High Educ
DOI 10.1007/s10734-014-9748-7

Unfairness in access to higher education: a 11 year comparison of grade inflation by private and public secondary schools in Portugal

Gil Nata · Maria João Pereira · Tiago Neves

Abstract Fairness in access to HE is unarguably a subject of paramount importance. Wherever a student's secondary school scores are relevant for access to HE, grade inflation practices may jeopardize fair access. Pressures for high grading are common in the context of educational consumerism and competition between schools and students. However, they are not equally distributed across different types of schools, given that they have distinct relationships with the State and the market, and work with distinct populations. Specifically, the schools that are more subject to market pressures (namely private schools) are, in principle at least, the ones with more incentives to inflate their students' grades. This paper presents an empirical study based on a large, 11 years database on scores in upper secondary education in Portugal, probing for systematic differences in grade inflation practices by four types of schools: public schools, government-dependent private schools, independent (fee-paying) private schools, and specially funded public schools in disadvantaged areas (TEIP schools). More than 3 million valid cases were analysed. Our results clearly show that independent private schools inflate their students' scores when compared to the other types of schools. They also show that this discrepancy is higher where scores matter most in competition for HE access. This means that—usually wealthier—students from private independent schools benefit from an unfair advantage in the competition for

Electronic supplementary material The online version of this article (doi:10.1007/s10734-014-9748-7) contains supplementary material, which is available to authorized users.

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Published online: 20 March 2014

the scarce places available in public higher education. We conclude discussing possible solutions to deal with such an important issue.

Keywords Access to HE · Grade inflation · Public and private secondary schooling · Educational consumerism

Introduction

Access to higher education is affected by inequalities worldwide (Almeida et al. 2012; Brennan and Naidoo 2008; Brunori et al. 2012; Liu 2011; Marginson 2011; McCowan 2007). Inequalities in access derive from cultural, economic and procedural factors (Buisson-Fenet and Draelants 2013; Frempong et al. 2012; Leathwood 2004; Wikström and Wikström 2005). For obvious reasons—their deep embedment in any given context—cultural and economic factors are hard to convert or recast. Procedural elements, in their turn, seem easier to adjust. In fact, as admission procedures often build on and reinforce cultural and economic inequalities, a fine-tuning of selection and admission processes can increase fairness and social justice in the import/export cycle of private benefits and public impacts (Duru-Bellat and Mingat 1988; Konečný et al. 2012; Rahona López 2009; Wikström 2005).

This paper presents an empirical study based on a large, 11 years database of scores in upper secondary education in Portugal. This database provides detailed information about the central components of access to higher education in one of the European countries with greater social inequality (Wilkinson and Pickett 2011) and least social mobility (Causa and Johansson 2010). We describe and analyse a clear case of access to higher education building on economic inequalities. Specifically, we show that independent private, fee-paying secondary schools benefit their students by inflating their scores. This unfairly improves their chances of access to public higher education, which rests on a national competition based on a weighted average of upper secondary school scores and scores obtained in national exams.

Context

Likewise other countries (McCowan 2007; Mora 1997) Portugal has experienced a significant expansion of the higher education system. This has resulted in greatly increased participation rates (Amaral and Magalhães 2009; Portela et al. 2008). In the early 1970s there were only around 30,000 students enrolled; from the mid-90s onwards, that figure has always been close to 400,000. This means that Portugal has moved from an elite to a mass system in approximately 25 years (Amaral and Magalhães 2009). In parallel, a significant increase in science investment, most apparent since the integration in the European Union in 1986, strengthened and expanded the scientific and technological system and brought Portuguese science closer to the European average (Heitor and Horta 2012). A fine example of this overall transformation is that Portugal has become one of the nine OECD countries where young people whose parents have low levels of education have more than 50 % chances of entering higher education (OECD 2012). At the same time, however, the probability of attending higher education if parents have high levels of education is more than three times higher than the proportion of such families in the population

(OECD 2012). This means that, despite the increased access of people from lower socioeconomic levels, social equity has not necessarily improved due to the fact that the upper classes have benefited disproportionately from the massification of higher education (Rahona López 2009, p. 286). This phenomenon has been identified in studies conducted in a number of other countries (Brinbaum and Guégnard 2013; Leathwood 2004; Marginson 2011; McCowan 2007; Mora 1997; Rahona López 2009). To be sure, in the Portuguese case at least, this phenomenon needs to be seen under the light of the structural inequalities that shape the country. In 2012, the at-risk-of-poverty rate was 17.9 % (after social transfers), and the Gini Index was 34.5 %, the third highest in the EU 27 (www.pordata.pt). At the educational level, these structural inequalities generate, among other things, a polarisation of academic qualifications. This is an enduring feature of the Portuguese society. For example, in a recent study, Coutinho (2010) points out that while 25 % of Portuguese secondary school students have parents with an intellectual and/or specialized occupation, 40 % of them have parents whose highest level of education is primary education. This polarisation will probably continue in the near future, as the financial hardship of a significant portion of Portuguese families helps explaining their low investment in education, as well as the high dropout rates that still afflict the country (Horta 2010). Inequalities are long-standing, therefore, even if through an active work of public policy there is now 'more' and 'more diverse' higher education in Portugal (Amaral and Magalhães 2009). To be sure, equity in outcomes also needs to be taken into consideration. Indeed, "Equitable tertiary systems are those that ensure that access to, participation in and outcomes of tertiary education are based only on individuals' innate ability and study effort" OECD (2008). The embedment of both access and outcomes' inequalities in social structures makes them very resistant to change. Indeed, according to Marginson, "No direct confrontation with structural unfairness in higher education has achieved lasting success, in any OECD nation. This is because social inequalities in education are organic to social relations and sustained from outside as well as inside regulated education systems, in the reproduction of families, classes, professions, wealth and political power" (2011, p. 34). In this change-resistant context, Marginson suggests that interventions targeted at specific points of the inequalities' constellation are more effective than attempts to overhaul the system. To do so requires a careful, detailed mapping of educational inequalities in any given context, and also gaining public support for specific, gradual changes to be introduced. Thus, we will do two things in the next paragraphs. First, an outline of how access to higher education works in Portugal. Second, a presentation of the nationally widespread rumour that independent private, fee-paying schools benefit their students by giving them better scores than they deserve. If true, this would mean unfairly improving their chances of accessing higher education and, thus, reproducing and consolidating socioeconomic inequalities through procedural elements in the access route.

Admission processes differ greatly across European countries (Magalhães et al. 2009). What is specific about the Portuguese case is the universal use of the *numerus clausus* system, introduced after the revolution of 1974 in order to avoid overcrowding: it applies to every study programme in universities and polytechnics, whether they are public or private, and irrespective of their demand by prospective students (Magalhães et al. 2009). The number of places available is put forward by the Universities and polytechnic institutions, but subject to approval by the Ministry of Education. Enrolment limits in all programmes means that competition for available places is generalized. Students can apply to a maximum of six programme/institution pairs. The application score is a weighted average of the scores obtained in upper secondary education and the scores obtained in national exams in core scientific areas. These exams are required both for the completion of secondary education and for accessing higher education. By law, the scores obtained in upper secondary schooling have a weight equal to or above 50 %, and the scores obtained in the national exams have a weight equal to or above 35 %, depending on the way each programme/institution pair defines its own requirements. National exams are marked by anonymous, external evaluators who have no knowledge of the student's school of origin. To optimize their chances of admission to public institutions, applicants are encouraged to act strategically. In practice, this amounts to forecasting the minimum score needed for successful application to any given programme/institution pair based on its values in previous years. In other words: which course to apply to given the application score obtained? Consequently, the application strategy involves ranking the aforementioned six programme/institution pairs from the most to the least preferred (Portela et al. 2008). A nationwide competition ensues, centrally organized by the Ministry of Education. With regard to private higher education institutions, they are in charge of locally selecting their own students. However, they must do it in accordance with the same admission procedures defined in national regulations.

As mentioned above, application to higher education demands a good deal of strategic behaviour. This impacts not only the actual moment of application, but also the years before application, namely in what regards school choice. That is: which secondary school to attend in order to get higher scores? This is where the strategic behaviour on the part of the applicants links up with the aforementioned rumour, which claims that some secondary schools also engage in strategic behaviour, namely in grade-inflation to compete for prospective applicants. This rumour has been going on for years (Barroso 2003; Martins 2009), and its intensity has led a former Portuguese Minister of Education to argue that grade-inflation practices should be subject to surveillance and regulation (Justino 2005).

In Portugal, just like in Brazil, it is the private sector that is commonly regarded as most prestigious at the primary and secondary levels, while the opposite occurs at the higher education level (McCowan 2007, p. 584). Therefore, an expensive preparatory trajectory is regarded as a facilitator for accessing the usually more prestigious, and always less expensive, public higher education. Interestingly, this notion that private secondary schools have higher teaching standards coexists with the widespread rumour that they inflate grades to benefit their (fee-paying) students. Some private schools are actually well-known for receiving students from the public system who are trying to get higher scores in order to be able to access their desired study programme in higher education, and can afford the fees. This happens even in the middle of the school years. To be sure, school choice depends not only on an appreciation of teaching standards, but also on consideration of the socioeconomic composition of the school (Avram and Dronkers 2012). It should be stressed that research has extensively shown that socioeconomic background plays a major role in educational decisions, not only because wealthier families have better access to information but also because they can translate that knowledge into specific educational investments, namely private, selective, fee-paying schooling (Rahona López 2009). Therefore, even if information was equally accessible to all, actual school choice might require a given level of financial resources to be implemented.

Portuguese private upper secondary schools can be of two kinds: either purely independent or government-dependent. Independent private schools charge fees, are profit-oriented and have a high degree of discretion in selecting their students. Government-dependent private schools, established to provide educational offers in areas where public provision is not sufficient, may be profit-oriented but are not allowed to charge fees to the students covered by the funding contract with the State; also, they are bound by the same student selection criteria as public schools (namely the catchment area). In their turn, public schools can also be differentiated in two types: 'regular' and TEIP. TEIP is an acronym for Priority Intervention Educational Territories. The Portuguese TEIP experience, which began being implemented in 2006/2007, was inspired by the French ZEP, or 'zones d'action prioritaire'. Basically, it consists in a set of positive discrimination measures aimed at improving the academic success and the social integration of students in deprived areas (MEC 2012).

In 2009/2010, 76 % of the students in upper secondary schooling were enrolled in public institutions (72 % in 'regular' public schools, 4 % in TEIP schools) and 24 % in private schools (19 % in independent schools, 5 % in government-dependent private schools; OECD 2012, p. 333; MEC 2012). The following year, 77 % of the 377,389 higher education students were enrolled in public institutions, and the remaining 23 % in private ones (Fonseca and Encarnação 2012).

The research problem

Grading is a central element of educational systems. Despite this fact, its meaning, purpose and practice vary widely, making it a challenging issue (Allen 2005; Sadler 2009). As the ongoing marketization of education goes hand in hand with a growing focus on measurable academic results, the centrality of grading is reinforced (Ball 2009; Dale and Robertson 2009). The result is the progressive implementation of a productivist approach that is changing central activities in and representations of schools and schooling (Ball 2003; Torres 2009). Students are increasingly regarded as 'customers' or 'clients' to be kept happy for the services provided (McDonald et al. 2012; Sultana 2011; Tavares and Cardoso 2013). The ways in which students are assessed plays a crucial part in securing this satisfaction, as assessment is decisive for future studies. So, as school choice involves strategic decisions, differential grading standards are definitely a parameter to consider. This paper, then, is concerned with a very specific topic in grading: grade-inflation.

By focusing on the differential between internal scores and scores in national exams, our approach to grade-inflation links the only two mechanisms that are used in higher education selection procedures in Portugal. Grade-inflation, however, is not defined simply as the differential between internal scores and scores in national exams per se. Indeed, to do so would be to neglect that there tend to be differences between internal scores and scores in national exams (Suchaut 2008). The literature suggests factors including gender, age, behaviour in and out of school, family circumstances, teachers' judgements regarding students' performance, pressures for high-grading, stress management, among others, explain those differences (Duru 1986; Willingham et al. 2002). Also, the combined effect of these factors tends to make internal scores higher than scores in exams, with stress management, teachers' judgements and pressures for high-grading playing a major role here. This research entails no judgements about the measurement capacities of national exams: they are used as a term of comparison because they are the same for all students across the nation (our concern here is not with the quality of assessment procedures, but rather with the consequences of their application). Taking the average differential between internal scores and scores in national exams as the baseline for our analysis is, then, a strictly methodological decision. It is against this average differential that we then compare the differential of each type of school. Deviations from the average differential are what is meant by grade-inflation in this study. In other words, it is the variation between internal assessments, relative to the baseline, that constitutes grade-inflation. This reasoning derives from the assumption that there are no obvious reasons for the existence of significant or systematic variations between internal assessments relative to the baseline depending on the type of school. In other words, that grading standards should not vary significantly or systematically as a function of the type of school (Woodruff and Ziomek 2004a, b). Indeed, to assume otherwise would amount to stating that anything goes with regard to internal grading standards.

It may be argued that grade inflation is a misnomer as what actually happens is grade compression given that, contrary to prices, grades are bounded above (Brighouse 2008). Whatever the perspective, the phenomenon has been identified in a number of different situations: from the trivialization of "A" and "B" grades without corresponding increases in student achievement in the USA (Hunt 2008), to the links with competition between high schools in the USA and Sweden (Walsh 2010; Wikström and Wikström 2005), through to the seminal works of Duru-Bellat on socioeconomic status grading bias in France (Duru-Bellat and Mingat 1988; Duru 1986) and the articulation with teacher incentives and student achievement in Portuguese secondary education (Martins 2009). Duru-Bellat, in particular, has long argued that grades are attributed in close relationship with the characteristics of the student population at any given school, without a clear link with the actual "value" of a given student, as measured by common or standard tests (Duru 1986; Grácio 1998). This, of course, turns 'individual merit' and 'equal opportunities' into problematic concepts (Leathwood 2004; Liu 2011; Marginson 2011). Nonetheless, given that scores are regarded as an indication of the quality of both schools and students, some grade inflation is beneficial for both, providing, of course, there are no effective control and punishment mechanisms.

Indeed, pressures for high grading are an important explanatory factor for grade-inflation. These pressures are common, but particularly acute in the context of competition between schools, competition between students and educational consumerism (Wikström 2005). Schools that are more subject to market pressures are, in principle at least, the ones with more motives to embark on the grade-inflation game (Wikström 2005). In other words, private schools have more incentives to inflate grades. In this way they may provide their customers with a particular kind of 'elite route' (Buisson-Fenet and Draelants 2013). This is the theoretical hypothesis supporting our analysis, and one which fits the rumour we will be trying to assess. Therefore, according to the theoretical model, grade-inflation will be higher in private independent, fee-paying schools as these are the ones with more incentives to do so.

In short, then, the research problem may be stated like this: is there evidence, from the 11 years database of grades in upper secondary education in Portugal, that private secondary schools inflate grades, thereby unfairly enhancing their students' chances of accessing higher education and potentially contributing to the reproduction and consolidation of socioeconomic inequalities? Furthermore, are there differences between the two types of private schools, as they have distinct relationships with the State and the market (in the case of independent private schools the clients are the students themselves, whereas in government-dependent private schools the client is the State)? Finally, are there differences between the two types of public schools, as they may work with distinct populations (namely, are groups of less favoured TEIP students subject to greater severity in assessment or are they approached with more leniency instead)?

Method and results

Portugal is one of the few European countries that publish school scores on national exams (European Commission, 2012: 45). Since 2001/2002 those data are made freely available for download by the National Exams Committee, an agency of the Ministry of Education (see here: http://www.dgidc.min-edu.pt/jurinacionalexames/index.php?s=directorio&pid=4). The observation unit of the database is the national exam. That is, information is provided relative to each and every national exam undertaken throughout these 11 years. Information is provided on the following variables, among others: school name; nature of the school (public or private); exam subject (e.g., Maths, Portuguese, Physics, …); student score in that national exam; student score in his/her school of origin in that subject. In this research we were concerned only with the combination of three variables: internal score, score in national exam, and school nature (public or private). We analyzed the data from all the databases available (2001/2–2011/12), totalling more than 3,000,000 pairs of scores in national exams/internal scores. The data do not include any personal student identifier. The score scale goes from 0 to 20, where 10 is the minimum 'Pass' level.

It is also important to stress that this study deals with the entire population of pairs of internal scores/scores in national exams for the 11 years considered.[1]

In the table below we present the total number of exams taken each year by each type of school: regular public schools, TEIP (public) schools, government-dependent private schools, and independent private schools.

As mentioned previously, the TEIP initiative began in 2006/7. As such, Table 1 only differentiates between three types of schools between 2001/2 and 2005/6: public, government-dependent private and independent private schools. From 2006/7 onwards it also includes public TEIP schools. Until 2005/6, 88.3 % of the pairs of scores in national exams/internal scores correspond to students of public schools, 6.7 % to students of government-dependent private schools, and 5 % to students of independent private schools. After that, students from regular public schools were responsible for 85.7 % of those pairs, 2 % originated from TEIP public schools, and 6 % both from independent private and government-dependent private schools. Taking those 11 years together, students from regular public schools account for 88 % of the pairs of scores in national exams/internal scores. Only 1 % is accounted for by students from TEIP schools. Students from private schools account for the remaining 12 %, a value split almost in half between independent (5.6 %) and government-dependent (6.4 %) private schools.

[1] At this point, an important methodological issue needs to be addressed. It refers to the use of significance tests with population data. We acknowledge that there is a long-standing, unsettled debate about this (see, for example, Blalock 1972; Cowger 1984; Rubin 1985). While it is beyond the scope of this paper to discuss this matter in detail, the debate can be summarised as revolving around two competing perspectives. At its core, one argues that significance tests are inferential procedures used to rule out sampling error. When population data is available there is no sampling error. Therefore, significance tests are pointless and meaningless in these situations (Cowger 1984). The other view concurs that such tests are devoid of meaning when the goal is simply to describe variations between subpopulations; however they are deemed necessary when one seeks to produce causal, theoretical inferences (Blalock 1972; Rubin 1985). In this debate, we tend to agree with the first perspective. Also, we are well aware that significance testing as usually applied and interpreted, even in studies dealing only with samples, is subject to contention (e.g., McCloskey and Zilliak 1996; Zilliak and McCloskey 2004). In fact, Null Hypothesis Significance Testing, when interpreted correctly, tell us the probability of observing sample statistics when that sample comes from a population where the null hypothesis is true, i.e., from a population in which there are no differences or associations between groups or variables (Cohen 1992; Thompson 2006). Therefore, some authors argue that it is just not useful to test for the null hypothesis when you already know if the null is true and, more importantly, when you know the extent of the differences between groups or associations between variables. We agree with this perspective. However, we acknowledge that the matter is unresolved. Therefore, we also provide here significance tests' results.

Table 1 about here: Number of exams by year and school type (regular public schools, TEIP public schools, government-dependent private schools, and independent private schools).

To achieve our goal in this research we looked for systematic differences in internal scores relative to scores in national exams between the different types of schools. So, as mentioned above, national exams were used as the baseline for comparison. We simply subtracted each student's score in a national exam from his/her internal score in the same subject. Thus, for each of the more than 3 million pairs of national exam score/internal score, we get a value representing the difference between the score that the student got in his or her school and the score that he or she was able to achieve in the national exam on that particular subject (e.g., Maths, Portuguese, and Physics). This difference is the basis for all of the following analysis presented in this paper.

Table 2 presents the average difference between internal scores and national exams' scores by school type. As in the previous table, and because of the already explained situation with the TEIP initiative, we present partial totals from 2001/2 until 2005/6, and then from 2006/7 until 2011/12.

Table 2 about here: differences between internal and national exams' scores by school type (regular public schools, TEIP public schools, government-dependent private schools, and independent private schools).

Positive values indicate that internal scores were higher than scores in national exams. It is clearly visible that, as expected, schools generally give their students higher scores than the ones they get in national exams. On average, for all the years analysed, there was a difference of 2.93 points (in a scale that goes from 0 to 20). The partial totals for 2001/2–2005/6 (2.91) and 2006/7–2011/12 (2.94) are similar. The average difference between public and private schools is not large (2.92 vs. 2.97 for all years analysed) nor systematic: it is larger in private schools from 2001/2 until 2005/6 (3.08 vs. 2.89) but smaller from 2006/7 to 2011/12 (2.85 vs. 2.96). If there seems to be no relevant distinction between public and private schools, things are different when we distinguish between government-dependent and independent private schools. In fact, for each and every year in the analysis, the difference in scores was always higher in independent private schools than in government-dependent private schools. Also, the differences between independent private schools and regular public schools are relevant until 2005/6, with independent private schools giving higher scores than public schools; after that, however, those differences became almost negligible (except for the last year).

It is also worth noting that TEIP schools are, since their implementation, the ones with the higher average difference between internal and national exams' scores.

The results yielded by these analyses did not confirm the usual and widespread rumour that private schools benefit their students by unwarrantedly attributing higher grades than public schools. Based on the hypothesis that the similarity between public and private gross average differentials might conceal a more complex pattern, we decided to dig deeper into the data. Namely, we hypothesised that public schools might be favouring students with lower internal scores while private schools could be favouring students with higher internal scores. Additionally, given the likelihood that the distribution of students across national exams' scores is (very) different between the four types of schools—for example, private independent schools have students that tend to perform better in national exams than students from public schools—we set out to calculate the difference between internal scores and national exams' scores throughout the entire spectrum of scores obtained by students in national exams. For this, we created an additional variable aggregating the scores obtained by students in national exams into 20 classes, corresponding to the score

Table 1 Number of exams by year and school type (regular public schools, TEIP public schools, government-dependent private schools, and independent private schools)

Year	Public		Private		Total
	Regular	TEIP	Gov dpndent	Independent	
2001/2	285,829 (88.8 %)		35,981 (11.2 %)		321,810 (100 %)
			21,377 (6.6 %)	14,604 (4.5 %)	
2002/3	267,116 (87.8 %)		37,173 (12.2 %)		304,289 (100 %)
			21,395 (7.0 %)	15,778 (5.2 %)	
2003/4	273,344 (88.3 %)		36,075 (11.7 %)		309,419 (100 %)
			20,722 (6.7 %)	15,353 (5.0 %)	
2004/5	281,432 (88 %)		38,272 (12 %)		319,704 (100 %)
			21,606 (6.8 %)	16,666 (5.2 %)	
2005/6	344,975 (88.6 %)		44,275 (11.4 %)		389,250 (100 %)
			23,304 (6.0 %)	20,971 (5.4 %)	
TOTAL (2001/2–2005/6)	1,452,696 (88.3 %)		191,776 (11.7 %)		1,644,472 (100 %)
			108,404 (6.7 %)	83,372 (5 %)	
2006/7	219,245 (88.2 %)		29,399 (11.8 %)		248,644 (100 %)
	216,640 (87.1 %)	2,605 (1.0 %)	15,321 (6.2 %)	14,078 (5.7 %)	
2007/8	204,828 (87.6 %)		29,125 (12.4 %)		233,953 (100 %)
	202,606 (86.6 %)	2,222 (0.9 %)	15,478 (6.6 %)	13,647 (5.8 %)	
2008/9	228,047 (87.6 %)		32,368 (12.4 %)		260,415 (100 %)
	222,045 (85.3 %)	6,002 (2.3 %)	16,930 (6.5 %)	15,438 (5.9 %)	
2009/10	222,302 (88 %)		30,268 (12.0 %)		252,570 (100 %)
	216,582 (85.8 %)	5,720 (2.3 %)	15,702 (6.2 %)	14,566 (5.8 %)	
2010/11	225,944 (87.5 %)		32,163 (12.5 %)		258,107 (100 %)
	219,936 (85.2 %)	6,008 (2.3 %)	15,549 (6.0 %)	16,614 (6.4 %)	
2011/12	238,588 (86.8 %)		36,143 (13.2 %)		274,731 (100 %)
	232,661 (84.7 %)	5,927 (2.2 %)	16,619 (6.0 %)	19,524 (7.1 %)	

Table 1 continued

Year	Public		Private		Total
	Regular	TEIP	Gov dpndent	Independent	
Total (2006/7–2011/12)	1,338,954 (87.6 %)		189,466 (12.4 %)		1,528,420 (100 %)
	1,310,470 (85.7 %)	28,484 (1.9 %)	95,599 (6.3 %)	93,867 (6.1 %)	
Total (2001/2–2011/12)	2,791,650 (88.0 %)		381,242 (12.0 %)		3,172,892 (100 %)
	2,763,166 (87.1 %)	28,484 (0.9 %)	204,003 (6.4 %)	177,239 (5.6 %)	

Table 2 Differences between internal and national exams' scores by school type (regular public schools, TEIP public schools, government-dependent private schools, and independent private schools)

<table>
<tr><th rowspan="2">Year</th><th colspan="2">Public</th><th colspan="2">Private</th><th rowspan="2">Total</th></tr>
<tr><th>Regular</th><th>TEIP</th><th>Gov dpndent</th><th>Independent</th></tr>
<tr><td>2001/2</td><td>2.71</td><td></td><td colspan="2">3.06</td><td>2.75</td></tr>
<tr><td></td><td></td><td></td><td>3.03</td><td>3.10</td><td></td></tr>
<tr><td>2002/3</td><td>2.65</td><td></td><td colspan="2">2.96</td><td>2.69</td></tr>
<tr><td></td><td></td><td></td><td>2.75</td><td>3.25</td><td></td></tr>
<tr><td>2003/4</td><td>3.02</td><td></td><td colspan="2">3.12</td><td>3.03</td></tr>
<tr><td></td><td></td><td></td><td>2.88</td><td>3.44</td><td></td></tr>
<tr><td>2004/5</td><td>2.65</td><td></td><td colspan="2">2.69</td><td>2.65</td></tr>
<tr><td></td><td></td><td></td><td>2.48</td><td>2.97</td><td></td></tr>
<tr><td>2005/6</td><td>3.31</td><td></td><td colspan="2">3.52</td><td>3.33</td></tr>
<tr><td></td><td></td><td></td><td>3.28</td><td>3.78</td><td></td></tr>
<tr><td>TOTAL *(2001/2–2005/6)</td><td>2.89</td><td></td><td colspan="2">3.08</td><td>2.91</td></tr>
<tr><td></td><td></td><td></td><td>2.89</td><td>3.34</td><td></td></tr>
<tr><td>2006/7</td><td colspan="2">3.14</td><td colspan="2">3.20</td><td>3.15</td></tr>
<tr><td></td><td>3.13</td><td>3.51</td><td>3.12</td><td>3.28</td><td></td></tr>
<tr><td>2007/8</td><td colspan="2">2.28</td><td colspan="2">2.18</td><td>2.27</td></tr>
<tr><td></td><td>2.27</td><td>2.73</td><td>2.09</td><td>2.27</td><td></td></tr>
<tr><td>2008/9</td><td colspan="2">2.72</td><td colspan="2">2.66</td><td>2.71</td></tr>
<tr><td></td><td>2.71</td><td>3.17</td><td>2.56</td><td>2.77</td><td></td></tr>
<tr><td>2009/10</td><td colspan="2">2.82</td><td colspan="2">2.63</td><td>2.80</td></tr>
<tr><td></td><td>2.81</td><td>3.33</td><td>2.44</td><td>2.83</td><td></td></tr>
<tr><td>2010/11</td><td colspan="2">3.10</td><td colspan="2">2.76</td><td>3.06</td></tr>
<tr><td></td><td>3.08</td><td>3.69</td><td>2.57</td><td>2.94</td><td></td></tr>
<tr><td>2011/12</td><td colspan="2">3.57</td><td colspan="2">3.56</td><td>3.57</td></tr>
<tr><td></td><td>3.56</td><td>4.01</td><td>3.25</td><td>3.82</td><td></td></tr>
<tr><td>Total *(2006/7–2011/12)</td><td colspan="2">2.95</td><td colspan="2">2.85</td><td>2.94</td></tr>
<tr><td></td><td>2.94</td><td>3.48</td><td>2.68</td><td>3.03</td><td></td></tr>
<tr><td>Total *(2001/2–2011/12)</td><td colspan="2">2.92</td><td colspan="2">2.97</td><td>2.93</td></tr>
<tr><td></td><td>2.91**</td><td>3.48</td><td>2.79</td><td>3.17</td><td></td></tr>
</table>

range of 0–20 (0–0.99; 1–1.99;… until 19–20). We then calculated the difference between internal scores and scores in national exams for each class, as shown in the tables below.

The analysis of these tables reveals that government-dependent private and, particularly, independent private schools have a higher proportion of students achieving higher scores in national exams. That is, when looking at the percentage of students from each type of school across scores in national exams (indicated in Tables 3 and 4 by "%N"), one can see that public schools have, a higher proportion of students that perform poorly, namely with scores below the minimum pass level (10 out of 20). Between private schools there are also differences that deserve to be noticed, particularly the higher proportion of students in independent private schools with higher scores (above 13 values) when compared to government-dependent private schools. There are also differences between TEIP schools and the other public schools, with the former presenting a higher proportion of students

Table 3 Differences between internal and national exams' scores by school type (regular public schools, government-dependent private schools, and independent private schools) across results on national exams (2001/2–2011/12), with number of subjects and respective percentage, Anovas' significance, and post hoc tests

	2001/2–2011/12											
	Public			Independent private			Dependent private			Global mean	ANOVA's sig	*Post hoc* tests (Tukey HSD)
	Mean	N	%N	Mean	N	%N	Mean	N	%N			
0	10.44	7,301	.3	10.61	416	.2	10.36	524	.3	10.44	*	Only Ind. Priv. versus Dep. Priv.
1	9.41	18,446	.7	9.63	1,047	.6	9.31	1,185	.6	9.42	***	All pairs
2	8.52	40,962	1.5	8.74	2,325	1.3	8.39	2,595	1.3	8.52	***	All pairs
3	7.63	75,212	2.7	7.98	3,989	2.3	7.48	4,624	2.3	7.64	***	All pairs
4	6.77	116,581	4.2	7.24	5,939	3.4	6.67	7,512	3.7	6.78	***	All pairs
5	5.92	160,346	5.7	6.45	7,615	4.3	5.85	10,481	5.1	5.94	***	All pairs
6	5.16	198,983	7.1	5.79	9,496	5.4	5.09	13,325	6.5	5.18	***	All pairs
7	4.42	230,634	8.3	5.09	10,995	6.2	4.40	16,036	7.9	4.45	***	All pairs but Pub. versus Dep. Priv.
8	3.71	243,027	8.7	4.46	12,065	6.8	3.68	17,172	8.4	3.74	***	All pairs but Pub. versus Dep. Priv.
9	3.00	258,163	9.2	3.85	13,196	7.4	3.02	18,609	9.1	3.04	***	All pairs but Pub. versus Dep. Priv.
10	2.47	264,147	9.5	3.41	14,641	8.3	2.53	19,102	9.4	2.52	***	All pairs
11	1.91	239,288	8.6	2.89	14,188	8.0	1.97	17,793	8.7	1.96	***	All pairs
12	1.40	217,682	7.8	2.42	14,302	8.1	1.53	16,637	8.2	1.47	***	All pairs
13	0.92	189,418	6.8	1.96	13,666	7.7	1.09	14,668	7.2	1.00	***	All pairs
14	0.51	159,801	5.7	1.55	13,231	7.5	0.71	12,642	6.2	0.59	***	All pairs
15	0.10	129,171	4.6	1.09	11,788	6.7	0.29	10,448	5.1	0.19	***	All pairs
16	−0.29	98,311	3.5	0.63	10,167	5.7	−0.06	8,063	4.0	−0.19	***	All pairs
17	−0.69	69,180	2.5	0.17	7,895	4.5	−0.44	5,802	2.8	−0.59	***	All pairs
18	−1.05	43,802	1.6	−0.30	5,754	3.2	−0.82	3,941	1.9	−0.96	***	All pairs
19	−1.40	31,195	1.1	−0.74	4,524	2.6	−1.23	2,844	1.4	−1.31	***	All pairs
Total		2,791,650	100.0		177,239	100.0		204,003	100.0			

ANOVAs' significance values: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4 Differences between internal and national exams' scores by school type (regular public schools, TEIP public schools, government-dependent private schools, and independent private schools) across results on national exams (2006/7–2011/12), with number of subjects and respective percentage, Anovas' significance, and post hoc tests

	2006/7–2011/12														
	Public			TEIP			Independent private			Dependent private			Global Mean	Anova's sig.	Post hoc
	Mean	N	%N	Mean	N	%N	Mean	N	%N	Mean	N	%N			
0	10.59	1,204	.1	10.45	42	.1	10.69	72	.1	10.74	43	.0	10.59	n.s.	
1	1.00	5,556	.4	9.22	171	.6	9.65	316	.3	9.29	199	.2	9.39	**	P ≠ IP; T ≠ IP; IP ≠ DP
2	8.46	15,470	1.2	8.37	524	1.8	8.66	839	.9	8.31	723	.8	8.46	***	All pairs but P versus T and T versus DP
3	7.54	31,551	2.4	7.56	1,007	3.5	7.93	1,601	1.7	7.40	1,562	1.6	7.55	***	All pairs but P versus T
4	6.69	52,882	4.0	6.63	1,541	5.4	7.18	2,536	2.7	6.61	2,858	3.0	6.70	***	All pairs but P versus T and T versus DP
5	5.86	75,956	5.8	5.86	2,189	7.7	6.37	3,442	3.7	5.82	4,428	4.6	5.88	***	All pairs but P versus T, P versus DP, and T versus DP
6	5.11	95,702	7.3	5.11	2,607	9.2	5.73	4,616	4.9	5.05	5,851	6.1	5.13	***	All pairs but P versus T, and T versus DP
7	4.41	112,211	8.6	4.44	2,881	10.1	5.08	5,428	5.8	4.41	7,367	7.7	4.44	***	P ≠ IP, T ≠ IP, IP ≠ DP
8	3.72	118,606	9.1	3.71	2,852	10.0	4.42	6,305	6.7	3.73	8,235	8.6	3.76	***	P ≠ IP, T ≠ IP, IP ≠ DP
9	3.07	124,485	9.5	3.03	2,808	9.9	3.96	6,856	7.3	3.12	8,798	9.2	3.11	***	P ≠ IP, T ≠ IP, IP ≠ DP
10	2.58	128,458	9.8	2.49	2,691	9.4	3.50	8,043	8.6	2.69	9,219	9.6	2.64	***	All pairs but P versus T
11	2.06	114,045	8.7	2.06	2,269	8.0	3.03	7,767	8.3	2.17	8,549	8.9	2.12	***	All pairs but P versus T and T versus DP
12	1.58	102,340	7.8	1.65	1,878	6.6	2.58	7,971	8.5	1.77	8,201	8.6	1.66	***	All pairs but P versus T and T versus DP
13	1.11	87,766	6.7	1.24	1,548	5.4	2.13	7,606	8.1	1.30	7,223	7.6	1.20	***	All pairs but P versus T and T versus DP
14	0.67	73,624	5.6	0.66	1,170	4.1	1.71	7,471	8.0	0.95	6,248	6.5	0.78	***	All pairs but P versus T
15	0.22	58,694	4.5	0.38	898	3.2	1.22	6,652	7.1	0.49	5,200	5.4	0.34	***	All pairs but P versus T and T versus DP

Table 4 continued

	2006/7–2011/12														
	Public			TEIP			Independent private			Dependent private			Global Mean	Anova's sig.	Post hoc
	Mean	N	%N	Mean	N	%N	Mean	N	%N	Mean	N	%N			
16	−0.20	44,727	3.4	−0.03	615	2.2	0.72	5,812	6.2	0.08	4,108	4.3	−0.08	***	All pairs but P versus T and T versus DP
17	−0.69	31,679	2.4	−0.38	382	1.3	0.21	4,546	4.8	−0.37	3,014	3.2	−0.56	***	All pairs but T versus DP
18	−1.10	20,869	1.6	−0.75	248	.9	−0.32	3,421	3.6	−0.85	2,141	2.2	−0.98	***	All pairs but T versus DP
19	−1.37	14,645	1.1	−1.18	163	.6	−0.76	2,567	2.7	−1.13	1,632	1.7	−1.27	***	All pairs but P versus T and T versus DP
Total		1,310,470	100.0		28,484	100.0		93,867	100.0		95,599	100.0		***	

P public, *T* TEIP, *IP* independent private, *DP* dependent private

ANOVAs' significance values: n.s. = non significant, * $p < .05$; ** $p < .01$; *** $p < .001$

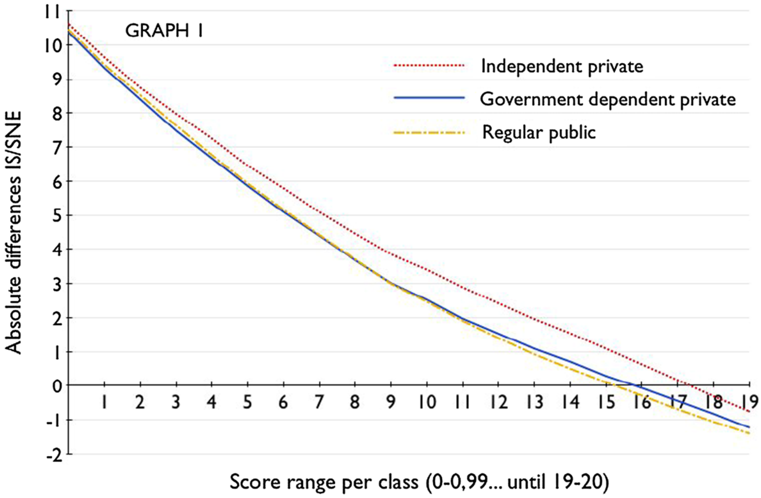

Fig. 1 Differences between internal and national exams' scores by school type (regular public schools, government-dependent private schools, and independent private schools) across results on national exams (2001/2–2011/12)

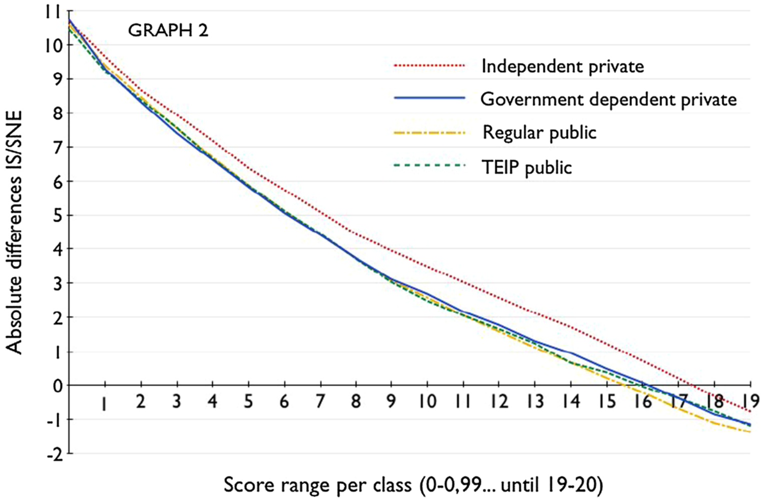

Fig. 2 Differences between internal and national exams' scores by school type (regular public schools, TEIP public schools, government-dependent private schools, and independent private schools) across results on national exams (2006/7–2011/12)

performing poorly. The overall picture confirms what one would expect: TEIP schools (recall that these are schools in special programs for disadvantaged areas) have a higher proportion of students that perform poorly in national exams, followed by other 'regular' public schools, followed by government-dependent private schools, and independent private schools are the ones that have a higher proportion of high achieving students.

Figure 1 presents the means of the differentials for the three types of schools (public, government-dependent private, and independent private) for all years analysed, as indicated in Table 3. Figure 2 presents the equivalent data, but for Table 4, including also TEIP schools, and thus covering only the period from 2006/7 until 2011/12.

In both charts, the *y* axis represents the difference between the internal score and the score that the student got in the national exam. The *x* axis represents the scores in national exams, divided into 20 classes. Thus, the 0 in the *y* axis represents the absence of difference between internal scores and scores in national exams. Positive values mean that internal scores were higher than scores in national exams. Negative values mean just the opposite, i.e., that internal scores were lower than scores in national exams.

It is clear that both Figs. 1 and 2 reveal a much more complex picture than the one presented in Table 2. First, it is immediately visible that differences between internal scores and scores in national exams start at a peak (with differences over 10 points out of a maximum of 20) and decrease steadily as scores in national exams get higher. As 10 is the minimum internal score students need to attend national exams, it is not surprising that the largest differences appear in those who got the lowest scores in national exams. That is, the first class in the x axis represents students who got a score between 0 and 0.99 in the national exam, but got a score of 10 or more in their respective schools. As students start to get better scores in national exams, the differences between scores decrease slowly until a point—somewhere between 16 and 18, depending on the type of school—where internal scores coincide with the scores in national exams; this corresponds to the 0 line on the y axis. The graph lines end in negative values, meaning that the very high scores achieved in national exams where actually higher than the ones students obtained in their schools of origin. Second, but perhaps more important, it is clear that there are differences between the lines of each school type. Indeed, a very clear and stable pattern appears: all four school types start out from a similar level of differences (at the top left of the chart) but, as grades in national exams get higher, the differences between schools start to get wider. It is patent that independent private schools clearly separate themselves from the other three types of schools, as they systematically give higher internal scores than regular public, TEIP and government-dependent private schools. Although the graphs aggregate data from 2001/2 until 2011/12, the very same pattern is observable in each and every year in the analysis (for the year by year data, please see the Supplementary Electronic Material to this article). Third, there is a smaller but also consistent effect between regular public schools and government-dependent private schools. Public schools seem to benefit students with worse scores in national exams a little bit more than government-dependent private schools. However, as scores in national exams increase, this relationship is reversed, with government-dependent private schools favouring their students a little bit more than regular public schools. Finally, TEIP schools present a more irregular pattern. The fact that such pattern was not systematic across all years may be due to the lower number of national exams undertaken by students from TEIP schools, as reported in Table 1.[2]

[2] Although the usefulness of doing statistical significance testing on population data is controversial, as discussed in the previous footnote, we have conducted Analysis of Variance (ANOVAs) for each one of the 20 classes of scores in national exams (the rows in Tables 3, 4 or the *x* axis in the graphs). Regarding the data presented in Table 3 (and Fig. 1), the differences between the three types of schools yielded statistical significance in all classes, with the first class (0–0.99) reaching a p value under 0.05 and all the others classes a p value under 0.001. *Post hoc* tests (Tukey HSD) revealed differences between independent private schools and government-dependent private schools in the first class, and between all 3 types of schools in all other classes, with the exception of the 7th, 8th, and 9th classes, where the difference between public and dependent-private schools did not reach statistical significance. As observed in Fig. 1 (or Table 3), that is

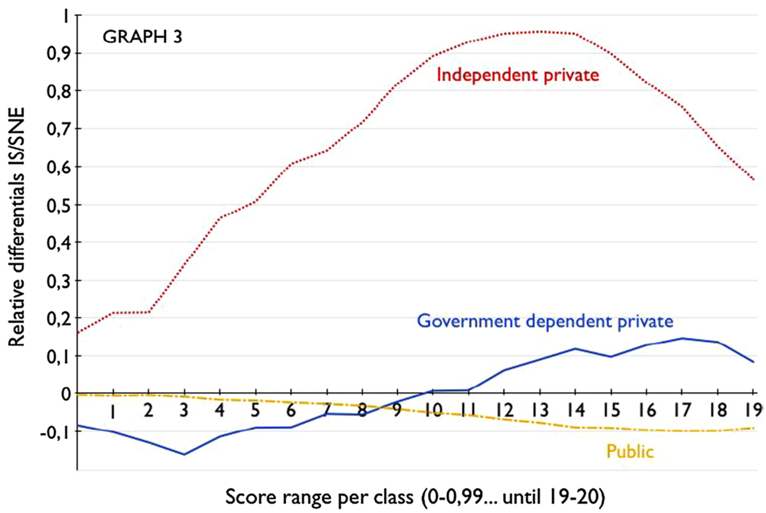

Fig. 3 Differences between internal and national exams' scores relative to the average difference by school type (regular public schools, government-dependent private schools, and independent private schools) across results on national exams (2001/2–2011/12)

Faced with these results, we decided to focus explicitly on the differences between the four types of schools relative to the average difference of all schools, rather than on the differences relative to an absolute 0 point that represented the coincidence between internal grades and national exams' grades (as shown in the previous graphs). To do so, we calculated the global average difference between internal scores and scores in national exams for each one of the 20 classes of scores in national exams. We then contrasted each of these 20 global averages against each school type's average difference per score class. The deviations of the different school types' averages from these 20 global average differences (represented by the 0 in the *x* line) are depicted in Fig. 3 (2001/2–2011/12, 3 types of schools) and in Fig. 4 (2006/7–2011/12, 4 types of schools).

These graphs enable a clearer visualization of what was described previously, as well as a more detailed discussion of the magnitude of the differences between the different types of schools. The irregular pattern of TEIP schools becomes more evident here than in the previous graph: it oscillates relative to both the global average difference (the 0 in the *y* axis) and the line of regular public schools. The relationship between regular public schools and government-dependent private schools also becomes clearer: there are small relative benefits for students from regular public schools in the lower scores, and small relative benefits for students from government-dependent private schools as scores in national exams increase.

Footnote 2 continued
the point where the two lines intercept and cross each other. Regarding the data presented in Table 4 (and Fig. 2), the differences between the four types of schools yielded statistical significance in all classes but the first (0–0.99), with a *p* value under 0,01. *Post hoc* tests (Tukey HSD) revealed differences between independent private schools and the rest throughout the score range. Also, from the class 10–10.99 onwards, post hoc tests revealed differences between government dependent private and public schools. Finally, post hoc tests show that TEIP schools do have a more irregular pattern.

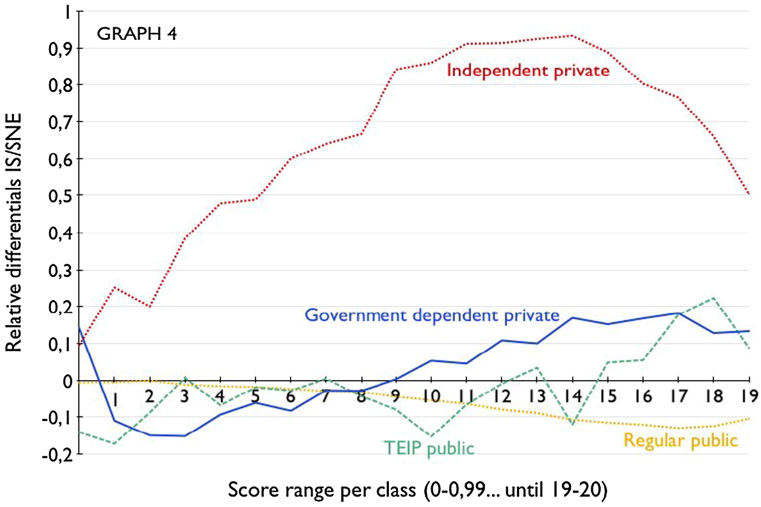

Fig. 4 Differences between internal and national exams' scores relative to the average difference by school type (regular public schools, TEIP public schools, government-dependent private schools, and independent private schools) across results on national exams (2006/7–2011/12)

What is strikingly evident, however—and perhaps the most worth noting fact—is the widening gap between independent private schools and the others, namely regular public schools, as scores in national exams get higher. This difference can amount to as much as 1 score point. In fact, the differences start out relatively small in the lower scores: a little bit less than 0.2 points when all 11 years are taken into account, and close to 0.1 from 2006/7 until 2011/12. They then steadily increase, reaching a peak when scores in national exams are in the range of 14–16. Here, students from independent private schools get, on average, one more point than students from regular public schools who had the same scores in national exams. After this peak, as scores get nearer the maximum possible (20 points), the difference decreases a little.

To summarize, we first averaged the differences (as calculated and shown in Figs. 3, 4). We then presented the results of those calculations in Fig. 5. Although this last graph does not depict the differences across scores in national exams (as these have been averaged), it demonstrates that the differences identified are in fact stable throughout all years under analysis. There is a clear, distinctive pattern differentiating independent private schools from the other three types of schools: while the latter present small deviations from the global average, the former deviate strongly from that average.

As previously highlighted, government-dependent private and, particularly, independent private schools have a higher proportion of students achieving higher scores in the national exams. It may then be argued that an arithmetic average does not account for this fact, and that consequently may not offer an accurate portrait of the differences. To address this matter, we calculated a weighted average of the differences between the four types of schools throughout the years. This was done by multiplying the differential of each type of school in each of the 20 classes by the proportion of their respective students in each class. From this we were able to produce a weighted average of each type of school. This was done for each year and the results are depicted in Fig. 6.

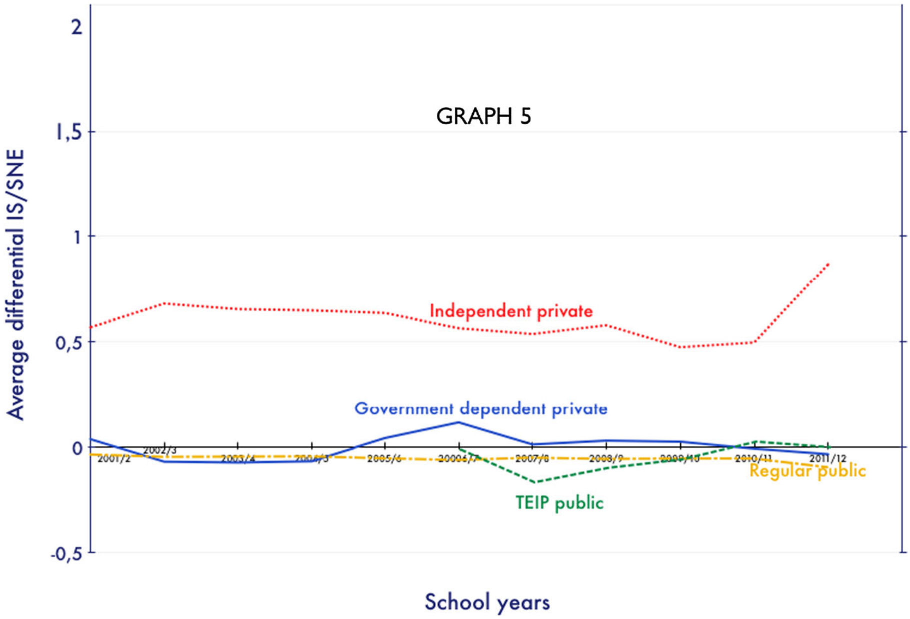

Fig. 5 Average of the differences by (the 20) classes of scores in national exams (2001/2–2011/12)

If one compares the unweighted average differences (Fig. 5) with the weighted average differences (Fig. 6), two noteworthy facts became apparent. First, the magnitude of the differences between independent private schools and the other types of schools becomes wider. This was to be expected if one takes into account that independent private schools tend to have a higher proportion of high achieving students, and that it is among the high achieving students that differences reach their peak (as seen clearly in Figs. 3, 4). Second, there are two peaks; one which although was previously visible (2011/12), now surfaces with increased magnitude; and the other, previously invisible in the unweighted averages data, but now made clearly apparent. It can then be concluded that, by taking into account the different proportions of students across scores in national exams, not only the differences between independent private schools and the other type of schools appear to be larger, but also that the (weighted) average differences reached almost 1.5 points in 2003/4, and almost 2 values in 2011/12. As the scale ranges from 0 to 20 values, these magnitudes are arguably very high, and consequently very worrying, if one considers their impact on access to higher education. We discuss this in more detail below.

Although these last two graphs are useful for their stated purpose, it is important to recall that the differences they portray are not constant across the range of scores on national exams. Rather, they increase as scores start to make more of a difference in the competition for access to higher education access, i.e., when scores get higher (as shown in Figs. 3, 4).

Discussion and conclusions

Our results show clearly that independent private schools inflate their students' scores when compared to both public and government-dependent private schools. It is also plain

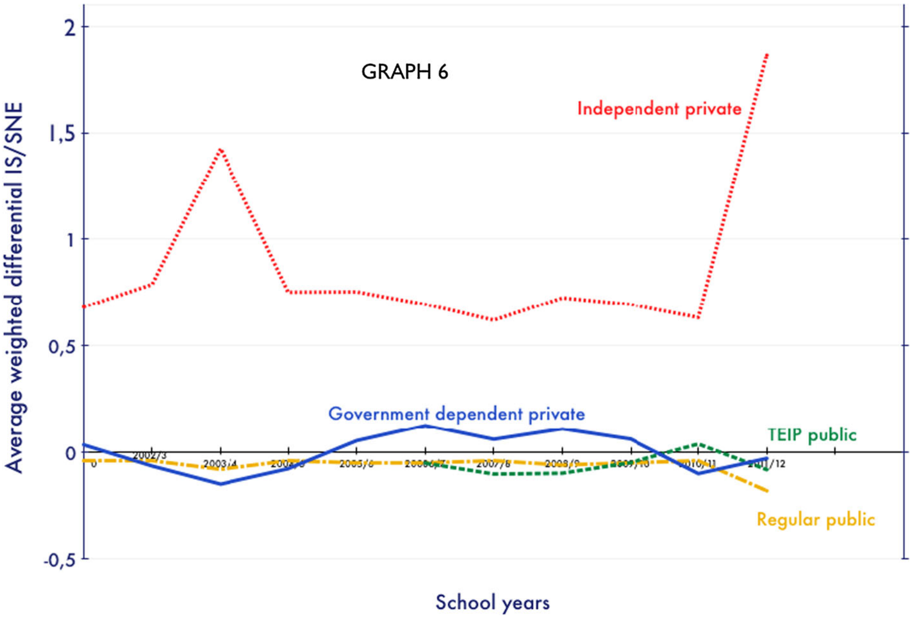

Fig. 6 Weighted average of the differences by (the 20) classes of scores in national exams (2001/2–2011/12)

that this discrepancy is not uniformly distributed across grades: rather, it is higher where scores matter most in the competition for the scarce places available in public higher education. Furthermore, the analysis of 11 years and over 3.1 million pairs of scores in national exams/internal scores shows that (on average) the differences amount to as much as 1 score point (out of 20). To get a tangible notion of the impact that these differences can have on a student's access to higher education, it is best to look at a real example. Medicine is one of the (if not *the*) most wanted, prestigious, and consequently difficult to access courses in Portuguese public higher education (Fonseca and Encarnação 2012). In the current year (2012/13), the last student to access the Medicine course at the University of Porto had an application score of 18.35 points (out of 20). This placed him in position 504 in the access ranking. It needs to be said that only 245 places were available. The fact that the student in position 504 ended up gaining access is explained by the fact that, as students can apply to a maximum of six programme/institution pairs, students in better positions ended up enrolling in other courses (most likely, other Medicine courses closer to home). If we add and subtract half a score point (0.5 out of 20) to the application score of the last candidate to enter the course (18.35), we get 18.85 and 17.85. These scores correspond to positions 182 and 705, respectively; i.e., more than 300 places above and 200 places below the last candidate to gain access. If we take 1 score point (out of 20), we get 19.35 and 17.35, which correspond respectively to positions 33 and 806; i.e., almost 500 places above and 300 places below the last candidate to gain access. As this example illustrates, in a context of fierce competition for the scarce places available, this (apparently small) boost in student's scores can actually have a huge impact on their chances of accessing higher education, or at least their chosen study programme.

Thus, we argue that this research unveils what we might refer to as a micro-process through which the social hierarchy is maintained and construed. Indeed, access to higher education is generally associated with future success in the labour market and therefore with upwards social mobility (Ball 2003; Wilkinson and Pickett 2011). It is therefore particularly worrying that some students, noticeably those from privileged backgrounds, who can afford private schooling, are getting (on average) unfair advantages when compared to those in public and government-dependent private schools. This understanding of the mechanisms through which some social groups are able to maintain their privileged status is particularly relevant in contexts where social mobility is low and social inequalities are high, as in the case of Portugal (Causa and Johansson 2010; Wilkinson and Pickett 2011). It certainly casts a shadow of doubt on the equity in access to higher education, one which cannot remain unaddressed.

In order to assess the extent of this phenomenon, first of all it is important to say that we are fortunate to have publicly available databases organised in such a way that permits carrying out this type of research. In our literature review we found a similar situation only in Sweden, as reported by Wikström and Wikström (2005). Personal contacts with researchers in other European countries provided no further information on the existence of similar databases. While educational inequalities are a central topic in educational research, this fact raises the issue of whether this research problem can be tackled elsewhere in these or in very similar terms. As such, discussion of possible solutions for this state of affairs can hardly be based on experiences and policies of other countries.

We can think of three ways of dealing with this problem: (1) to stop using internal scores as a factor determining access to higher education, (2) to make some kind of a posteriori correction to the scores attributed by schools, or (3) to resort to the luck of draw (Stone 2013). To be sure, none of these options is exempt from criticism. Yet, in the face of a system that has relevant flaws, it seems reasonable to consider other options, and ethically mandatory to start a discussion on how to end or minimize the unfair consequences of Portugal's current higher education access policies.

For one, it would be possible to make access to HE dependent only on the national exams scores and/or on exams carried out by the Universities themselves. In fact, this system is adopted in some countries, such as the Czech Republic, Slovenia, some study areas in France, Iceland, among others (OECD 2012). Nevertheless, this solution has the disadvantage of focusing students' assessment on just a few decisive moments, as this may favour students that simply deal better with the stress of sitting through exams.

Another possibility would be to introduce a posteriori corrections to internal scores, namely by assigning different weights based on the deviation of schools' scores relative to the average deviation. That is, the more a school would inflate its internal scores in relation to the average inflation (of all schools), the more its students' scores would be corrected towards the average, i.e., downwards. The opposite would also occur by increasing the scores obtained by students in schools that systematically give lower internal scores when compared to the average deviation. This, of course, while probably enhancing global fairness, would not guarantee greater fairness in any given individual case. Also, the fact that it would be an a posteriori, individual-blind correction might raise legitimate concerns about its righteousness. Even so, it is also important to keep in mind that, by not adjusting students' scores taking into account each schools' average inflation or deflation (relative to the global average differences), one is (consciously) ignoring that a student's future is dependent upon their school choice.

A third possibility would be to resort to the luck of draw provided certain minimum requirements were met by candidates (Stone 2013). This stance arises from considering that measurement instruments, ranking and selection processes are far less precise than usually considered. Therefore, according to this view, it would be necessary to recognise the limits of reason, avoid the hyperrationality embedded in such instruments and processes, and accept that luck may actually be the fairer approach to this issue. Needless to say, this perspective may raise immediate objections as it seems to go against merit as the main criterion for deciding access to higher education (Mountford-Zimdars and Sabbagh 2013). But does it really? A deep discussion of this challenging, radical view may be found in Stone (2013).

Finally, although this has not been directly addressed in this study, it should be noted that there may be other sources of grade inflation in these different types of schools. First, grade inflation may be higher in study subjects where no national exams are undertaken, such as Physical Education. In the subjects in which no national exams are undertaken, it is virtually impossible to make large comparisons between schools. Nevertheless, it seems reasonable to assume that grade inflation might be even higher where no comparative scrutiny can be effectively carried out. Second, and although this type of behaviour cannot really be proven, it is possible that teachers may help their students in varying degrees while monitoring exams, as national exams usually take place at the students' respective school, and are usually monitored by teachers of that school. The teachers' more or less helpful behaviour may indeed be a function of their schools' vested interest in students' scores. And, in accordance with what has been argued previously, market pressures may drive up the incentives for independent private schools to inflate grades.

In conclusion, this research raises serious and very tangible doubts about fairness in access to higher education, namely by unveiling the fact that independent private, fee-paying schools systematically present higher grade inflation than the other types of schools. It is therefore mandatory that more studies, namely in other countries, find ways of delving into this matter, as it is imperative to start a debate over solutions that can address such an important issue in our societies.

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