labour market.

2.3. Lack of school resources?

i) The overall (and long-term) view

There is simply no correlation, or coincidence, between the emergence of an interregional attainment gap in Belgium (Figure 1.2) and the level of public spending on education in Belgium. Many observers in the French Community wrongly believe that the devolution of education to the Communities — and the ensuing budgetary crisis with its string of austerity plans and strikes — played a crucial role in the emergence of this gap.

In truth, there are signs since the mid 1990s that teacher pay in the French community has not risen as much as in other OECD countries (Table 2.3). Between 1996 and 2006 French-speaking teachers got (cumulated) pay increments equal or slightly superior to GDP growth. Whereas across the OECD on average cumulated teacher pay rises exceeded that of GDP by 10 to 19%. There is some evidence that the so-called “communautarisation” has translated into diverging patterns of teacher pay across the linguistic border (Table 2.3). In short, during that period wage increments in Flanders slightly exceeded those registered in the French Community of Belgium. Note however that the inter-community cumulated differences over the period 1996-2006 remain small by international standards

And our main point, however, is that these are very recent developments. And they cannot help us understand attainment gaps that emerged in a very distant past, probably somewhere during the late 1950s and early 1960s (see Section 1, Figure 1.2).

Table 2.3. Change in teachers' salaries (1996 and 2006)

Index of change between 1996 and 2006 in teachers' salaries at i) starting salary, ii) after 15 years of experience and iii) at the top of the salary scale, by level of education, converted to 2006 price levels using GDP deflators (1996=100).

	Primary education			Lower secondary education			Upper secondary education, general programmes		
	Starting salary/minimum training	Salary after 15 years of experience/minimum training	Salary at top of scale/minimum training	Starting salary/minimum training	Salary after 15 years of experience/minimum training	Salary at top of scale/minimum training	Starting salary/minimum training	Salary after 15 years of experience/minimum training	Salary at top of scale/minimum training
Australia	128	97	97	129	98	98	129	98	98
Belgium (Fl.)	107	111	114	104	104	104	104	104	104
Belgium (Fr.)	101	106	109	99	100	100	99	100	100
Denmark	122	113	110	122	113	110	112	110	105
England	124	107	107	124	107	107	124	107	107
Finland	132	129	158	130	116	140	127	123	148
Greece	116	118	121	112	115	118	112	115	118
Hungary	209	196	201	209	196	201	182	189	204
Ireland	111	118	113	105	112	112	105	112	112
Italy	111	111	111	110	110	110	110	110	110
Japan	107	117	104	107	117	104	107	117	104
Mexico	134	133	134	135	138	142	m	m	m
Netherlands	103	110	100	102	111	100	102	107	99
New Zealand	101	115	115	101	115	115	101	115	115
Norway	104	96	105	104	96	105	103	100	101
Portugal	103	112	102	103	112	102	103	112	102
Scotland	120	115	115	120	115	115	120	115	115
Spain	95	95	92	m	m	m	94	94	91
Unweighted average	118	116	117	119	116	117	114	113	114

Source: OECD, Education at a Glance 2008

ii) Enough resources for at-risk pupils?

A related discussion is the one about the propensity of the education system in Belgium to adequately concentrate resources on those who need them most. Do at-risk pupils receive adequate support in French-Speaking schools?

Providing a thorough and well-documented answer to this question is clearly beyond the scope of this review. However PISA 2006 contains some items that can help us shed some light on the issue. A simple econometric exercise focusing on math score¹¹ at the age of 15 essentially reveals the following:

- Belgium (both Communities) is the only country¹² where the number of students per teacher is significantly smaller in schools concentrating aged 15 pupils with lower math scores. There is also, in the French Community, that the number of computers for instruction (per student) is higher in these schools;
- But, Belgium (both Communities) is the only country with Canada where the proportion of teachers with a university qualification (ISCED 5A) is significantly lower in those schools.
- The French Community of Belgium is the only entity where recruiting and stabilising teachers is reportedly more difficult in schools concentrating pupils with lower math scores.

In a nutshell, these results seem to suggest that French-Speaking schools serving the lower segments of the public have more resources (more teachers or computer per pupil). But they may simultaneously suffer for a lower-than-average quality of teaching staff.¹³ Low-achieving pupils are taught in smaller classes but by less qualified and less experienced teachers. This raises the question of whether additional money spent on those schools is adequately allocated. What do poor and underachieving students need in priority: smaller classes equipped with computers or better and more experienced teachers?

2.4. Underperforming schools?

A more promising way of gaining further insight as to what drives poor educational attainment is to compare the attainment of Dutch- vs. French-Speaking schools conditional on the socio-economic status of their pupils. The exercise is somehow similar to the one we did when we discussed long-term/historical trends. It is to split the overall variance of results into two parts. One that points at socio-economic (deterministic) factors, beyond the immediate control of policy-makers, which can be unevenly distributed across the two communities (i.e. more children with an immigration background in the French-Speaking system ...). And the other part¹⁴ supportive of other explanatory factors like cultural specificities¹⁵ or diverging degree of school effectiveness — something a priori more in line with what an economist would hypothesise. The exercise can be carried out using 2006 PISA data on test scores of 15-year-olds. On Figure 2.1 below, each dot represents the average attainment within one of the schools sampled by PISA. The horizontal axis shows the average socio-economic mix of the pupils sampled in the school (20 to 40 per school). The vertical axis measures the average score in math of the same students within the school. Figure 2.2 contains the results of a very similar exercise, but where the horizontal axis displays the share of pupils attending a vocational track within the schools. It thus controls for the curricula pupils are actually exposed to.¹⁶

What emerges is that — whatever the socio-economic profile¹⁷ or the importance of vocational education — pupils in Dutch-Speaking schools tend to outperform those enrolled in French-Speaking ones (refer to appendixes 1 & 2 for similar results in science and reading literacy). The results on display in Figure 2.1 and 2.2 are largely confirmed by a more thorough and elaborated econometric analysis. The gross score gap in math between the French and the Dutch-speaking pupils is estimated to be of 9.1% (i.e. using the French community as a benchmark, the math score are 9.1% higher in Flanders). When we condition on (potentially

¹¹ Similar results as those reported hereafter emerge when analysing science and reading scores.

¹² The comparison includes Canada, Norway, Finland, Sweden and Denmark; countries that are known for their (relatively) smaller SES-related score gap.

¹³ That can be interpreted in terms of vertical differentiation (Debande and Vandenberghe, 2008).

¹⁴ In fact a residual.

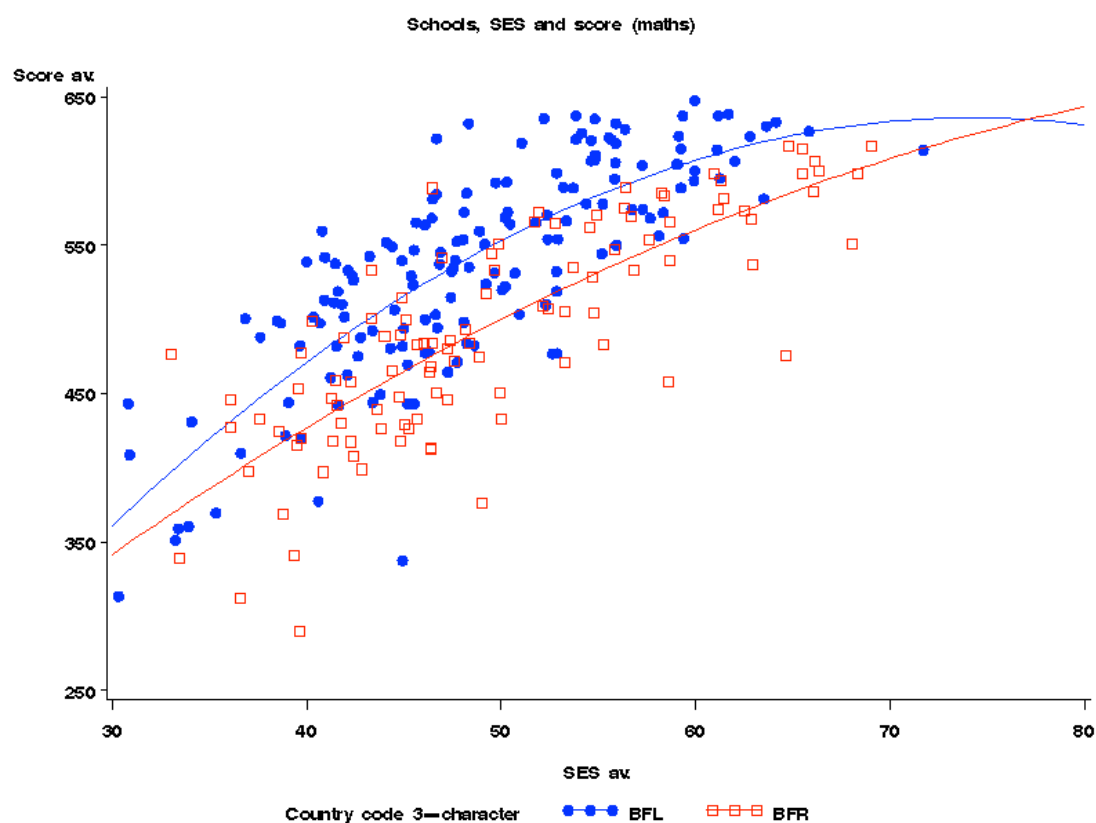
¹⁵ A relatively greater willingness to learn/educate in one Community.

¹⁶ Although this should be questioned in theory, in Belgium it is often taken for granted that pupils who attend a vocational track are less exposed to the “core” topics (math, sciences and reading) evaluated by PISA.

¹⁷ That, in both linguistic groups, is a strong predictor of performance. Belgium (alongside Germany and the Netherlands) is characterised by a big score gap between i) schools concentrating low-SES aged 15 pupils, and ii) those serving the more privileged segments of the population. The best performer on this indicator is Finland. Sweden is the country that represents the closest match to Finland in terms of its capacity to minimise the score gap between high- and low-SES schools. Then come Norway, Spain, Denmark, Canada, the United States, Great Britain, Italy, France. The worst-performers in this respect are Belgium (both communities), Germany and the Netherlands (Vandenberghe, 2009).

important) cross-Community differences in terms of : i) socio-economic profile (both parental profession and material wealth¹⁸), ii) immigration background¹⁹, iii) attendance of a vocational track²⁰, or iv) pupil/teacher ratio... the resulting net gap appears even slightly higher²¹ at 10.8%.²²

Figure 2.1 .Distribution of educational attainment in Math²³ across schools
(conditional on the socio-economic profile of pupils).
Flemish vs. French Community.



Source: PISA, OECD, 2006

18 The average material wealth index reported in PISA is higher for Flanders than the French-Speaking Community (see Appendix 2 for more details).

19 There are more children reportedly with an immigration background in the French-Speaking Community than in Flanders (see Appendix 2 for more details).

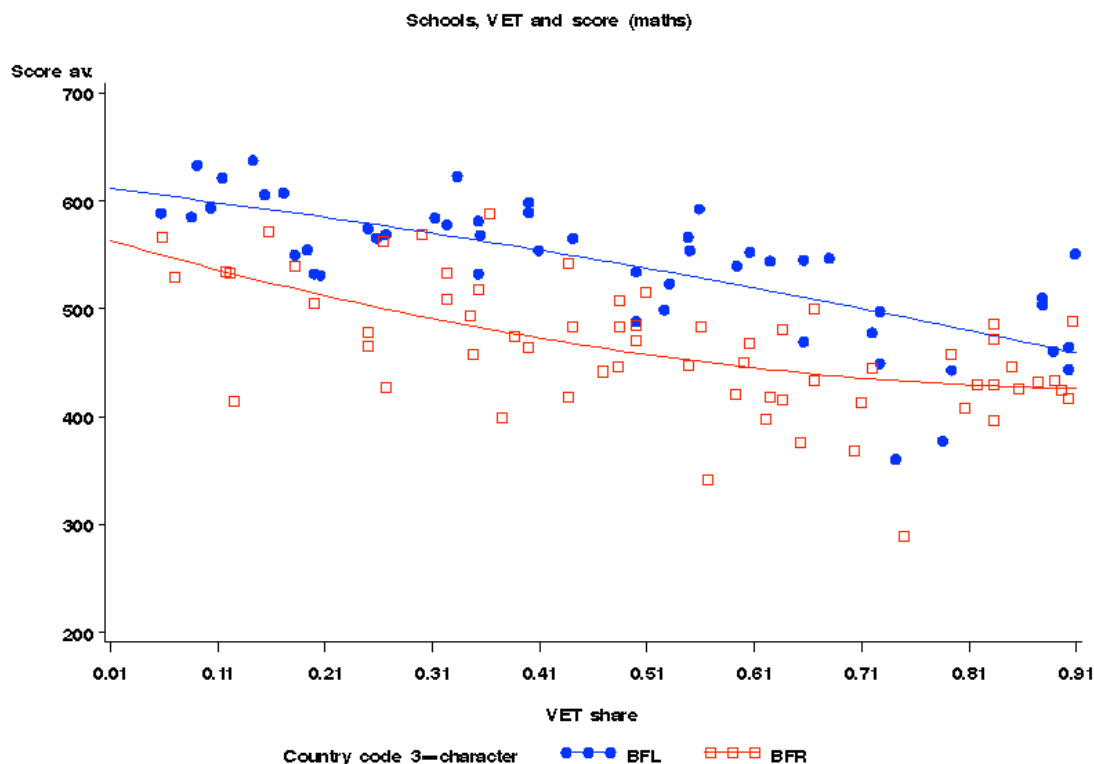
20 But there are significantly more children attending a vocational programme in the Dutch-speaking Community (see Appendix 2 for more details).

21 A possible interpretation of this increment is that the net gap « corrects » for the (clearly higher) incidence of vocational education in Flanders (see appendix 3).

22 For an analysis of this gap based on frontier-estimation methods see Perelman, Pestieau & Santin (2010).

23 Appendixes 1 and 2 display the results for science and reading.

Figure 2.2 . Distribution of educational attainment in Math²⁴ across schools
(conditional on the importance of vocational education (VET)²⁵).
Flemish vs. French Community.



Source: PISA 2006

Source: PISA, OECD, 2006

3. What policy vis-à-vis underperforming schools

3.1. Rapid overview of what is said in the international literature

Disagreements about how to improve these schools' outcomes loom large. They stem in part from different beliefs about what problems underlie their unsatisfactory outcomes. Broadly speaking, critics tend to invoke, at least implicitly, one of the following reasons (Jacob and Ludwig, 2008):

First, schools matter only so much. The real problem rests with the social context in which schools operate – namely, the family, neighbourhood, and peer environments that low-income children experience, or excessive school segregation. Adopting accountability education reforms without changing social policy more broadly will simply punish educators for factors beyond their control, and potentially drive the most able teachers toward schools serving less disadvantaged students. In this case, a necessary condition for making serious improvements in at-risk children's schooling outcomes would involve fixing the other social ills associated with poverty. In the Belgian context, as stated above, this means improving the labour market outcomes of the adults in the families in which at-risk children live, particularly in regions/provinces that have been severely hit by deindustrialisation (ie. Hainaut, Liège) or have experienced massive influxes of (low-skilled) immigrants (ie. Brussels) (see Table 2.1).

Second, schools matter but those serving at-risk students need more resources (e.g., teachers, textbooks, support services) than the other schools to educate the disadvantaged students. In this case, a potential solution would be to provide more money to disadvantaged schools.²⁶ There is evidence that, to a certain extent, this is already done in the French Community. There are also plenty of indications that its decision-

²⁴ Appendix I displays the results for science and reading.

²⁵ The share of pupils attending a vocational programme/track.

²⁶ More on how this can be implemented in Waltenberg and Vandenberghe (2007).

makers are willing to further “differentiate” school funding according to the socio-economic profile of students. But more research is needed to identify how these resources should be spent. Should, as seems to be the case now, these extra resources predominantly finance smaller class sizes? Or should they be used to attract (or simply retain) better and more experienced teachers? (see Section 2.3)

Third, schools concentrating low-achieving children lack the capacity to improve students’ learning, independent of financial resources. Under this perspective, the teachers and the heads of school serving highly disadvantaged pupils are thought to lack the (managerial) skills or knowledge necessary to improve the quality of instruction on their own. Potential solutions to this problem would involve helping schools improve the quality of their standard operating practices, for example by helping implement specific new instructional or organizational practices (i.e. curriculum, instruction, school organization) and/or increasing the instructional capacity of staff in these schools through professional development, and perhaps also more selective hiring.

Fourth, these schools do not have sufficient incentives and/or flexibility to make the best possible use of their resources. They are under-performing because teachers and heads of school are not working hard enough, they are not working toward the right goal. Or they have good local knowledge about what would work best but they are not able to implement these ideas because of centralized authority (bureaucratic rigidities, red-tape...). Proponents of this perspective often claim that without i) clarifying the key objectives of school, ii) holding key actors accountable while iii) granting them more autonomy, additional spending will simply be squandered. Under this view, the solution would be to enhance output-based incentives and provide professionals more autonomy.

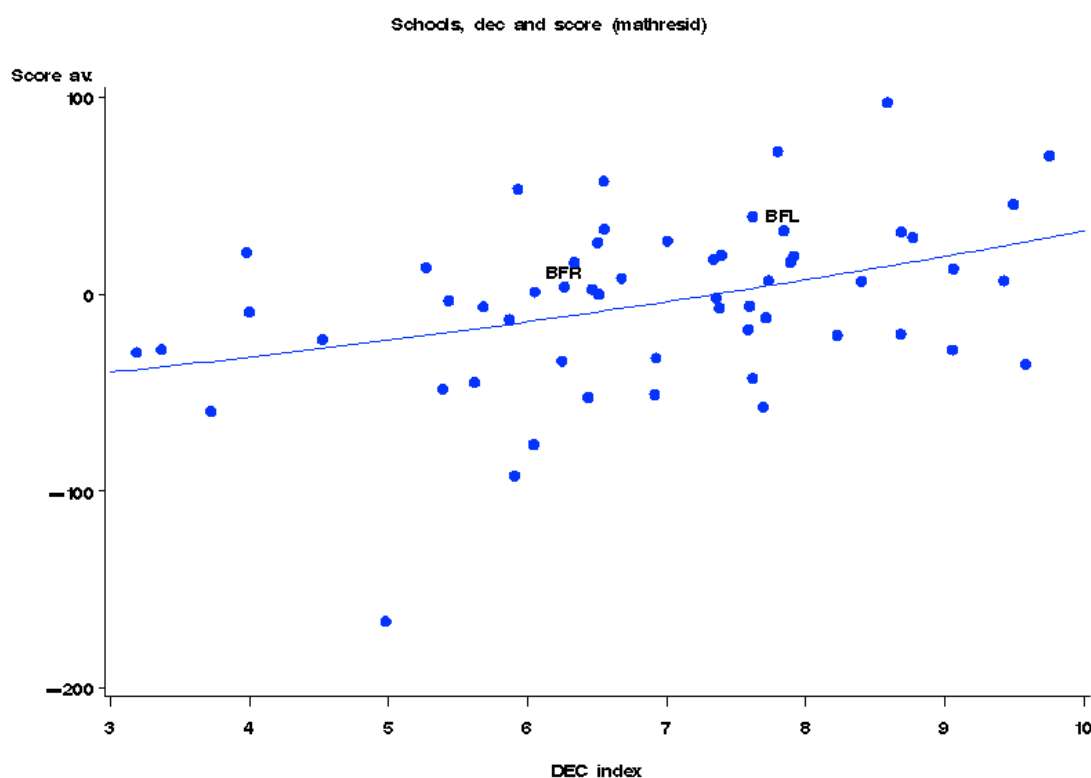
3.2. PISA score and school autonomy/flexibility

It is possible to find some empirical support regarding the benefits of school autonomy/flexibility in PISA 2006. Figure 3.1. displays the positive relationship²⁷ between net average score and the school autonomy index. It is important to stress that the scores (on the vertical axis) are “net” of the mechanical contribution of a range of socio-economic (parental socio-professional status, household material wealth, immigration background), curricular (vocational track attendance) or spending factors (number of pupils per teacher in the sampled schools). The index displayed on the horizontal axis proxies the degree of autonomy characterizing key aspects of the functioning of schools. It is equal to (country/community-averaged) number of dimensions of school management that the head of school declares being his/her direct responsibility vs. that of and intermediate (i.e. municipalities or provinces in the case of Belgium) or central school authority (the Ministry of Education). Dimensions examined by the PISA survey comprise (1) teacher hire, (2) teacher fire, (3) establishing starting salaries (4) determining salary increase (5) establishing the school’s overall budget; (6) allocating this budget; (7) student discipline rules; (8) student assessment (exams and grades); (9) student admission; (10) choice of textbooks.

One point worth stressing is that, like Hindriks & Verschelde (2010), we find that there is more school autonomy on average in the Flemish Community than in the French Community (see Appendix 4 and Vandenberghe and Robin (2004) for a discussion of how decentralisation/autonomy is related to the private vs. public provision of schooling).

27 In true, a simple positive correlation

Figure 3.1. School autonomy^a and math score^b across countries that participated to PISA 2006



Source: PISA 2006

- (a) The decentralisation/autonomy index is simply the (country/community-averaged) number of dimensions of school management that the head of school declares being his/her direct responsibility vs. that of and intermediate or central school authority. Dimensions examined comprise (1) teacher hire, (2) teacher fire, (3) starting salary (4) determining salary increase (5) writing the school's overall budget; (6) allocating the budget (7) writing the student discipline rules (8) student assessment (9) student admission (10) choice of textbooks.
- (b) The raw score are first regressed on several variables that are likely to capture socio-economic, ability or spending differences across countries. They include the highest parental socio-professional index, the family material wealth index, the immigration background, the average pupil to teacher ratio. The residuals (i.e. the part of the raw score that cannot be ascribed to these factors) are then used to compute the values plotted on this figure.

3.3. Some thoughts about the state of school governance in the French Community

The above evidence suggests that school autonomy/flexibility is important. It is plausible, however, that it matters only as part of a broader set of key ingredients that need to be properly aligned in order to maximize school performance. We will argue hereafter that one of the French Community of Belgium's hurdles is to overcome its recurrent inability to align meaningfully key ingredients forming a proper school governance regime.

There is a growing consensus among education economists (Levin, 1997; Wössmann & Fuchs, 2007; Hindriks & Verschelde, 2010) that educational output, apart from each individual's propensity to invest in himself²⁸, is conditioned by the educational system's governance (i.e. large-scale mechanisms or general rules on which teachers and schools have no direct control, because they are the result of political aggregation or historical trends, but nonetheless significantly influence their daily practice). The so-called 'supply side' of the educational process can no longer be represented as a simple black box (Vandenberghe, 1999a).

i) Benchmarks : bureaucracies, incentive contracts or quasi-markets

Belfied (2000) reviews the range of governance mechanisms that are found in education. He first explains that very few educational systems²⁹ operate like proper markets, where 'providers' (schools, teachers...) are

²⁸ Extensively analysed by the human capital model (Schultz, 1961; Becker, 1964) and possibly driven by wage premia documented in Section 2.2

²⁹ Delivering elementary/basic (primary or secondary) education.

financed directly by their 'clients' through (variable) fees, and where the 'clients' enjoy extended freedom of choice as to the provider they pick.³⁰

In the educational sector, the most common and prevalent regulation *modus operandi* is still the hierarchical or bureaucratic model. The latter generally grants no freedom of choice to pupils and their families. Zoning regulations, as in the US, France, Norway or Sweden (until the early 1990s), force pupils to attend the nearest local school. Public administrators supervise local decision-makers (teachers, school heads). Administrators evaluate the educational needs of the population, plan the construction of schools and other facilities, appoint teachers, fix wages and pension schemes for educational staff, determine both the curricula or the certification criteria. In brief, the (central) Minister of education personifies the external co-ordination principle, the governance structure of the system.³¹

But the bureaucratic model is no longer the only possible governance regime. During the 1970's and 1980's one first witnessed a renewed interest in the regulation of public monopolies and oligopolies through incentive contracts. This led to greater decentralisation of decision-making (i.e. more autonomy/flexibility for schools and teachers) and, simultaneously, a greater use of contractual arrangements to ensure compliance with public priorities. Schools would still act as (local) monopolists but the amount of financial resources they received from the government would depend on their ability to meet centrally-defined (and assessed) objectives. This new approach led to the development of output-based (public) financing schemes, a greater use of standardized test to gauge pupils' results.

The other source of innovation was the introduction of market-like mechanisms. The main idea was that it must be possible to preserve free (i.e. publicly funded) education and to mobilise the expertise of final users in order to (advantageously) replace the central authority as a source of control. This led to the introduction of so-called quasi-markets. It was argued that by allowing – properly informed – parents (or youth) to choose their school, governments would force schools to be more accountable to their clients and make a better use of their resources. In quasi-markets, successful decision-making at the school level is rewarded financially by an automatic mechanism, a school's budget is directly indexed on the number of pupils attracted via a voucher system.³² Be it in Chile, New Zealand or Sweden, quasi-market reforms were aimed at solving 'bureaucratic failure' problems: lack of efficiency, low accountability of teachers, excessive red tape (Vandenbergh, 1999b).

ii) The situation in French-Speaking Belgium

In the literature, researchers debate on the relative merits of hierarchies, incentive contracts and education quasi-markets. We argue that such a discussion is not (yet) the most relevant one for the French Community of Belgium. What pundits should rather consider (and combat) is the excessively hybrid nature of its school governance regime (Vandenbergh, 2007).

Hybrid governance exists to a certain extent in Flanders and in many other places in the world. But, in comparison, it has probably loomed larger in the French Community. The current governance regime consists of a relatively unarticulated and chaotic addition of the three models exposed above. Over the past decades, French-Speaking decision-makers have been unable to agree on the amount of power to be granted to (1) the central Ministry, (2) the local professionals (heads of schools) and (3) parents or pupils. Sempiternal divergences of view, echoing deeply rooted philosophical and political schisms, have ultimately led to a situation where the top-down/bureaucratic control (the obligation to implement instructions coming from Brussels) systematically cohabits with school-based autonomy and market-driven school management (the necessity to attract pupils to secure resources and jobs).

School choice and quasi-markets

For several decades the system — including primary, secondary and tertiary education — has espoused the quasi-market principle as it has combined extended freedom of school choice and public (per-pupil) financing. Schools with dwindling enrollment are fully aware that they are bound to lose resources (i.e. teaching jobs). It is

30 Exceptions exist, particularly in Third-World countries like Kenya, Sri Lanka or India where private education is still the rule for thousands of pupils at elementary and secondary level. But many 'private' schools are non-profit organisations, ruled by religious communities that manage to limit costs (and fees) essentially by relying on volunteers.

31 This does not mean that the educational system is necessarily always totally centralised. Like all complex institutions, hierarchic educational systems are characterised by a certain balance between decentralisation and centralisation. Invariably, educational systems throughout the world delegate some responsibilities to schools and – inside those organisations – to the individual teacher

32 An explicit (where each child receives a voucher) or an implicit one (whereby schools are predominantly funded on a per-pupil basis).

also common practice to spend some of the school resources to put ads in the local papers in order to inform/lure prospective pupils. Anecdotal evidence suggests that some schools require their teachers to hit the street at the end of August to reach out to their potential clientele.

Subsidised schools and the contractual approach to education provision

School choice is accompanied by an old tradition of entrepreneurial freedom as to schooling delivery (on the supply side thus). Belgium indeed comprises a larger number of so-called subvented « pouvoir organisateurs/ inrichtende machten » syndicated in three networks (« les réseaux/ networkers ») delivering schooling services alongside the central authority. Incidentally, it is worth stressing that a very significant part of educational services in Belgium are delivered by schools that are (legally) independent (or ‘free’) from the central ministerial authority. Quite logically, in such a context, the contractual approach to education provision has gained importance. Although central authority funds schools, the advocates of such a model claim that those who run schools on a daily base are best placed to decide on how to spend these funds, starting with the recruitment of teachers. And the external control by the central authority should primarily focus on the schools’ contribution to pupils’ attainment (i.e. final outcomes). However, one must immediately stress that output-based control of autonomous school has been long absent from the landscape.

Superimposed hierarchical and bureaucratic control

There is also a (now deeply entrenched) tradition of bureaucratic control of schools, that encompasses ‘free’ subvented ones. It is based on the precepts of central planning and orchestrated by the Minister of Education and its administration in Brussels. The range of regulatory requirements applicable to (all) schools have loomed larger over the past decades, particularly in the French Community. They primarily consist of controlling the way schools use their inputs.³³ Many of the rules applicable to ‘free’ schools aim at aligning the employment status of their teachers on that of civil servants. Schools do not control salary levels. Teachers are not paid at school level, but directly by the Ministry of education. Heads of schools cannot decide upon the relative importance of compensation and benefits (by opting for more/less capital-intensive technologies for example). But, at the same time, heads of school are strongly enticed to respond to market pressures stemming from the school choice and the per capita/voucher funding ingredient.

The Ministry of Education defines teaching credentials which schools must respect when hiring or awarding tenure. Relatively stringent seniority rules limit the capacity of school heads to decide on the teachers they keep on board when enrollment plunges. Weekly schedules and other conditions of work are centrally determined too. Over the past two decades, the central authority in French-Speaking Belgium has also been very active in prescribing the pedagogy to be used by teachers, but without properly considering the other constraints schools have to cope with. Consider, for instance, the uncomfortable situation of a primary school teacher who has been firmly instructed to organise the learning cycle over periods of 2 to 3 years³⁴ but — due to extensive freedom of choice — experiences a 50 to 60% turnover in her class every year.

Hybrid governance and poor performance

Our main concern is that hybrid governance contributes negatively to the overall performance, and in particular to that of the most deprived segments of the population (see Figure 2.1). These are a priori more ‘dependent’ on the quality of education to succeed academically and professionally. Ideally, education should be jointly produced with a contribution from both the demand side (pupils/students and their families) and the supply side (teachers, schools and the public authorities that finance education). But at-risk pupils, coming from broken/ dysfunctional families, are obviously more affected by the way the supply side is structured and operates. They are much less able to compensate or protect themselves from the consequences of ill-conceived or poorly implemented educational policy (Levin, 1997).

³³ As stated earlier there is no tradition of output-based control of schools in the French-Speaking Community of Belgium.

³⁴ The so-called « apprentissage par cycles ».

iii) Why so much hybridisation ?

Our thesis is that the hybrid governance regime that characterises French-Speaking schools largely echoes the diverging political and philosophical “preferences” of the three main “réseaux/netwerken”. The educational landscape is split in two big groups (those who defend the public provision of schooling and those who prefer the provision by ‘free’ subvented schools), each representing about 50% of the total number of pupils. In addition, the advocates of public provision are split between those who defend local provision (by municipalities or provinces) and those who favour a centralised model where public schools are under the sole jurisdiction of the central ministry.

Contrary to most observers, we do not believe that the main problem associated with the presence of “réseaux/netwerken” is cost-inefficiency. The total cost of the system is primarily the result of a product : the number of enrolled pupils X what is spent per pupil on average. The presence of “réseaux/netwerken” [or hundreds of pouvoirs organisateurs/ inrichtende machten] has clearly no impact on the total number of pupils. Some would argue that multiple “réseaux/netwerken” has lead to a higher incidence of small schools (known for their higher cost per pupil *ceteris paribus*). But successive reforms since the early 1980s have resulted in the introduction of mandatory enrollment thresholds limiting the magnitude of this problem. A secondary school for example cannot exist (receive public funding) if it enrolls less than 430 pupils. Similar (but logically lower) thresholds exists for primary schools. Exploiting economies of scale has proved feasible within a system where individual schools are syndicated into so-called networks.

The true “cost” of the “réseaux/netwerken” rather corresponds to their contribution to the emergence of a very hybrid governance regime. The systematic involvement of their representatives in the policy-making process has prevented (and keeps preventing) the emergence of a coherent governance framework. This is because the models of governance they explicitly or implicitly refer to when they bargain are a priori contradictory and difficult to reconcile. What is more, the Minister of education in the French Community is suffering from a lack of pre-eminence and independence vis-à-vis the « réseaux », as one of its mandates it to run and defend the interests of its own « réseau » of schools.

Sceptics would rightly argue that networks (and the underlying antagonist conceptions as to what “good” school governance means) also exist in Flanders. True. But in Flanders, the network syndicating ‘free’ catholic-affiliated schools is (and has always been) very dominant; with a market share exceeding 70% of the total. This has perhaps contributed to limit the ravages of the hybrid governance disease French-Speaking pupils suffer from.

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Acknowledgements

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The report can be downloaded at

<http://perso.uclouvain.be/vincent.vandenberghe/Papers/DegroofVF.pdf>

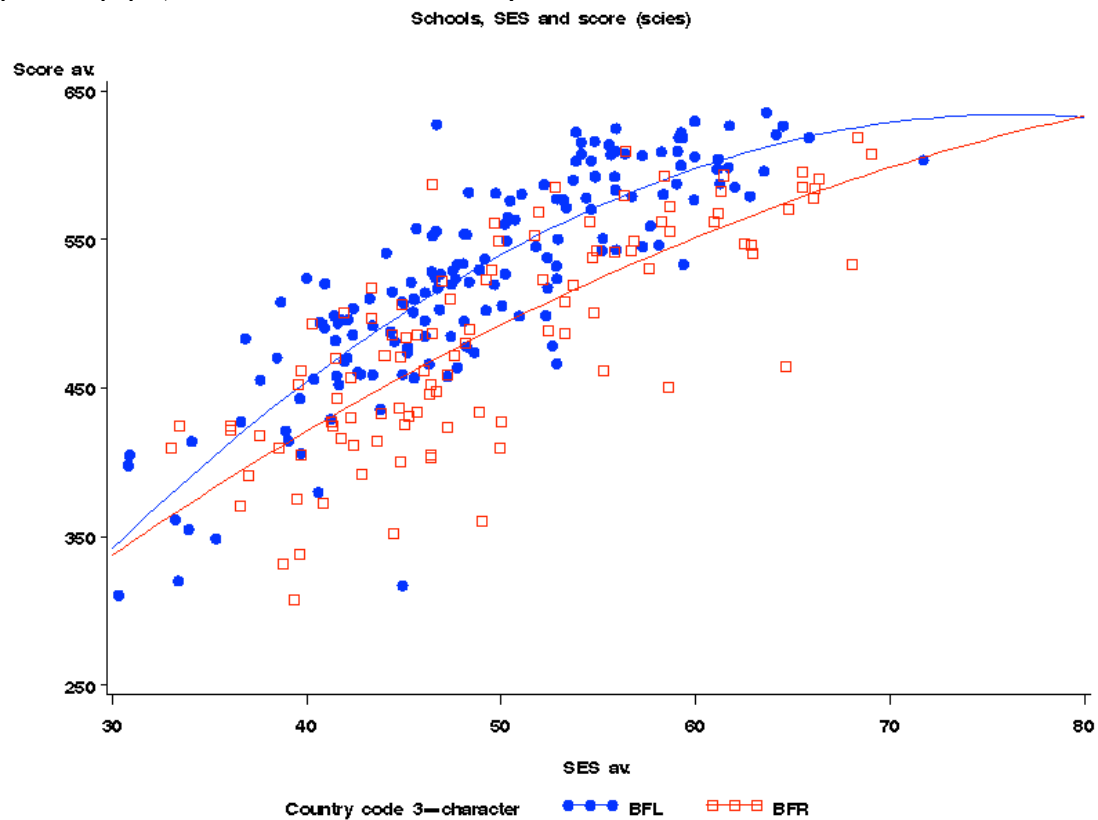
While the article (in French) is accessible at

<http://perso.uclouvain.be/vincent.vandenberghe/Papers/DegroofVF.pdf>

Appendix

Appendix I

Distribution of educational attainment in Science across schools (conditional on the socio-economic profile of pupils). Flemish vs. French Community.

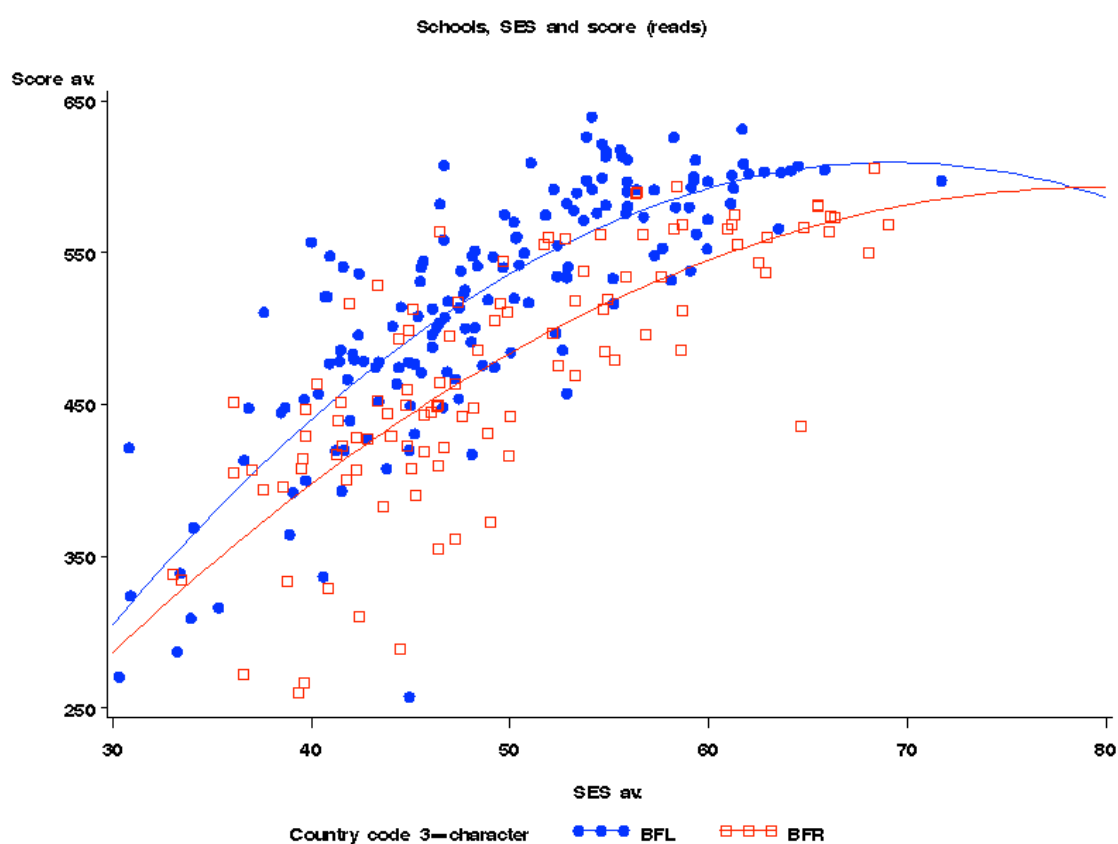


Source: PISA, OECD, 2006

Plotted trends correspond to OLS-estimated quadratic relationship between scores and SES

Appendix 2

Distribution of educational attainment in Reading across schools (conditional on the socio-economic profile of pupils). Flemish vs. French Community.



Source: PISA, OECD, 2006

Appendix 3

Pisa 2006 – Descriptive statistics

Variable	Communitiy	
	BFL	BFR
Math score	545.82	500.99
Science score	531.35	495.68
Reading score	524.34	483.55
Higher parental socio-professional index	49.80	50.62
Family material wealth index	0.38	-0.07
Number of students per teacher (reported average at the school level)	8.70	9.90
Vocational track attendance	0.54	0.36
Pupils with immigration background	0.07	0.20
Private government-dependent school attendance	0.73	0.56
Nobs	5124	3733

Source: OECD, PISA 2006

Appendix 4

Pisa 2006 – School autonomy index in Belgium. Breakdown by linguistic community and school ownership/legal regime.

Community	Public School	Private Government-Dependent^b School
Flemish-Speaking	7.85	7.86
French-Speaking	4.94	7.07

- a) The decentralisation/autonomy index is simply the (country/community-averaged) number of dimensions of school management that the head of school declares being his/her direct responsibility vs. that of an intermediate or central school authority. Dimensions examined comprise (1) teacher hire, (2) teacher fire, (3) establishing, starting sal (4) determining sal. Increase (5) writing the school's overall budg; (6) allocating the budget (7) writing the student discipline rules (8) student assessment (9) student admission (10) choice of textbooks.
- b) Government-dependent schools are those that receive the greatest part of their financial resources from the public authorities (typically the “écoles libres catholiques/vrije katholieke scholen” in Belgium)

Comments

- p. 27 Why is the performance of Flemish and French speaking students so different?

 A stochastic frontier approach

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 Dirk Jacobs (ULB)

Why is the performance of Flemish and French speaking students so different?

A stochastic frontier approach

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1. Introduction³⁵

PISA, the Program for International Student Assessment (OECD, 2007) evaluated students' performances of 15 years old children in 57 countries in 2006. In Belgium near 9,000 children participated in the Flemish, French and German Communities altogether. The results presented in Table 1 are average scores for the three tests: mathematics, reading and science. Students in the French Community are far away, 50 points in average, from students in the Flemish Community. With these scores the Flemish Community is among the top OECD countries and the French Community just below the OECD average. Also standard errors are higher in the French Community and indicate high dispersion of results compared with the Flemish Community. The German Community average scores and standard errors lie between those of the other two communities.

Table 1. Average scores by community - PISA 2006

Community	Reading	Mathematics	Science	Mean
Flemish	529.3 (97.7)	550.2 (93.3)	535.5 (87.6)	538.3 (88.5)
French	480.8 (105.1)	499.4 (99.3)	490.5 (100.6)	490.2 (95.9)
German	505.1 (99.6)	520.2 (93.0)	520.6 (94.8)	515.3 (90.4)
Belgium	511.4 (102.8)	530.9 (98.0)	519.6 (94.9)	520.6 (93.8)

Note: Standard deviations in brackets.

The question we address in this paper is simple: which factors can explain the performance gap between the Flemish and French-speaking students? Do they rest on pedagogical, financial, institutional considerations? Our hope is to deduce from this exercise some policy implications. Anticipating on what follows, we show that most of the performance slack cannot be explained with available variables; as a consequence, the way to improve the educational performance of the French community is still unclear.

To explain performance slacks, we rely on a stochastic frontier analysis estimation using students' individual data. Each student test scores are compared with an estimated best practice frontier, which is built taking into

³⁵ An earlier version of this paper was presented at the 18^{ème} Congrès des Economistes Belges de Langue Française (Perelman et al., 2009).

account students' social background, peer group effects and schools' resources.

There exist a number of studies trying to explain those differences in scores by factors such as autonomy of schools, social origin of the students, size of classes, average spending, etc.³⁶ All these studies have in common to be unable to explain most of the performance gap between the two Communities. In a recent work Hirtt (2008) provides an interesting answer to that outgoing problem. His objective is to explain the differences in the scores in mathematics for PISA 2006. He does that simply on the basis of a simple regression explaining individuals' scores by social origin, immigration status, multiplicity of tracks, school backwardness and attitude vis-à-vis the PISA questionnaire. He is thus able to explain 25% of the difference between Flanders and the French Community.

This paper belongs to that vein of research. It applies the efficiency frontier approach³⁷ to PISA 2006, which rests on a wider sample and provides more information than the previous PISA waves. Indeed we have now detailed information on the way students are selected and the degree of autonomy of school management.

The rest of the paper is organized as follows. In section 2 we briefly present the data. Then we measure the degree of performance of each student belonging to the sample and then we try to explain performance slacks. A final section concludes.

2. Descriptive analysis of PISA 2006

In this section we present the main features concerning Belgian schools and students in PISA 2006 focusing on the differences between the three Communities (Dutch, French and German speaking) and between the two main types of schools, General and Vocational (TAP hereafter, TAP for Technical, Artistic and Professional).

The first part of Table 2 gives an overview of the schooling structure as it appears from the sample of students aged 15 in 2006. One discovers that in the Flemish Community, 53.7% of students are in vocational schools (TAP) whereas this proportion falls to 43.5% and 41.7% in the French and the German Communities respectively. In Flanders three quarters of students are in private (mostly catholic) schools whereas this fraction is 59.9% and 50.9% in the French and the German communities.

The score gap in reading skills is about 100 points between the two types of schools, general and vocational, in the three communities. One finds also an important gap between students attending private schools and those attending state schools, the gap being to the favor of the former. This gap is relatively low in the French Community.

The second part of Table 2 underlines two key features of the student population: their origin (allochtone/autochtone) and their possible schooling backwardness at 15. One observes first that the percentage of allochtones students, defined as either the student either her both parents born abroad, makes about one quarter in the French Community (24.3%) and is even higher in the German Community (27.7%), in contrast with the low 9.0% among the Flemish students. At the same time, the gap in reading scores between autochthones and allochtones is by far the highest in the Flemish Community: close to 100 points (448.1 versus 537.1). It is only 30 points in the German Community (482.4 versus 513.7).

³⁶ See Zachary et al. (2002), Lafontaine and Baye (2007), Hirtt (2008), Verschelde et al. (2009), and Vandenberghe (2010), in this volume, among others.

³⁷ We use in this paper the methodology introduced by Perelman and Santin (2011) to study the performance of Spanish public and private education networks on behalf of PISA 2003 data.

Table 2. Average reading scores - School and student characteristics

Characteristics	Flemish Community		French Community		German Community	
	Part (%)	Score (std)	Part (%)	Score (std)	Part (%)	Score (std)
All	100.0	529.3 (97.7)	100.0	480.8 (105.1)	100.0	505.1 (99.6)
School						
Type						
General	46.3	587.1 (67.6)	56.5	523.9 (90.7)	58.3	540.2 (91.6)
Vocational (TAP)	53.7	478.8 (91.7)	43.5	421.0 (94.9)	41.7	455.4 (88.9)
Authority						
Public	24.6	493.5 (101.8)	40.1	460.6 (104.0)	49.1	474.2 (96.4)
Private	75.4	541.1 (93.3)	59.9	493.4 (104.5)	50.9	534.1 (93.8)
Student						
Origin						
Autochthon	91.0	537.1 (92.9)	75.7	494.0 (103.0)	72.3	513.7 (94.8)
Allochton ¹	9.0	448.1 (108.6)	24.3	440.2 (92.4)	27.7	482.4 (108.3)
Scholar career						
Without backwardness	75.3	554.6 (82.8)	54.2	529.5 (86.1)	58.6	549.7 (80.4)
Backward one year or +	24.7	478.8 (91.7)	45.8	419.9 (95.4)	41.4	440.6 (91.7)

Notes: Special education excluded. ¹ Either the student, either her both parents, was born abroad.

As to the score gap between students without and with backwardness, it is the lowest in the Flemish Community where the phenomenon of grade repetition is also the lowest: 24.7% relative to rates above 40% in the other Communities. We now turn to three factors, which are often cited, in scientific work to explain schooling achievement: 1) family background, 2) peer group, and 3) available resources.

Concerning family background PISA 2006 provides a number of data (e.g., parents' occupation, cultural background) that are summarized in a synthetic indicator of Economic, Social and Cultural Status (hereafter ESCS). This individual indicator is used to build at the school level an indicator reflecting the sociocultural level of each school. Those two indicators are presented in Table 3 for each Community distinguishing between private and public schools.

Table 3. Educational inputs: public vs. private schools
Average values by community

Educational inputs	Flemish Community		French Community		German Community	
	Public	Private	Public	Private	Public	Private
Family background (ESCS) ¹						
- of the student	5.43	5.77	5.39	5.72	5.57	5.65
- of the peer group	5.54	5.88	5.50	5.83	5.68	5.76
School resources						
- quality (SCMATEDU) ²	3.13	2.96	2.64	2.76	2.54	2.23
- hours/week of mathematics	2.80	3.23	3.41	3.49	3.56	3.57

Notes: Special education excluded.

¹ ESCS: Synthetic indicator representing the economic, social and cultural family status based on three type of information: highest occupational and educational level reached by parents and cultural belongs. Rank of variation: 1 to 8.44.

² SCMATEDU: Synthetic indicator representing the level of inadequacy of school resources: pedagogical and audiovisual material, computers, software and Internet access, library. Rank of variation: 1 to 5.07.

Source: OECD (2009), pages 340-346.

It can be noted that the ESCS indicator of a student and that of his school are consistently higher in private schools than in public schools. On average the ESCS of a student and that of his school are not much different. In contrast at the individual level, one observes wide differences.

School resources are represented by two variables reflecting the quality of the available equipment and the number of hours of mathematics delivered. The first variable is a synthetic indicator of quality labeled SCMATEDU that measures the adequacy of educational equipment with the objectives of the relevant school. It is based on questions addressed to the school managers on the availability of equipments such as libraries, computing facilities, etc. As to the number of math hours it is taken as proxy for the available pedagogical means.

Table 3 shows that the indicator of school resources (SCMATEDU) measuring the quality of equipment is higher in the Flemish Community than in the others. For the math hours, one gets the opposite outcome. The index SCMATEDU is higher in private than in public schools in the French Community; the opposite is true in the two other Communities.

A last word on three characteristics of schools under study: selection policies, autonomy and the skill of teachers. Table 4 gives an overview of these characteristics. First there is more selectivity in Flemish schools particularly in the private ones. In contrast in the French Community, a quarter of public schools and only one tenth of private schools are selective. As to the degree of autonomy and responsabilisation of schools management, it is relatively higher in the Flemish schools particularly the private ones. Finally, we have the qualification of teachers; one finds the most qualified in private schools, specially in the German speaking ones.

Table 4. Other school's characteristics

Variables	Flemish Community		French Community		German Community	
	Public	Private	Public	Public	Private	Public
Students' selectivity (%) (SELECT) ¹	30.4	39.0	24.8	8.1	0.0	26.3
School autonomy (RESPRES) ²	1.658	1.857	1.107	1.114	1.077	1.130
Teachers' qualification (%) (PROP5A) ³	33.0	38.7	31.8	37.2	38.8	65.4

Notes: Special education excluded.

¹ Students' selectivity (binary variable): SELECT indicates if the school selects students on behalf of previous reported results and potential recommendation letters.

² School autonomy: RESPRES is a synthetic indicator corresponding to the level of school autonomy and responsabilisation, e.g. budget and staff management. Rank of variation: 1 to 4.12.

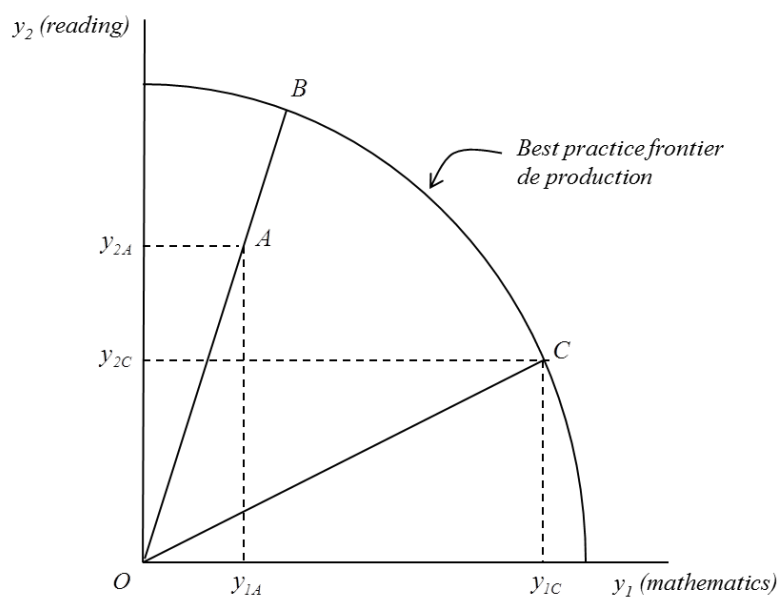
³ Teachers' qualification: PROP5A indicates the share of teachers with university degree diploma.

Source: OECD (2009), pages 307-310.

3. Measuring the inefficiency of 15 year old

The methodology³⁸ used here allows for simultaneously measuring the distance of each student' practice relative to the best practice and for explaining those distances on the basis of factors that are more or less exogenous. Figure 1 illustrates these concepts in a simple setting with two outputs. We assume in this example that there are two decision units, students A and C, who start with the same level of resources to produce two outputs y_1 and y_2 , which represent scores in math and in reading respectively. C is efficient because his scores put him on the frontier whereas A is inside the frontier and his level of efficiency is given by the ratio OA/OB where B is the best practice score he should aim at and A is his actual score.

Figure 1. Best practice educational frontier



³⁸ Battese and Coelli (1995)

To construct the best practice frontier and calculate the degree of inefficiency, we consider 3 outputs and 4 inputs, being the decision unit the student belonging to the sample of PISA. The 3 outputs are the scores in mathematics, reading and science, and the 4 inputs are the ESCS of the student, that of his school, the quality of resources (SMATEDU) and the number of math hours per week.

As expected, the first two inputs have a dominant effect. We obtain for each student an index of efficiency; we have calculated the mean value of these efficiency scores for each community. They are presented on Table 5.

The observed means are those of Table 1, those of PISA 2006. Focusing on the French and the Flemish Communities we have a difference of 48.1 points. Going from the observed scores to the ideal ones, those consistent with the best practice, we obtain a difference of 7.4 (634.5-627.1) and thus an efficiency gap of 40.7 (96.2 – 136.9) to the benefit of Flanders. Note that the ideal scores in the two Communities vary to the extent that the educational technology is not linear. The efficiency gap between the two Communities is smaller than the observed scores gap as the best practice frontier of the French Community is below that of Flanders. In other words, a part of the observed gap (7.4/48.1), namely about 15%, can be explained by this difference in best practices.

We still have to explain this gap of 40.7 points (6.8% of efficiency). This is the objective of next section. But first note that the standard deviations of observed scores which reflect the inequity of our educational system are quite higher than the standard deviations of “ideal scores”. In other words, if Belgium could end up on the best practice frontier, its educational system would turn more equitable.

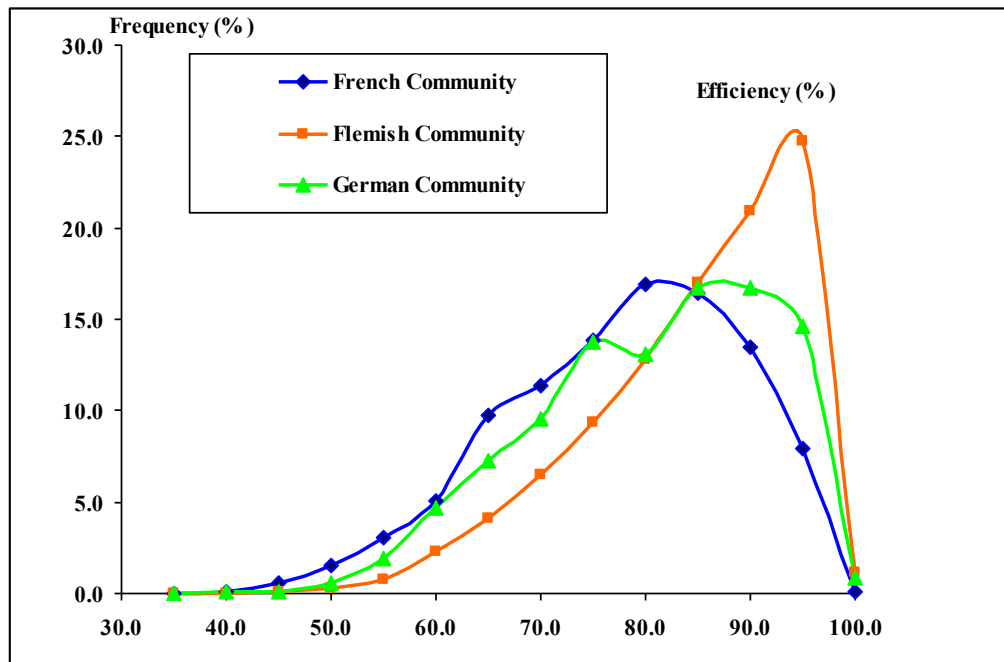
Table 5. Average efficiency scores (mathematics, reading and science)

Community	Observed	Frontier	Distance to the frontier	Average efficiency
Flemish	538.3 (88.5)	634.5 (39.9)	96.2 (57.8)	84.4 %
French	490.2 (95.9)	627.1 (46.1)	136.9 (63.1)	77.6 %
German	515.3 (90.4)	637.7 (33.6)	122.4 (66.6)	80.4 %
Belgium	520.6 (93.8)	632.5 (41.6)	111.8 (63.3)	81.8 %

Note: Standard deviations into brackets.

Figure 2 illustrates the distribution on efficiency scores (on the horizontal axis) for the three Communities. The most efficient students with scores above 97.5 % are located on the extreme right. They comprise 55, 2 and 7 individuals in the Flemish, French and German Communities respectively.

Figure 2. Efficiency scores distribution



4. Determinants of efficiency slacks

As already mentioned our methodology allows us to calculate the efficiency of each student and to explain it. More explicitly we want to explain as much as possible the observed gaps with respect to the best practice frontier on the basis of selected variables. These variables have been introduced for the first time in PISA 2006; they pertain to the selection policy of each school, its degree of autonomy, the qualification of its teaching staff. They have been introduced in our model along with variables related to the origin, the birth place of the student and that of his parents, the gender, a possible backwardness, the type of school (general or vocational ; private or public, Flemish, French or German).

We are first interested by the regression coefficients, their sign and their degree of significance. They are given in Table 6.³⁹ Allochtones do not do as well as autochtones and girls are outperformed by boys. Being backward hurts efficiency as well.

³⁹ We estimated another model in which the community dummy variables, French and German, were crossed with other variables. However, out of some marginal variations the results presented in Table 6 were confirmed.

Table 6. Explanatory factors of students' efficiency

Variables	Estimation		Effect on efficiency	
	Parameter	(t-ratio)	CFR-CFL	CGE-CFL
Student				
Girl	- 0.036	(0.005) ^{***}	- 0.1%	- 0.1%
Born abroad	0.004	(0.008)	-	-
Mother born abroad	- 0.020	(0.006) ^{***}	- 0.2%	- 0.2%
Father born abroad	- 0.038	(0.008) ^{***}	- 0.5%	- 0.4%
Scholar career				
Without backwardness	Reference		-	-
Backward one year	- 0.106	(0.005) ^{***}	- 1.1%	- 0.8%
Backward one year or +	- 0.235	(0.012) ^{***}	- 0.8%	- 0.9%
School				
Student selection	0.008	(0.004) [*]	- 0.1%	- 0.1%
Autonomy	- 0.003	(0.005)	-	-
Teachers' qualification	0.011	(0.015)	-	-
Share of girls	0.009	(0.009)	-	-
Type of education				
General	Reference			
Technical and artistic	- 0.092	(0.006) ^{***}	0.7%	0.8%
Professional	- 0.243	(0.008) ^{***}	0.4%	0.4%
Authority				
Public	Reference			
Private	0.017	(0.006) ^{***}	- 0.1%	- 0.3%
Community				
Flemish	Reference			
French	- 0.090	(0.006) ^{***}	- 5.1%	-
German	- 0.051	(0.009) ^{***}	-	- 2.6%
Intercept (Reference)	0.241	(0.020) ^{***}		
Total effect on efficiency			- 6.8%	- 4.0%

Notes: The parameters are estimated simultaneously with distance function parameters. The reference category corresponds to the intercept.

***, **, and *: significant at the 1%, 5% and 10% level, respectively.

Number of observations: 8595.

As to the main characteristics of schools, a selection policy fosters performance but with rather low significance (only 10%). Autonomy, skill of teachers and the gender ratio have no significant effects. Private schools do better than public schools and the students of vocational schools (TAP) have lower scores than the others.

Finally, unexplained performance slacks between the communities remain. The dummies "French Community" and "German Community" are associated with negative effects that are significant. Namely, most of the difference between the Flemish and the French Communities cannot be explained.

The last columns of Table 6 presents a decomposition of the efficiency gap between the Flemish Community on the one hand and the French and German Communities on the other hand. This gap amounts respectively to 6.8% and 4.0%.⁴⁰ Of that gap the above explanatory variables only explain 1.7% and 1.2%, which means that the dummy "Community" explains most of the gap.

⁴⁰ These effects are estimated taking into account the observed differences across communities for each characteristic.

In the comparison between the two Communities, some variables increase the efficiency gap and others diminish it. For example, schooling backwardness and father's origin are variables that contribute to reduce the gap while the choice of options increases it.

5. Conclusions

Trying to explain the differences in performance among Belgian schools is a difficult and risky endeavor. One cannot avoid being struck by the gap in average performance between the Flemish and the French Communities. Most of this gap remains when some variables such as private/public, nationality, vocational/general are introduced. It is then tempting to construct variables that contribute to reduce the gap but that basically reflect the dichotomy Flemish/Walloon. We do not want to resort to this statistical trick. One is then left with the key question: what makes Flemish schools perform better than French speaking schools?

The two regions are different in many respects: their language to start with, the rate of unemployment, the cultural life, the growth rate, the values and the expectations, the political leanings. The Flemish seems to be more dynamic and optimistic, more conservative and trusting the market than the Walloon. Can these and other characteristics explain the educational performance gap? Quite probably but we are here outside of the expertise of economists.

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Examining the educational gap between Flemish and French-speaking schools

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The contribution of Professor Vandenberghe is very much welcome. Belgium is a special microcosm for education policies. Indeed there is wide variation in education achievement between the French-speaking and Flemish communities (and much wider variations across schools and across students). Flemish schools have been consistently at the top of the PISA tests in math, reading and science (for years 2000, 2003, 2006 and 2009); whereas the French-speaking schools were below the average. The gap is large around 50% in terms of standard deviation (which is equivalent to one year of learning). Moreover this achievement gap is not recent and it seems to keep on growing.

The natural question to raise is why is there a gap if we want to close this gap. Prof. Vandenberghe is giving elements to answer the question and we will complement this analysis with further important considerations arising from our recent work on the issue.

Why is there a gap?

Socio-economic difference: First the Flemish community is richer and parents are more educated. It is widely known that more educated parents get more educated children. For example, in a literature review published in the *Journal of Economic Literature*, Bob Haveman and Barbara Wolfe (1995) conclude that the education of parents is the most fundamental factor in explaining the child's success in school. Is it nature or is it nurture? Is it because more able parents have more able children? Or is it because more educated parents have more resources - caused by their higher education - to provide a better environment for their children to do well in school?

The intergenerational transmission of cognitive ability is now well documented, but it is hard to conceive that Flemish parents are more able on average and so transmit better cognitive ability to their children. The fact is that we do not need to delve in this nurture/nature debate because the analysis of Vandenberghe shows clearly that we cannot resort to difference in the family socio-economic status to explain the achievement gap across communities. It is much more than that. Similar results have been obtained by Hindriks et al (2009), Hirtt (2008), and Perelman et al (2009).

Migrants difference: The PISA 2006 sample reveals that there are three times more pupils with migrant status in the French-speaking schools than in the Flemish school (20% against 7%). It is also well known that non-native pupils perform less at school. This is well documented in Jacobs et al (2009) and Hindriks et al (2009). Recently the Minister of Flemish education reported that pupils with migrant status are three times more likely to lag behind. In 2008-2009, 41% non-native pupils are lagging behind in primary schools against 14% native pupils. For secondary education, these proportions are 69% for non-native against 27% for native pupils (Belga 17/08/2010). The fact that French-speaking schools have much more non-native pupils can explain lower achievements. However the key fact is that migration difference cannot explain the achievement gap, in the sense that pupils with the same migration background will on average perform better in the Flemish schools than in the French-speaking schools. Again there is more than that as already suggested in Hindriks et al (2009), Hirtt (2008), and Perelman et al (2009).

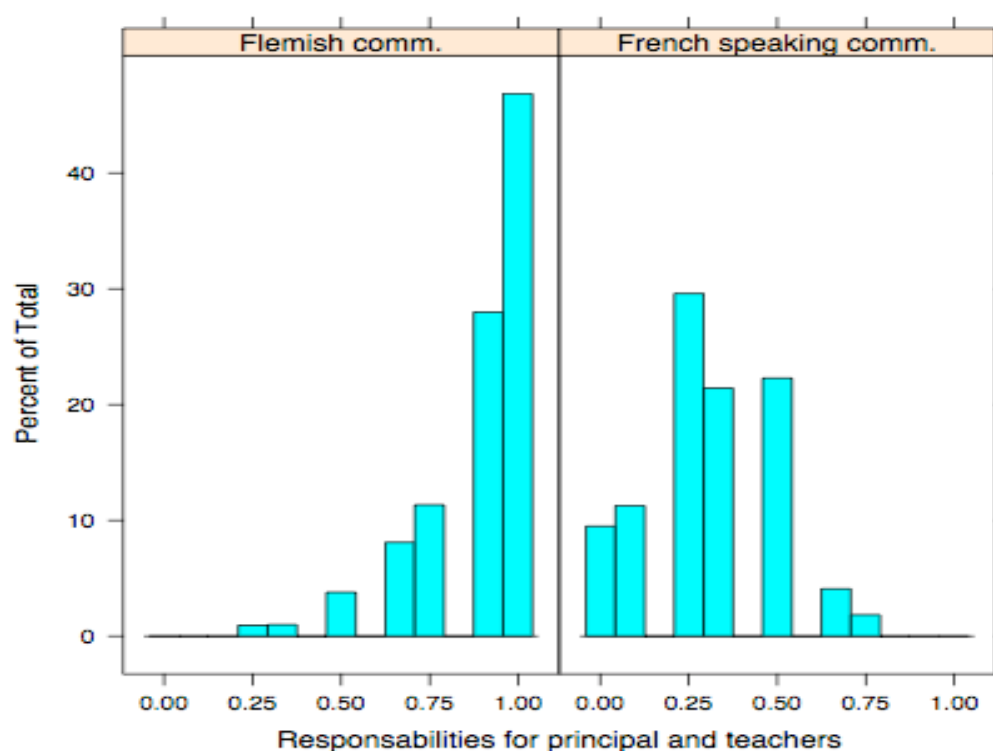
School Autonomy difference:

In Flanders, considerable school policy autonomy was entrusted with non-profit school groups ('de inrichtende macht') that can group several schools of the same type within the same city or region. (see also contribution of Frank Vandembroucke in this volume). The studies of Eurydice (2007, 2008), a EU network that provides

information on and offer analysis of European education systems and policies, provide insight in the structure of school autonomy in Belgian regions in an internationally comparable way. A key feature is the great difference in the degree of school autonomy between the French-speaking and the Flemish Communities. Neither schools, nor intermediate government institutions have the autonomy to set the salaries of teaching or non-teaching staff. Schools have no autonomy in setting the end goals, though full autonomy in the curricular content of optional subjects. Schools also have full autonomy over teaching methods, textbook choice, grouping of pupils, pupil assessment and the decision whether a pupil should resit a year or not.

In line with Eurydice, the PISA 2006 data, summarized in Table 2, show that Flanders is characterized by considerable autonomy in staffing, budget issues, assessment and discipline of pupils and that most of this autonomy is entrusted with the principal and the teachers. To obtain insight in the overall school staff empowerment, we created the composite index “school staff empowerment” as the proportion of the following issues where the principal or teachers have responsibility on: (1) hiring teachers, (2) firing teachers, (3) course content, (4) courses offered, (5) student assessment, (6) student discipline, (7) budget formation, (8) budget allocation. We found that Flemish schools report much larger operational autonomy than French-speaking schools.

Figure: Histogram of school staff empowerment in Flemish and French-speaking Communities



Source: Hindriks and Verschelde (2010).

Hindriks et al (2010) shows that school autonomy boosts educational performance when school autonomy is defined as the operational empowerment of the principals and teachers. The analysis is carried out within the Flemish secondary school system in Belgium as it has a long history of educational school autonomy, but considerable variation between schools in school staff empowerment. Combining detailed school level and pupil level data from the PISA 2006 study with a semiparametric hierarchical model, there are strong indications that operational school autonomy is associated with high educational performance if an appropriate accountability system is in place. Sensitivity tests show that both low and high-performing pupils benefit from this kind of school autonomy.

The larger operational autonomy of the Flemish schools is also associated with a finely and densely defined set of learning targets (see also Frank Vandenbroucke in the same Volume). This is nicely illustrated in the following statistical survey of educational objectives in the Flemish and the French-speaking communities.

The table suggests clearly a better and finer definition of the learning's objectives in the Flemish educational system both in primary and secondary schools.

Tableau 14 Comparaison statistique entre les "socles de compétences" et les "eindtermen" en mathématique (textes réduits à l'énoncé articulé des matières, des connaissances, des savoir-faire)		
	Vlaamse Gemeenschap	Communauté française
Enseignement primaire		
Longueur du texte (signes)	8 867	3 853
Nombre d'items	54	39
Nombre de concepts et de "savoir-faire" relevés	183	84
Premier degré secondaire (enseign. général)		
Longueur du texte (signes)	5 377	2 850
Nombre d'items	44	27
Nombre de concepts et de "savoir-faire" relevés	151	56
TOTAL		
Longueur du texte (signes)	14 244	6 703
Nombre d'items	98	66
Nombre de concepts et de "savoir-faire" relevés	334	140

Source: N. Hirtt (2008)

The missing link: school identity

Vandenberghe shows that difference in educational returns cannot explain difference in schooling. His analysis reveals the striking result that returns to education are higher in the French-speaking community than in the Flemish community, which is exactly the opposite of what standard economic analysis would suggest. To get a better grasp of this outcome, just ask why do girls perform better than boys at school? This cannot be due to better salary prospects since they are paid less and are more likely to work part time. Pursuing this analogy with gender difference is in fact intriguing because we cannot attribute such difference to family background or migration status. We cannot attribute such gender difference to school difference neither (because they attend same schools) and lastly we cannot claim gender difference in cognitive ability. So there is something else as for the community difference. Something less visible and obvious but still very important. What could it be?

Tastes vary with social context. This vision of tastes is important because norms are powerful sources of motivation. Norms affect fine-grain decisions of the moment. Norms drive life-changing decisions as well: on matters as important as whether to quit school, whether to go to the university or go to work.

When we examine people's decisions from the perspective of their identities and social norms, we get new answers to many different economic questions. Who people are and how they think of themselves is key to the decisions that they make. Their identities and norms are basic motivations. This approach was coined "identity economics" by Akerlof and Kranton (2010).

To grasp the relevance of identity economics, and how it differs from standard economics, consider the following puzzling fact. Men and women in the United States smoked cigarettes at vastly different rates at the beginning of the twentieth century, but these rates largely converged by the 1980's. Women now smoke just as much as men. We cannot explain this convergence in terms of standard economic arguments, such as changes in relative prices and incomes, because no such changes were sufficiently large. But we can explain it if we ask how people think about themselves – that is, if we examine changes in gender norms. Women early in the twentieth century were not supposed to smoke; it was inappropriate behavior. By the 1970's, however, advertising campaigns targeted "liberated" women, telling them that smoking was not only acceptable, but desirable.

This example is just the tip of the iceberg. Taking social norms seriously has consequences that pervade the economic system, and also our lives more generally.

But with identity economics it all makes sense, and we gain an entirely new perspective on work and learning incentives. The most important determinant of whether an organization functions well is not the monetary incentive system, as standard economic models would imply, but whether its members identify with the organization and with their activities within it. If they do not, they will seek to game the incentive system, rather than to meet the organization's goals.

Likewise, good schooling occurs not as a result of monetary rewards and costs, but because students, parents, and teachers identify with their schools, and because that identification is associated with learning. Moreover, whether students identify with being in school becomes the major determinant of whether they stay or drop out.

To illustrate the effect of parental implication, Rege et al (2007) have investigated the implications of parental job loss for children's educational attainments. Using Norwegian register data they have estimated how children's school performance is affected by their parents' job loss. Fathers' job loss leads to a substantial decline in children's graduation-year grade point average. The negative effect does not appear to be driven by a reduction in father's income or an increase in parental divorce, or the trauma of relocating. In contrast, the mothers' job loss leads to improved school performance! Such findings are consistent with sociological "role theories," with mothers responding to job loss by allocating greater attention towards child rearing.

Given this, education policy should look at what some successful programs have done to establish a school identity that motivates students and teachers to work according to a common purpose. If we focus on training teachers in how to inspire their students to identify with their school – rather than teaching students to take standardized tests – we just might be able to reproduce these schools' great results.

As economists and policymakers, we could be content to continue looking only at prices and income and related statistics to explain people's decisions. In some circumstances, that might be enough to understand what is happening. But in many other situations, we would miss major sources of motivation – and thus would adopt useless, if not counter-productive, measures aimed at producing the outcomes we seek. Identity Economics provides the broader vision that we need.

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Aspiration is the key for educational achievement

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Vandenberghe's paper is a highly stimulating contribution to our debate. First of all, it contributes, albeit critically, to a proper understanding of our country's institutional problems as the result – or at least the corollary – of a complex set of vicious circles. Secondly, my reading of the evidence presented by Vandenberghe should also warn the Flemish side against complacency. Admittedly, that is my reading of this very interesting paper.

It is well known that there are important correlations, at the level of individual people and/or households between (i) levels of education and levels of income (and labour market position), (ii) levels of education (and income) and health status, (iii) social, economic and cultural status of parents and their children's educational achievements, (iv) expectations concerning the return to investment on education and the motivation to invest effort in one's own education... So, when in one region income is on average lower and unemployment higher, relative to the other region, it is no surprise that in the first region the average health status is worse and educational achievement is less, relative to the second region. Less educational achievement leads to lower future incomes and less future employment. And so you obtain vicious circles of (growing) differences in average income levels, unemployment levels, educational achievement and health status. Such vicious circles explain why, added to linguistic and cultural issues, the socio-economic divide has become so entrenched and is so crucial in our institutional debate.

The question is, then, *primo*, whether such vicious circles are the only explanatory factors for interregional divergence in income levels, educational achievement, unemployment, etc., and *secundo*, even if they have explanatory power today, how they historically emerged. Vandenberghe's contribution is interesting, because he destroys a number of simplistic stories about these vicious circles. His figures undermine deterministic and reductive hypotheses one might entertain concerning the link between "context" (budgetary context, socio-economic context...) and "educational achievement". To put it bluntly, neither the socio-economic background of students, nor the return on investment in human capital, nor the budgetary resources devoted to education can explain the interregional difference in educational achievement: either their impact is not sufficient for an explanation (or there is no differential impact at all), or their impact cannot historically explain the long term divergence in educational achievement between the French and the Flemish community. It is this long-term divergence which is most remarkable in Vandenberghe's figures.

What then is the explanation? Vandenberghe points to differences in governance. But here I have to take issue with him. How could a difference in governance in the 1950s and 1960s explain the emerging divergence in outcomes in the 1960s? At that time education was still a truly unified federal competence. For sure, after the de-federalization of education in 1989, the Flemish government opted for a (new) policy of autonomy both in the state and the non-state sector (with the much-debated creation of the ARGO, The Autonomous Council for the Official Flemish Community Education Network). Since then, the Flemish Minister of Education's impact on the former "state" sector is as limited as his impact on the free, catholic sector. We have given schools a lot of autonomy, whilst guiding them, not with a system of central examinations, but with a rather dense set of "eindtermen" (achievement targets). But that policy change cannot explain what happened before 1990. However, the underlying hypothesis in Vandenberghe's presentation may be linked to differences in the relative weight of the state versus the non-state sectors in the two communities: the relative weight of the state versus the non-state sectors might explain why already in the 1950s, "on average" governance in the Dutch-speaking community yielded more autonomy to schools than in the French-speaking community. Vandenberghe does not explicitly pursue this line of argument, and it would need more analysis to corroborate it.

My personal guess is that a different explanation has to be introduced, linked to socio-cultural factors, which I would like to summarize in one word: “aspiration”. Aspiration is crucial for success in education. I believe that that is so, both on the level of individuals and on the level of their local communities or even the broader society to which they belong. Maybe, one of the main drivers of educational achievement, first of all in the catholic colleges and the state atheneia in Flanders in the 1950s, and then in the rapidly expanding Flemish higher education system in the 1960s, was the drive for emancipation of a community that considered itself at a disadvantage and for which more and better education was part of an attractive “new frontier”. I think that collective aspiration was a key to the rapid democratization of Flemish secondary and then tertiary education in the 1950s and 1960s. Admittedly, this is a speculative explanation, but it is supported by so many individual testimonies and school histories, that I believe it to be the crucial factor.

Vandenberghe is right in pointing out the importance of governance for the effectiveness of schools, not just for the average performance of students, but also for implementing policies for real equality of opportunity. Investing more resources in schools with a disadvantaged population is part and parcel of policies for equality of opportunity, but will not guarantee results. That is the reason, why as a Minister for Education I launched a “Decathlon for Equality of Opportunity in Education”, with ten challenges. The first test in the Decathlon turned on differential funding. However, we repeated times and again that budgets are only a precondition for creating equal opportunities. What really counts is what happens in the classroom, in the school or the university. Mediocre teaching will not create equal opportunities, as we have often said. So the remaining tests in the Decathlon all revolve around the quality (implying issues of language, choice, parental involvement, governance and structure) of education.

A fundamental issue, which is difficult to “organize”, let alone “legislate”, is the level of aspiration of learners and their families and the aspiration of teachers. Aspiration remains crucial. So, in my interpretation, Vandenberghe’s story may signal a warning to us, Flemish people. If, historically, the remarkable surge in educational achievement was the result of a drive for emancipation of a community that considered itself at a disadvantage but aspired for a “new frontier”, complacency with our current situation may be the biggest danger we face. Complacency may turn advantage slowly into disadvantage. Also for that reason, it was necessary – and still is necessary – to call for a real Decathlon in Flemish education.

Comparing performance of the Flemish and Francophone educational systems

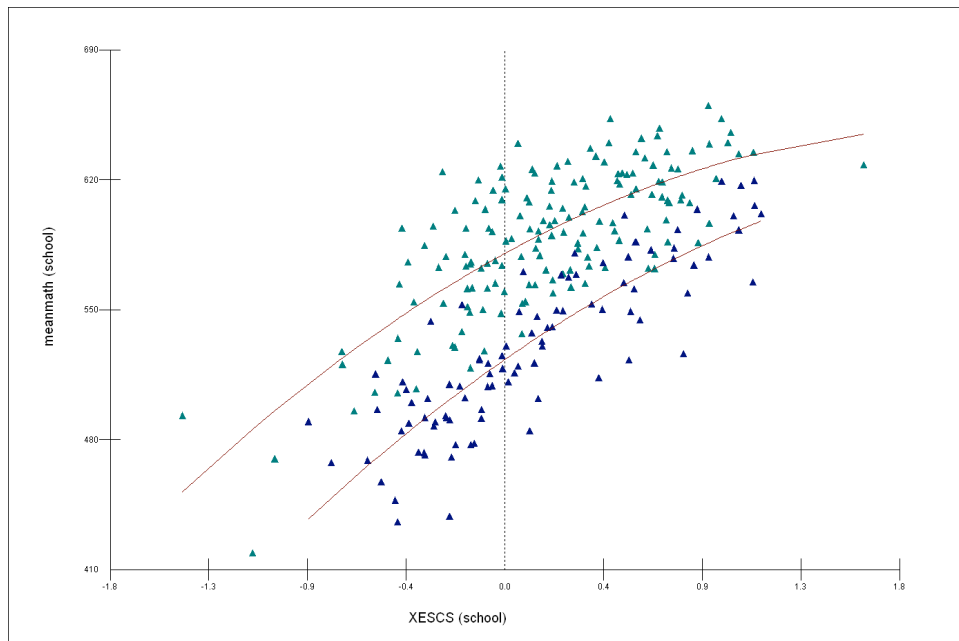
Dirk Jacobs (ULB)

In his paper on interregional educational discrepancies in Belgium, Vandenberghe (2010), making use of the well known PISA data, correctly points out that, regardless of the average socio-economic status of their pupils, Flemish schools consistently perform better than Francophone schools. The higher average scores for PISA for the Flemish community compared to the Francophone community are therefore not merely the result of some elitist schools on the Flemish side outperforming elitist schools on the Francophone side. It is neither the effect of schools with pupils at-risk underperforming even more on Francophone side than on Flemish side. Indeed, every type of school - judged by the composition of the student population - scores better in the Flemish community than in the Francophone community. This finding reported by Vandenberghe (2010), entirely confirms our own analysis of the PISA-data for the King Baudouin Foundation (Jacobs et alii, 2009).

In figure 1 we once again visualize the link between mean socio-economic status of the school population (X-axis) and the average score for mathematics (in PISA 2006) per school (Y-axis). The figure, however, not only shows that Flemish schools systematically outperform Francophone schools. It also shows that the relation between school composition and educational performance is almost linear on Francophone side but curvilinear on Flemish side. This is not without importance.

From a certain threshold onwards an increase in mean socio-economic status of the school population has a much weaker effect on educational attainment in Flanders. More elitist schools (in terms of mean socio-economic status of the school population) show less increase in average educational attainment compared to middle class or mixed schools on Flemish side than on Francophone side. Furthermore, Flemish schools tend to be more concentrated in the right-upper quadrant of the figure, while Francophone schools are dispersed all along the regression line. This equally suggests that school segregation has a bigger impact on Francophone side than on Flemish side. Although it is too early to formulate a final interpretation on these tendencies, they do seem to provide indirect proof that the earlier start of regulation of school enrolment and targeted policies (aiming at equal opportunities) on Flemish side has started to pay off. This being said, there is nevertheless still a systematic difference between Flemish schools and Francophone schools. What could explain this difference? It can be shown, making use of the PIRLS-study, that there are more schools with economically disadvantaged pupils on Francophone side than on Flemish side (Mullis et alii, 2007: 250). This undoubtedly pulls the average Francophone achievement level down, but it does not help to explain why also schools with few economically disadvantaged pupils consistently score worse on Francophone side. PIRLS, by the way, also showed that the problem of pupil absenteeism is considerably higher on Francophone side than on Flemish side (Mullis et alii, 2007: 268), a potentially important explanatory factor which, however, necessitates more in-depth analysis distinguishing different types of schools.

Figure 1. Mean socio-economic status of school population and average mathematics scores per school



In his lead paper, Vandenberghe (2010) argues that “hybrid governance” – the lack of a coherent governance framework -, caused by the presence of a fragmented educational policy landscape (which in turn is linked to the existence of several organisational networks) contributes to poor performance. There would be a bigger problem of “hybrid governance” on Francophone than on Flemish side. As the author himself, however, points out, organisational networks (leading to hybrid governance) also exist on Flemish side. Even though it is true that one catholic network dominates on Flemish side, one might wonder whether this really explains a differential degree of “hybrid governance”. Furthermore, does the level of “hybrid governance” constitute a sufficient explanation for the poorer overall results on Francophone side? If it does, it still needs to be shown what exact elements of “hybrid governance” lead to worse results. The causal chain is not clear.

We have ourselves never taken up the challenge to explain the interregional educational discrepancies in Belgium. Let us note, however, that in our ULB-report for the King Baudouin Foundation (Jacobs et alii., 2009) we have stated that the explanations suggested by Hirtt (2008) seem to be plausible. He highlights the differential level of financial investment in the educational system – average amounts spent per pupil are substantially higher on Flemish side than on Francophone side. He furthermore points to the differences in precision of educational objectives – there are more elaborate “eindtermen” on Flemish side compared to more vague “socles de compétences” on Francophone side. Perhaps this is the missing link when discussing “hybrid governance”. There is more centralisation in goal setting and methods of evaluation on Flemish side than on Francophone side. Educational objectives are more precisely defined on Flemish than on Francophone side, but we are not in a position to assess to what extent this is caused by the relative weight of different educational networks.

Hindriks & Verschelde (2010) have claimed that a higher level of school autonomy and flexibility – measured through a composed index of variables linked to recruitment of staff, allocation of budgets and choice of textbooks – explain better outcomes. As Vandenberghe (2010) and Hindriks & Verschelde (2010) have pointed out, the score on the school autonomy index of PISA is higher on Flemish side than on Francophone side (and this is mainly due to lower autonomy of Francophone public schools). Consequently, Hindriks & Verschelde (2010) plead for more school autonomy on Francophone side. It should, however, be noted they do not see this in contradiction to the need for more centralised methods of evaluation (i.e. socles de competences and use of external evaluation).

I am not convinced that unconditional granting of more school autonomy (in staff recruitment and budget allocation) in itself is a good idea, as Hindriks & Verschelde (2010) seem to be suggesting. Indeed, I fully agree with Vandenberghe (2010) when he states that schools serving at-risk students should be enabled “to

attract (or simply retain) better and more experienced teachers". Enlarging school autonomy, however, will not necessarily lead to this effect. Competition for "better", more motivated and more experienced teachers will then probably only increase and why would schools serving at-risk students win this competition if this policy is not accompanied by other measures?

Our multi-level analysis for the FRB-report (Jacobs et alii, 2009) has shown that, in both linguistic communities, the effect of the mean socio-economic status of the school population on educational attainment is substantially bigger than the effect of the socio-economic status of individual pupils. In our discussion of these results, we have argued that this should not necessarily be interpreted as a pure school composition effect or a so-called "peer-group effect", i.e. the mutual influence pupils have on each other. Indeed, as Vandenberghe (2010) has also pointed out in his paper, schools who find themselves at the lower ends of both the average score for mathematics and the mean socio-economic status of the school population, have a particular characteristic. They tend to have a particular staff situation and a high turnover. School heads complain it is more difficult to attract and especially keep specialised and motivated staff. I wish to study this phenomenon more closely in the future, but it is hence plausible that this correlation of teacher characteristics with school composition leads to a spurious effect. If schools with a particular type of pupils tend to attract a particular type of teachers, the school population composition effect might be less related to a peer-group effect and should rather (or at least also) be understood in terms of differential levels of teacher turnover and teacher's efficacy, i.e. the (degree of) belief or conviction of teachers that they can influence how well students learn, even those who may be difficult or unmotivated (Gibson & Dembo, 1984; Guskey & Passaro, 1994). Let us explicitly stress that efficacy is not a synonym for efficiency. It has, however, been shown by several scholars that once teacher's collective efficacy beliefs are taken into account, effects of student characteristics on achievement are reduced in a substantial way (Newmann et alii, 1989; Bandura, 1993). The challenge is hence to boost teacher efficacy beliefs in schools catering to at-risk pupils.

Enlarging school autonomy in attracting teachers does not seem to be a good option here, if schools with high numbers of at-risk pupils, have no additional advantages to offer to teachers. One should in such a scenario perhaps consider differential incentives (on the level of salaries or other benefits) to allow schools catering to at-risk pupils to attract the "best" teachers. I am aware that this is easier said than done. It will not be easy to introduce differential pay schemes in the educational system, while there is now a practice of fixed salaries regardless of the type of school one is teaching at. Furthermore, one would wish to curtail perverse effects of such a system, as it has to be evaluated precisely what is "a school catering to at-risk students" and one does not want to penalize schools which do a good job in moving at-risk students to the status of out-of-risk students either. Undoubtedly economists are better equipped to invent solutions to such challenges than a sociologist as myself.

Unfortunately, the Francophone community of Belgium did not participate to the OECD Teaching and Learning International Survey (TALIS) which allows for international comparison of teacher characteristics, including teacher self-efficacy. Perhaps I failed to locate them, but I currently have no knowledge of other sources allowing for a systematic cross-regional comparison of the level of teacher efficacy in the two linguistic communities in Belgium. It is, by the way, a real pity that the Flemish and Francophone communities seldom participate jointly to major international educational studies as TIMMS, PIRLS and TALIS – PISA being luckily a notable exception. In my opinion this would be very useful as it would allow us to for instance assess whether the lower results for educational achievement on Francophone side are related to lower levels of teacher self-efficacy (the belief one can make a difference) compared to the Flemish community. If this is the case, the next question is to explain where these differences in efficacy beliefs come from (professional and societal status, salary level, career stability, external guidance, school climate, management style, etc.). I would not be astonished if the differences in precision of educational objectives – "eindtermen" and "socles de compétences" – have an impact here, which brings us again to the point of Vandenberghe with regard to the debate about "hybrid governance" and the plea by Hindriks & Verschelde for more school autonomy. According to the PIRLS study (Mullis et alii, 2007), 96% of Flemish schools compared to only 20% of Francophone schools use textbooks as a basis for reading instruction. As reading skills are better on Flemish than on Francophone side, this seems to be an element pointing to the need for more standardisation and less autonomy rather than the contrary. I have argued that with regard to staff recruitment we probably do not need more (unconditional) school autonomy either, but rather a targeted human resources strategy.

Let me conclude that it is no exaggeration to state that the challenges for the Belgian educational system(s) are immense. It is a comforting thought, however, that we know that it is not an utopian idea to be able to combine equal opportunities (i.e. the neutralization of the effect of socio-economic background on educational performance) with the goal of excellence. The PISA study shows that a country like Finland is able to achieve several goals at the same time: the Finnish pupils are among the best performers in the world (with a high average and a substantial proportion of pupils achieving the highest cognitive levels), the number of Finnish pupils not reaching minimum standards is fairly limited and the impact of socio-economic background on educational attainment is nowhere as low as in this Nordic country (Jacobs et alii, 2009). The Flemish community might be doing well in the ranking of educational attainment, but it scores very poorly as far as equal opportunities are concerned. The Francophone community has mediocre to poor results on both indicators. Although this is a very legitimate and important issue, let us not just focus on differences between the two educational systems, as the shared challenges of assuring equal opportunities and tackling school segregation are just as important. Undoubtedly we should then also start studying them in better and closer cooperation.

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