Policies for decentralization, school autonomy and educational inequalities among the Italian regions. Empirical evidence from Pisa 2006

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Abstract: The aim of this work is to analyze the inequalities in educational performances among the Italian regions after the period of educational reforms started on the end of 90's. The policies for decentralization and school autonomy have produced a wide range of local implementations and the picture which emerges on examining the effects of those education policies in recent years is that of an extremely dynamic situation with a wide range of local declinations. In this paper, using data from OECD PISA 2006, we attempt to identify the dynamics that produce the differential in educational performance (both between individuals and between geographical areas) taking into account the effects produced by the students background, the school-level variables (aggregated background, school track, etc.) and the contextual factors, in relation with the new policy framework.

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Governance, school autonomy and the decentralization process

From the end of the 1970s until now, and especially during the 90s when the process was stepped up considerably, educational systems in diverse national contexts have been subjected to numerous more or less intensive changes. More specifically, the policies linked to school autonomy[3], though varying in form and declination, have played a fundamental role in the policy change process which has invested educational systems. As pointed out by various authors (Benadusi & Consoli, 2004; Benadusi, Giancola & Viteritti, 2008), such dynamics are generally produced by factors which are exogenous (public administration reforms and the necessity of integrating the diverse national systems) to the school system on the one hand, and by endogenous factors (the adoption of a new concept of school and learning by the many actors involved) on the other. If we observe the school as a sub-social system, this can be linked to the changing issues and problems which the surrounding environment (the students, their families, the territory, etc.) presents to educational systems. In short, in the radical mutation in the issues (regarding the needs and requests of the social actors on the one hand, and changes in policy and institutional setups on the other) which revolve around the educational system, a detailed and diffuse process of morphogenesis (in the sense attributed to this term by Margaret Archer) within the educational systems themselves is under way. Both the educational systems themselves and the actors/operators involved in them have been caught up between two different forces for change. It is believed that school autonomy policies (and scholastic and territorial governance) grant schools a wider range of instruments for responding to the complex issues which they have to deal with daily, as well as the freedom to experiment with and apply new and innovative teaching methodologies and strategies: the various policies for autonomy often refer also to autonomy in experimentation and pedagogical research. The various national educational

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[3] For a detailed description and analysis of the policies for school autonomy, please see the issue of the Italian Journal of Sociology solely dedicated to "Reforming Education in Italy" (Vol. 3, No. 3, 2009), and especially to the introduction by R. Serpieri and the contributions made by P. Landri and by A. Vitteritti.

systems have reacted to these policies in very different ways, but we can hypothesize here that there are two macro vectors of change which can summarize the situation: 1) the first can be linked to international institutional pressure (from the EU, for example), and the ever greater comparison of performance and educational policies stimulated by international organisms such as the OECD; 2) a second vector of change can be linked to the decentralization process, in which diverse educational structures have gone from being a government area to one of governance and localization/territorialization. The educational systems have therefore found themselves caught up between the drive towards various forms of governance on the one hand, and forces which tend towards the "isomorfization" of individual educational and training institutions (Giancola, 2009; 2010) on the other. Such processes of change have impacted above all on the dynamics of decentralization, both in general and with regard to systems (as in the case of various national policies for autonomy) and on the consequent production of micro-policies at local level. In fact, in the process of negotiating and implementing school autonomy locally, the framework of change is extremely varied - think only of the diverse forms and degrees of autonomy in the different Italian regions - and thus difficult to evaluate. In this sense, as for example in the case of Italy, the impact on the organizational aspect in individual schools, the aperture to the territories and the schools' consequent loss of self-referentiality has been particularly heavy.

The picture which emerges on examining the changes which have invested education policies in recent years is therefore that of an extremely dynamic situation (at least as far as the dimensions of scholastic organization, decentralization, etc., are concerned) with a wide range of declinations, both among the various national contexts (Bottani, 2002; Benadusi & Consoli, 2004) and within each individual one (Benadusi, Giancola & Viteritti, 2008). These aspects are flanked by others which highlight how policies for governance and scholastic autonomy can produce unexpected results in the boudonian sense, within the spheres of equity, differentials of performance and the implementation capacity of the various levels of institutional actors involved (Bottani, 2002; Benadusi & Consoli, 2004; Benadusi, Giancola &

Viteritti, 2008; Giancola, 2009). From the viewpoint of equity, the policies for autonomy risk producing unexpected effects of considerable dimensions; the ability of a school to analyze the social problems peculiar its territory and relative diverse social actors (students and families) and on the basis of this analysis adopt specific strategies of intervention, cannot be taken for granted. Thus, autonomy may or may not produce change (maintaining the above-mentioned inequality dynamics) or, given the "*quasi-market*" situation (Benadusi & Consoli, 2004; Benadusi, Giancola & Viteritti, 2008) among the various schools, produce effects of social segregation, thereby reinforcing the social mechanisms which generate inequalities.

How inequalities both within and among the Italian regions are created and reproduced

In the comparisons made between the national systems in Europe in the last few years, Italy has always occupied the lower rankings not only as far as the students' average performance is concerned, but also with reference to the minimum level indicator as a large number of students demonstrate learning difficulties in the basic competencies. Alongside these first indications, on a more in-depth analysis the Italian system appears to be not only insufficiently effective, but also insufficiently egalitarian.

In terms of equity, an evaluation of the Italian system must refer to a complex system of indicators which are able to take into consideration both the wide array of social functions attributed to scholastic institutions and the varying ideas of justice linked to educational processes.

A theoretical and empirical framework which focuses not only on the average levels (i.e. the mere aggregate performance) but also on the distribution between individuals and groups (see Benadusi, 2001; Benadusi, Bottani, 2006; Giancola, 2009) therefore becomes necessary. An internal analysis of our country which we show here thus highlights a marked territorial difference between north and south: the north obtains results similar to the countries at the top of the international rankings, while in the south almost a

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third of fifteen-year-olds fails either to reach or to go beyond the minimum level of competence in science and mathematics. Furthermore, also as far as the indicators of inter-category inequality are concerned, data shows that even when the performances of Italian students appear to be more satisfactory in an international comparison, as in the case of the impact of social origin on the score achieved in learning tests they are accompanied by unsatisfactory performances in terms of effectiveness (measured through both average and excellent scores). Lastly, in Italy considerable differences can be observed also between the types of studies, with *Liceo* obtaining higher levels of competency than other schools (with technical or profession-based curricula) nationwide. Also in this case, however, a more critical situation as far as effectiveness is concerned can be observed in the south, with *Liceo* students there obtaining much poorer results than those in the north, results which barely reach the level of the performances achieved by technical school pupils in the northwest, and those of professional institute students in the northeast. This phenomenon is present above all in some southern regions, where greater homogeneity in the students' social origin[4] is correlated to their poor average performances.

The complexity of the research program has allowed us to investigate the role and impact of the social, educational and organizational variables in explaining the variations between the students and schools within the territorial realities of north and south, as well as an overview of the effectiveness and equity of the scholastic system. The analyses were carried out using linear and non-linear multiple regression methods, as well as multilevel regression methods (which allowed us to examine the individual variables, together with those relative to single institutes and to territory).

Before looking at an analysis of the factors determining performance in science, we would like to present some data relative to our principal indicators in order to give an overall picture of the performances of fifteen-year-old high school students for whom an autonomous sample is available at national level, in the territorial macro-areas and in the various regions.

The regions present a high level of differentiation, not only as far as

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[4] Social origin is measured using a synthetic index of the socio-economic-cultural level of the student's family (ESCS), which can be found in the database supplied by the OECD.

learning science is concerned, but also with regard to the two other forms of literacy examined in the Pisa survey – maths and reading. Furthermore, considerable differences can be found with reference to other important elements – social, economic and linked to the educational pathway – and these are reflected by the diverse results achieved in different types of school, both in terms of regularity and the acquisition of skills.

Let us therefore look at some distributions within the regional area in greater detail. Firstly, in Table 1, which illustrates the average performances of students in the regional areas, we can observe a homogeneity of results in maths, science and reading tests divided into North-Centre-South, with an important gap between the first and last of these, and the second occupying the median ranking. In particular, the northern regions of Trento, Bolzano, Friuli Venezia Giulia and Veneto achieve high scores in all three tests; they are followed by Lombardia, Piemonte, Emilia Romagna and Liguria with relatively low scores. All the southern regions (both island and mainland) present low scores in all three tests.

From Table 1, we can extract the value relative to the standard deviation of the scores in every region, and can observe that a northern region (Emilia Romagna) and a southern region (Sicily) present minor inter-individual equality of scores in science, although the former, as we have already seen, is associated with good performances (average regional score in science 510), and the latter with poor performances (average regional score in science 440, the lowest score of all). From this point of view, the most egalitarian territories are Trento and Bolzano (with the best performances), but also Puglia and Campania (with poor performances: both come below the conventional average fixed at 500). Moving on to the three macro-areas, we can note a difference: the greatest dispersion of results in science is to be found in the north, while for maths and reading this is true of the south. It may be of interest to examine the diversities of performance in science relative to the type of school.

Table 1. Average performances and equality between individuals (Standard Deviation of scores) of regions and macro areas (Pisa 2006)

	SCIENCE		MATH		READING	
	Average scores	Standard Dev.	Average scores	Standard Dev.	Average scores	Standard Dev.
Trento	549	73	535	77	539	74
Bolzano	548	78	536	77	534	79
Friuli V.G.	534	81	513	81	519	85
Veneto	533	81	520	82	521	85
Lombardia	513	84	499	80	505	91
Emilia R.	510	91	494	93	496	96
Piemonte	510	86	492	81	507	91
Liguria	496	89	478	81	491	96
Sardegna	453	88	432	97	443	112
Basilicata	452	82	444	80	447	99
Puglia	*448*	*79*	*437*	*78*	*442*	*98*
Campania	*444*	*79*	*437*	*88*	*440*	*90*
Sicilia	*440*	*90*	*426*	*84*	*429*	*101*
ITALY	479	91	465	91	473	103
NORTH	517	86	502	84	508	91
CENTRE	489	83	469	80	484	99
SOUTH	444	83	432	88	438	103

Table 2. Average performances by Region and school tracks (Science)

Regions	Liceo	Tecnico	Professionale
Bolzano	574	547	494
Veneto	573	534	470
Friuli Venezia Giulia	566	543	470
Trento	564	548	470
Emilia Romagna	559	513	422
Lombardia	558	505	453
Piemonte	556	495	429
Liguria	528	488	434
Basilicata	500	447	388
Sardegna	499	426	372
Puglia	495	443	391
Sicilia	485	421	364
Campania	474	437	385
Italy	518	475	414
North	559	513	448
Centre	530	482	422
South	481	436	381

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Thus, in Table 2, we can see the average scores by region and type of school. Also in this case, we can note inequalities - both among the types of studies, given that *Liceo* students achieve higher averages in all the regions, and among the regions themselves, as the gap between *Liceo* students and the others varies within the regions, with greater differences in the south than in the north.

Moving on to an explanatory analysis, we present a set of multiple linear regression models aimed at pinpointing the dynamics of the (re)production of differences in performance. In Table 3, we used all the variables simultaneously in order to estimate a kind of "national model" in the first model, while in the second we included territorial control.

In the first linear regression model, we analyzed the factors determining competency in science. The analysis shows that in model 1, the average socio-economic background in the school carries the most weight among all the variables taken into consideration. This is accompanied by a consistent effect produced according to the type of school attended (the pathway effect). On the other hand, individual background has a decidedly limited effect[5]. The gender variable (male vs. female) seems to have a negative, though equally modest, impact. The impact of the standard deviation of Escs in the individual school is even more modest. Further attention should be paid to the "irregular" variable – the one relative to students who find themselves a year behind compared with the standard school career – whose impact is intermediate between those of the individual variables (weak) and those of the collective or institutional ones (strong). In model 2, we checked out what emerged previously by inserting the geographical areas as *dummy variables*. Geographical control increases the R^2 value, and produces interesting modifications in the structure explaining the students' differences in performance in the tests. In fact, the pathway effect becomes more evident (see the beta value of *Liceo*), while the average Escs sees its explanatory potential virtually halved. Furthermore, as could be expected, the *dummy* "North" (compared with the category of reference which

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[5] It must be highlighted that using the "individual Escs" as the only regressor gives a slightly higher *beta* value, which is partly counterbalanced by the effect of the "School average Escs" when it is inserted in the model.

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in this model is "South") has an extremely high beta value which is almost equal to that of "*Liceo*".

Given the strong impact of the control variables, we replicated the models subdividing the national sample into three sub-samples relative to the three macro-areas (North, Centre and South) presented in Table 3.

The three models relative to the diverse macro-areas present a trend which is similar in general terms, but with an interesting difference. In all three, the type of school attended (see the standardized beta values for the "*Liceo*" variable) offers the best explanation for individual differences in performance in science tests. The most relevant factor is, however, that such an impact is less strong in the Southern macro-area, while the effect of the average Escs variable is decidedly stronger than in the North and the Centre. In other words, the impact produced by the type of school is more marked in the South than in the North, while that relative to the "social composition" of the school is weaker in the North, of intermediate level in the Centre and stronger in the South (this effect will be confirmed and clarified in a certain sense in the paragraph dedicated to multilevel analysis as we go on.

The question which we now intend to answer is whether a more subdivided analysis using oversampling confirms the existence of a national territory divided into three (North, Centre, Insular and Mainland South) which in the absence of the Centre should now be divided in two, thus creating a new reality. To this end, we carried out four cluster analyses, which are projected here onto two graphs. The first describes the intersection between average performance in science (effectiveness) and dispersion of score (inter-individual inequality), while the second presents the average performance and its intersection with a new variable which summarizes the trade-off between the pathway effect and the impact of average background, which has already proved to be an interesting element of differentiation between North and Insular and Mainland South.

Table 3. Determinants of performance in Science

|	Model 1 Italy	Model 2 Italy with geographic control variables	Model for the South Area	Model for the Central Area	Model for the North Area
R^2	*0,35*	*0,45*	*0,37*	*0,35*	*0,39*
Individual Escs	0,05	0,04	0,03	0,07	0,05
Gender (Female)	-0,08	-0,09	-0,16	-0,06	-0,22
Irregular school career	-0,13	-0,16	-0,10	-0,10	-0,09
School level Escs	0,34	0,16	0,28	0,10	0,06
Standard Dev. of School level Escs	0,02	0,01	0,05	0,05	0,00
"Liceo" (school track dummy variable 1)	0,18	0,34	0,26	0,46	0,44
"Tecnico" (school track dummy variable 2)	0,13	0,17	0,14	0,23	0,22
Enjoyment of science	0,11	0,12	0,11	0,14	0,14
Interest in science	0,04	0,06	0,06	0,10	0,05
Number of hours for Science in the school curriculum	0,17	0,13	0,16	0,03	0,16
Extra-curricular activities on the sciences	-0,01	0,02	0,01	-0,02	0,04
North (geographic control dummy)		0,37			
Center (geographic control dummy)		0,15			

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From a general analysis, three groups of regions/provinces emerge: a first group, which can be denominated North-west, includes Emilia Romagna, Liguria, Lombardia, Piemonte; a second, which we shall call Triveneto or North-east, includes Bolzano, Friuli Venezia Giulia, Trento, Veneto, while a third – Basilicata, Campania, Puglia, Sardinia and Sicily – coincides with the Insular and Mainland South macro-area. As we shall see, however, in some of the analyses the third cluster appears less compact than the other two.

The projection presented in graph number 1 clearly shows how the principal discrimination factor between the North and Insular and Mainland South is represented by scores. In practical terms, while clusters 1 and 2, though different, (the North-east performs better) are fairly close together, cluster 3

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appears compact and decidedly distant. The dislocation becomes more complex when the standard deviation of score is taken into consideration. Here we can perceive more clearly the gap between the two northern areas (the East being clearly more egalitarian than the West), while cluster 3 tends to group into a more egalitarian South and Island regions which are much less so. Consequently, in this case the Insular and Mainland South occupies an intermediate position between the two northern regions, with the continental regions closer to the North-east, and the insular regions in the proximity of the North-west.

Graph 1. Trade-off between performance and inequality between individuals (Standard deviation of the regional score in science)
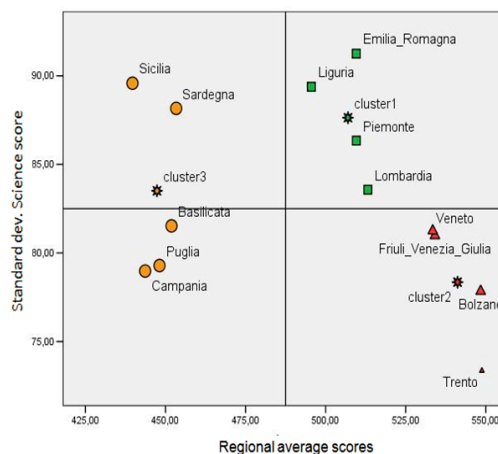

Graph number 2 shows the same tendency of the cluster to "group", though a little less clearly: in the relationship between the *average Escs effect* and the *pathway effect* the former clearly prevails in the continental regions, while in the islands the latter is slightly stronger. The North is once again characterized by its two clusters, which, with the exception of Veneto, register a more or less marked prevalence of the pathway effect.

The territorial overview which emerges from our cluster analysis appears to

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be misaligned with both the articulation of the five OECD-Pisa macro-areas and our articulation of the three macro-areas which proposed to correct it. In fact, in the absence of the Centre, we can observe a structure formed by three elements (North-east, North-west, Insular and Mainland South), not two, and this sometimes tends to increase to four with a gap forming between the Islands and the Mainland South.

Graph 2. Relationship between Regional Average scores and the "average Escs effect vs. pathway effect"
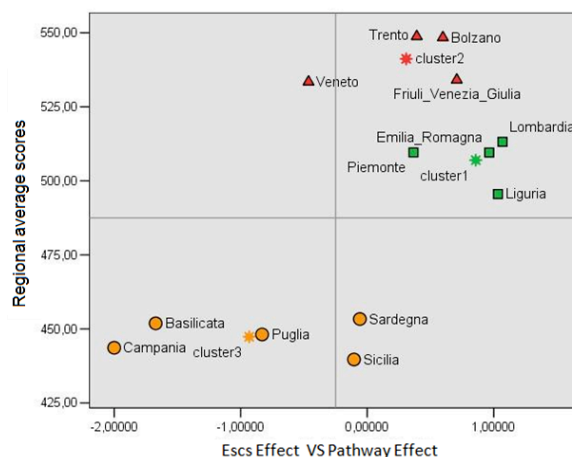
Multilevel sources of educational inequalities

In order to fully understand the outcome of the processes surrounding scholastic performance, we adopted so-called multilevel methods which allowed us to observe the diverse factors attributable to different levels of influence simultaneously. The Pisa data relative to Italy gave us three levels of analysis: the individual students who were tested, the individual schools which they attended, and the individual territories (regions or autonomous provinces) where the schools were located. The first datum on the distribution of

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differences within the various levels, which was calculated excluding every type of intervening variable (null model), indicates that the greatest differentiation at national level is not to be found among individuals (48%), but at a higher level (52%). Further disaggregating the 52% variation, 37% can be adduced to the differences existing between one school and another and 15% to those relative to the territorial areas. In our country, therefore, environmental factors produce a strong discriminatory impact, thus making a multilevel analysis particularly interesting[6].

Within the three levels we have just mentioned, a source of inequality can be traced.

As we have already shown in the analyses illustrated in the previous paragraph, the factors relevant to social origin, motivation and curricula are all discriminatory at individual level. The direct link between educational performance and socio-economic background, though very strong, is particularly rich in ambiguities in this phase of the educational pathway. Although the analyses highlight a directly-proportional link between the socio-cultural level of the family and the learning level of the student, it is the indirect influence of background, which invests the choice of the type of school in the first place and afterwards the choice of the specific school, which appears to produce the most relevant effect as far as our analysis is concerned.

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[6] The analysis illustrated here is an application of the multilevel random interception model. To speak of data structured hierarchically at diverse levels means that in our case we speak of data relative to first-level units (students) grouped within second-level (schools) and third–level (regions) macro-units. This implies the possibility of hypothesizing that these last macro-units are sufficiently independent, and that on the contrary, there is a closer association between schools and students, in that sharing the same context renders the students belonging to the same region and the same school more similar than one might expect. The strength of this dependency is measured by the intra-class correlation coefficient which can be estimated using the simplest linear hierarchical model, which coincides with the random effect analysis of variance model (ANOVA). In all the models presented, the starting point is the null model, which follows the introduction of the variables of the different levels. In each of the partial models, the significance of the coefficients of the variables introduced, the modification of those variables already present in the previous models and the reduction produced on the variance at different levels are taken into consideration. For further information, see Note 1.

At scholastic institution level, therefore, (level 2), the major finding refers to the structuring of educational pathways (*streaming*) and their coinciding with what we might call the social prestige linked to each school (expressed through the social status of its students' families). However, other elements relative to the type of organization and the quality of resources available to the school (such as the number of teachers per student, the quality of its structures, the pressure exerted by students' families on school life, and so on) appear significant. By considering these second-level variables together with the individual ones, we can investigate not only the students' performances but also those of the schools.

Lastly, at territorial level (level 3), we find two distinct types of analysis: the first is aimed at understanding how the individual and school level variables react when we include the third level too, taking into consideration spending on education; the second focuses on the impact of individual and school level variables within the diverse territorial areas for which an autonomous sample is available. In this second case, the analysis concerned only two levels, but was reproduced for each of the thirteen territorial areas. In both cases, the differences observed between the learning achievements among students in the north and those in the south were extremely interesting.

How are these sources of inequality articulated, therefore, in the northern and southern regions? Once the distribution of the variance between individual and non-individual level has been pinpointed for both the national and territorial samples, it becomes possible to formulate the following questions regarding the diverse levels:

- How relevant are family background and social origin in explaining the different scores achieved by students? Is such an impact different in the diverse territorial areas?
- How relevant are previous scholastic career, individual motivation regarding the subject matter and time spent on it in explaining the students' diverse scores? Does this impact vary according to territorial area?
- How relevant are the type of school and its average social level in explaining the different average scores achieved by schools? Is such an impact different in the diverse territorial areas?

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• How relevant is the monetary investment in education in the diverse regions in explaining the differences in the average scores achieved in the individual territories?

Effectiveness and Equity in Schools in the North and South

The first issue to be examined is therefore the degree of homogeneity within the individual regions. As we have just mentioned, if we focus on the national context and evaluate the quota of differences attributable to students and that attributable to schools, we can observe very marked differences between the various scholastic institutes (the between schools variance is 52%). If we restrict the field to territorial realities, the panorama becomes much more complex, highlighting a distinct fracture between the northern and the southern regions.

In graph number 3, we see the distribution of the regions by average score in science and the between schools variance.

As far as performance in science is concerned, we can see a twofold distribution between North and South: the northern regions register an average score superior to that at national level, while the southern and insular regions register a considerably inferior one.

If we then consider the degree of homogeneity within the regions, we find a very varied situation. In fact, in the south we can observe a distinction between Puglia and Campania, which present a relatively low between schools variance, thus demonstrating that low levels of performance are common to all the schools in the region, and Sicily and Sardinia, where, on the other hand, low levels of average performance are associated with a higher degree of internal heterogeneity among the schools. The northern regions are distributed in three groups: Trento and Bolzano, which are characterized by excellent performances and a low level of inequality among schools, Veneto and Friuli, which are characterized by excellent performances but also by a high level of internal heterogeneity, and the other northern regions, which are characterized by good performances and a high level of internal variation.

The diverse regions therefore present different combinations of scholastic effectiveness and equity. Let us now look at the extent of the differences in

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score given by the principal variables considered in the regional analyses. Having observed this impact, we shall then focus on the variables which better explain the differences among individuals and among schools, i.e. those which bring about a greater reduction in the inter-scholastic and intra-regional variance, thus allowing us to explain the existing differences.

Graph 3. Distribution of regions for average scores in science and variance between schools
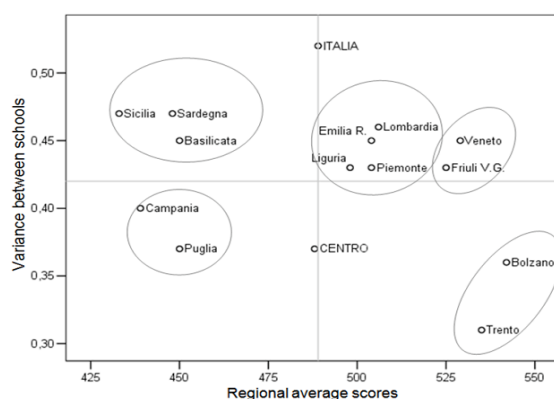
Comparing categories: Who does better in Science?

Before focusing on the factors which best explain inequalities in learning science, let us take a detailed look at the advantage associated with each variable.

Boys scores are higher than those of girls. The regions where the greatest score differences between boys and girls can be found are Campania (where the value is by far the highest: -23.1%), Bolzano, Liguria and Basilicata (regions where females achieve scores 15 points lower than those of males). The regions with the least marked differences are Puglia, Piemonte, Veneto, Trento and Lombardia (where the value registered is insignificant). With the introduction of motivational, curricular and experiential variables together with those

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relative to the type of school, the impact of the gender variable is partly reduced in all regions.

The higher the individual socio-cultural level the higher the score. The regions where the gaps are most evident are Liguria, Sicily, Piemonte, Emilia Romagna and Friuli Venezia Giulia (9 points higher for every level of Escs). These are followed by Basilicata, Bolzano, Lombardia and Veneto (6-7 points), and lastly Sardinia, Puglia and Campania (5 points or less). The value registered by the Province of Trento is insignificant. As with other factors, the strength of this variable varies from region to region. In some, like Sardinia, Campania and Puglia for example, it becomes insignificant after the introduction of the motivational, curricular and experiential variables, while in others it is considerably reduced.

The more students are involved in science-linked scholastic and extra-scholastic activities, and the greater interest and enthusiasm they profess for the subject, the higher the score. Of the four individual variables taken into consideration in the regional models, our analyses indicate that, more or less uniformly in all the territories, those which produce the biggest gaps in scientific competency are both the number of hours allocated to science studies in the school curriculum (approximately 11 points), and the students' enthusiasm for science (approximately 12 points).

The scores achieved by Liceo pupils, and to a lesser degree by technical school students, are higher than those of students attending vocational schools. The regions in which those attending *Liceos* achieve relatively high scores are Sardinia, Emilia Romagna, Piemonte, Liguria and Lombardia (100 points or more). The smallest gap can be found in Bolzano (59 points). In the other regions, the values range from 80 to 100 points. A partially similar ranking can be observed among the students attending technical schools: the regions which register the biggest differences are Emilia Romagna (70) and Trento (56); those with the smallest are Bolzano (36), Sardinia (36), Campania (37) and Puglia (37). The values relative to type of school decrease with the introduction of the average Escs, which, as we shall see later, plays an important role in determining inequalities among schools.

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The higher the average social status of the school, the higher the score. The average Escs, in fact, determines a considerable difference in performance in science. This is especially true in Basilicata (+72 points) and Campania (+60), the only regions which register a value superior to the Italian national average. Elevated values are also registered in Trento, Sicily and Puglia (between 30 and 50 points more). In some areas, however – Bolzano, Friuli, Liguria, Lombardia and Sardinia – they are insignificant.

A comparison among regions: what explains the inequalities? In terms of a general reduction in between schools variance, the results of the two-level model into which all the variables were introduced step by step demonstrate that both in the territorial contexts and at national level, the reduction in heterogeneity within the regions is mainly due to the two scholastic variables (type of school and average Escs).

However, one of the most important results from the point of view of our analysis is that in some regions, the internal differentiation depends almost totally on the type of school. This is particularly true for almost all the northern regions (Emilia Romagna, Piemonte, Friuli Venezia Giulia, Lombardia and Liguria), but also for two southern regions (Sicily and Sardinia). In other regions, however, the average social status of the school carries greater weight than the type of school. This is the case in the remaining southern regions (Puglia, Basilicata and Campania). We can hypothesize that in this latter case the students' socio-cultural background impacts on two obligatory steps in the transition to upper secondary school. The first step is that of the institutional *streaming* of pathways which induces the more advantaged to opt for *Liceo*. The second step is linked to a *self-selection* process on the part of students and their families, a process which is less formal but evidently equally diffuse, and leads them to choose a school on the basis of its "good name", which derives from the elevated social status of the families of those attending it. Lastly, in the remaining two autonomous provinces and the Veneto region, the variables have a rather limited explanatory capacity, thus pointing to both a lesser impact of social origin on educational achievements and the greater effectiveness of all types of school.

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The explanatory capacity of these two variables is confirmed by the three-level analysis conducted on the entire national sample. As far as variability at regional level is concerned, it allowed us to highlight the fact that greater investment in the school in terms of spending per student at regional level is the factor which is capable of reducing the degree of variability among the regions more than any other. However, it is important to note that, for the most part, also the average social status of the individual school can explain the differences among the regions.

In conclusion, the variability of scores in science, when not due to individual causes, can be mainly attributed to the regional expenditure per student, which explains the inequalities among the regions, to the secondary educational pathway, which explains the inequalities among schools, and to the average Escs, which explains the inequalities both among regions and among schools.

Conclusions

From the post WWII years until the present day, the educational system in Italy, as in many other countries in the OECD area, has been characterized by tendencies which have led it to be more inclusive and to reduce phenomena of social exclusion such as juvenile illiteracy to an extremely low level. Various studies (Pisati in Schizzerotto 2002; Fornari & Giancola, 2009) have shown that, as far as the inclusion capacity of various types of studies is concerned, the possession of first - and second-level high school diplomas (from junior and senior high schools) has become increasingly widespread. Such an inclusion is significant both in terms of achieving equity of gender (Fornari & Giancola, 2009) and progressive equity among social classes, i.e. in terms of growing equality of opportunity (Barone, Luijkx & Schizzerotto, 2010), at least at the lower educational levels (junior high school).

However, our analysis confirms the persistence of some tendencies which appeared to characterize the educational system in Italy (in the first and second years of upper secondary school) in all three editions of the Pisa survey. There

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are still marked differences in the various educational pathways. *Liceo* students achieve decidedly better performances than their peers who attend technical and especially vocational schools. This fact obliges us to focus once again on the social processes (often linked to factors other than meritocracy) which impact on the choice of study pathway. Students of low social extraction and their families tend to opt for a vocational or technical school rather than a *Liceo* after achieving a junior high school diploma, also notwithstanding the competencies they possess, i.e. for reasons linked to their expectancies, to calculations of convenience, sometimes also to their *habitus* (Giancola, 2009; 2010). However, the pathway effect, either associated with or added to the average Escs effect (aggregated background in schools), produces such an impact that young people from a disadvantaged family background, who mainly attend technical or vocational schools, acquire an average level of competency which is inferior to that of young people with an elevated family status, who mainly attend *Liceo*. We can therefore understand how the gap in terms of competency, though limited, increases throughout upper secondary education, thus adding to inequalities (elsewhere denominated "systematic bias"; see Giancola, 2009).

   A profound gap continues to exist also at geographical level. The northern regions, on the whole, achieve decidedly better performances, which place them in a ranking close to some of the best performing countries in the Pisa tests. The southern regions, on the other hand, register much less satisfactory performances. Furthermore, by comparing the Pisa tests from 2000, 2003 and 2006, we can observe how this tendency has remained unchanged.

   The set of analyses presented here show us to what extent the test scores depend on individual socio-cultural level (family background) and just how strong the correlation between average social status in schools and average performance (aggregated background) is. These two items of empirical evidence clearly show that the upper secondary educational system produces deep-rooted iniquities. Furthermore, we must not forget the fact that the average social status of the individual schools (which in turn reflects the average social status in the various regions), explains for the most part the differences among the regions. Lastly, our analysis of territorial divergence

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shows to what extent this mainly depends on contextual factors.

The contribution offered by policies to the solution of these issues is therefore rather contradictory and problematic. In fact, the policies for decentralization, autonomy and territorialization generally appear to have produced non-linear effects which were not easy to foresee from the point of view of equity in educational systems in general, and the Italian system in particular. As a matter of fact, a comparison of the Pisa data with the variations observed among institutes should alert both analysts and policy makers to the dangers of showing too much enthusiasm just for greater autonomy for schools and their opening to the territory. Although this might be fruitful in terms of social capital and of "alliance" between the school and families, it could at the same time produce perverse effects in terms of segregation and the excessive homogeneity of the social and "academic" composition of the student population (Benadusi & Consoli, 2004).

A continuing lack of attention and focus on themes of equity, coupled with the inability to perceive rhetoric and "trends" in the formulation and implementation of educational policies at various decision-making and executive levels in the educational/training system as a problem, may have given the impression that "despite reformatory dynamism, the training context still presents some highly viscous structural elements – those relative to the social inequalities which influence choice of school, together with the lasting and widespread irregularity of scholastic careers (Buzzi, Cavalli, & de Lillo, 2002), for example. It is therefore within this context that the school finds itself faced with a task which it is often unable to complete: it is no longer, or rather, not only a case of providing knowledge and competency, but often one of filling gaps and compensating for cultural backwardness and of breaking into circles of social relations which are often both closed and homogeneous in their social composition. These are often the very aspects (other than the undoubted weight of inertia of family status) which impact on and characterize the students' scholastic careers (Giancola, 2009; 2010).

Despite the prevailing regime of scholastic autonomy (which is however more and more restricted by lack of funding and allocation of financial resources), the individual schools have very limited possibilities for taking

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effective action at macro-levels such as these. We would therefore welcome set of national policies aimed at filling the cultural gaps which traditionally cause stratification, rather than delegating directly to local levels (individual schools and/or Regions), thus producing greater heterogeneity in interventions which could result in a further increase in inequalities among the territories.

The present article takes up from the analyses presented in the convention dedicated to "The regionalization of educational and training systems" in February 2010, which was promoted by the Campania Region and the University of Naples "Federico II", and included a paper entitled "So near, so far. The issue of school equity in the Regions of Italy". Some sections of this text are taken up by Fornari and Giancola 2010. The full version of the empirical analyses used in this contribution can be found in the working paper entitled "The issue of school" (Benadusi, Fornari & Giancola, 2010) which was developed in the course of research activities on the school by the G. Agnelli Foundation. This study was a joint effort by both authors, though paragraphs *Governance, school autonomy and the decentralization process - How inequalities both within and among the Italian regions are created and reproduced* are the work of Orazio Giancola, paragraph *Multilevel sources of educational inequalities* is by Rita Fornari and they worked together to produce the *Conclusions.*

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