6

Policy Implications of School Management and Practices

In the wake of the recent global economic crisis, countries need to structure and manage school systems efficiently to maximise limited resources. This chapter considers how policies related to the governance of school systems and the learning environment in individual schools are associated with performance in PISA and equity at the country/economy and school levels.

The impact of the recent economic crisis on education budgets has only just begun to be observed; but it is evident that, in the context of the crisis, countries need to structure and manage school systems efficiently to maximise limited resources. However, as this volume shows, when it comes to education, money isn't everything. Performance in mathematics, reading and science is less related to a country's/economy's income or expenditure on education per student than to how those educational resources are allocated, and to the policies, practices and learning environments that determine the conditions in which students can work to achieve their full potential.

PISA conducts extensive, rigorous and internationally comparable assessments to measure the knowledge and skills of 15-year-old students. The purpose of the assessments is to inform policy makers and educators on the degree to which their students are prepared for life. Because PISA reports on the achievements of many countries and economies against a common set of benchmarks, it stimulates discussion within participating countries and economies about their education policies, with citizens recognising that their country's/economy's performance in education must be better-than-average if their children want better jobs and better lives. PISA informs this discussion by collecting reliable data on students' ability to apply high levels of knowledge and highly complex thinking to real-world problems. The PISA survey also gathers a wide range of background data about the students.

This volume makes the link between these two bodies of data, with the aim of associating patterns of students performance with a wide variety of background data, such as how much teachers are paid, the degree to which decisions are devolved from higher authorities to the school faculty, the nature of the assessments that students must take, how educational resources are allocated across schools, and whether the school climate is conducive to learning, to cite a few. In this way, while the causal nature of such relationships cannot be established, an extensive network of correlations can be drawn between certain dimensions of student performance and a large range of factors that could conceivably affect student performance. The intent of this volume is not to specify a formula for success; this volume does not contain policy prescriptions. Rather, the objective is to provide a resource for decision making. Education is highly value-laden. School systems tend to reflect the values and preferences of parents, students, administrators, politicians and/or many others. Yet such values and preferences evolve over time and education systems must change to accommodate them. Decision makers in domain of education can benefit from benchmarking research, learning about the range of factors that is related to success, taking inspiration from the success of others, and then adapting policies and practices to the local context while adding unique elements that make their own school system one of a kind.

ENSURE THAT THE LEARNING ENVIRONMENT IS CONDUCIVE TO LEARNING FOR ALL...

PISA shows that students tend to perform better in schools that provide an environment conducive to learning; it also shows that socio-economically disadvantaged students are less likely to be in orderly classrooms than advantaged students. However, even after accounting for the socio-economic status of schools and students, schools with less incidence of student truancy or better disciplinary climate tend to perform better.

In other words, students perform better in schools with a better school climate, partly because such schools tend to have more students from advantaged backgrounds who generally perform well, partly because this favourable socio-economic characteristic of students reinforces a climate conducive to learning, and partly for reasons unrelated to socio-economic factors. To the extent that improved disciplinary climate can be considered a pre-condition for improved student performance, these inter-relationships highlight how important it is to attract the most talented teachers into the most challenging classrooms, and to ensure that children from all socio-economic backgrounds are learning in a positive disciplinary climate.

Assessments and information systems, already in place in most countries ad economies, can be used to identify individual schools that need special assistance. Poland (Box IV.2.1), Mexico (Box II.2.4) and Colombia (Box IV.4.3), for example, have improved the information infrastructure of their education systems so that they can better identify and support struggling schools.

...AND OFFER SUPPORT TO ATTRACT AND RETAIN QUALIFIED TEACHERS.

It is encouraging, though, that learning environments have generally improved between 2003 and 2012, even if there are still schools with poor learning environments in all countries and economies. What kinds of interventions are most effective for these schools? PISA results show that, when comparing two schools, public or private, of the same size, in the same kind of location, and whose students share similar socio-economic status, disciplinary climate tends to be better in the school that does not suffer from a shortage of qualified teachers. Teacher shortage and disciplinary climate are inter-related. The nature of that relationship cannot be discerned from these data; for example, teachers may avoid

schools with more disciplinary problems, or a shortage of qualified teachers can adversely affect disciplinary climate. Whatever the case, public policy needs to break this vicious cycle. The fact that these inter-relationships are far weaker in some countries and economies than in others shows that this can be done.

The quality of a school cannot exceed the quality of its teachers and principals. Governments, like corporations, should know what is required to build an effective workforce: a pool of talented people from which to recruit new employees; a fair and rigorous recruitment process; initial and continuing training; adequate compensation; rewards for the best performers, support for those who need improvement, and ways of encouraging those who cannot or do not improve to leave the profession.

In building an effective teaching force, the true test always comes when these commitments are weighed against others. How do countries and economies pay teachers compared to the way they pay others with the same level of education? How are education credentials compared with other qualifications when people are being considered for jobs? Would most adults want their child to be a teacher? Does the media – and the public in general – show interest in schools and schooling? When it comes down to it, which matters more: a community's standing in the sports leagues or its standing in the student academic achievement league tables? Are parents more likely to encourage their children to study longer and harder? In effect, the answers to these questions show the extent to which a society values education.

Interestingly, countries that have improved their performance in PISA, like Estonia (Box I.5.1), Poland (Box IV.2.1), Brazil (Box I.2.4), Colombia (Box IV.4.3), Japan (Box III.3.1) and Israel (Box IV.1.4) for example, have established policies to improve the quality of their teaching staff by either adding to the requirements to earn a teaching license, providing incentives for high-achieving students to enter the profession, increasing salaries to make the profession more attractive and to retain more teachers, or by offering incentives for teachers to engage in in-service teacher-training programmes. While paying teachers well is only part of the equation, higher salaries can help school systems to attract the best candidates to the teaching profession. PISA results show that high-performing countries tend to pay more to teachers relative to their per capita GDP.

School systems also need to ensure that teachers are allocated to schools and students where they can make the most difference. Systems could re-examine teacher hiring/allocation systems to ensure that difficult schools get enough qualified teachers, develop incentive systems to attract qualified teachers in these difficult schools, and ensure that teachers in difficult schools participate in in-service training (results show that these teachers are less likely to participate in professional training).

SUPPORT SOCIO-ECONOMICALLY DISADVANTAGED SCHOOLS...

The analyses in this volume show that schools with more socio-economically disadvantaged students tend to have lower-quality resources than schools with more advantaged students. Fairness in resource allocation is not only important for equity in education, but it is also related to the performance of the education system as a whole. The results show that school systems with high student performance in mathematics tend to allocate resources more equitably between advantaged and disadvantaged schools. In these systems, there are smaller differences between higher-performing and lower-performing schools in principals' reports on teacher shortage, the adequacy of educational resources and physical infrastructure, and smaller differences in average mathematics learning time between schools with more advantaged and those with more disadvantaged students.

For example, Estonia, Finland, Germany, Korea and Slovenia all show higher-than-OECD average performance in mathematics. In these countries, principals in disadvantaged schools tended to report that their schools had adequate educational resources as much as, if not more than, principals in advantaged schools reported.

...BY USING APPROPRIATE APPROACHES, DEPENDING ON THE OVERALL LEVEL OF RESOURCES...

As might be expected, in systems where the overall level of educational resources is below the OECD average, there tends to be a greater gap in educational resources between advantaged and disadvantaged schools. Scarce resources tend to be more concentrated in advantaged schools, and disadvantaged schools tend to suffer from inadequacy or shortage of resources. The overall level of resources is also clearly linked to overall performance.

In contrast, among systems where the overall level of educational resources is above the OECD average, neither student performance nor equity in resource allocation is linked to the overall level of resources. In these cases, the challenge is to allocate resources efficiently and equitably.

...AND SUPPORT DISADVANTAGED STUDENTS AS WELL.

PISA shows that, in nearly all participating countries and economies, students who had attended pre-primary school tend to perform better at the age of 15 than students who had not attended, even after accounting for students' socio-economic status. PISA also shows how enrolment in pre-primary education changed over time. Fifteen-year-old students in 2012 were more likely than 15-year-olds in 2003 to have attended at least one year of pre-primary education. But the rate of increase in pre-primary enrolment is higher among advantaged students than disadvantaged students, which means that the socio-economic gap between students who had attended pre-primary education and those who had not has widened over time. Policies that ensure that disadvantaged students and families have access to high-quality pre-primary education and care can help reverse that trend. It is important to provide information and guidance for parents to increase enrolment in pre-primary education for all children, regardless of their socio-economic status. Governments should ensure that quality pre-primary education is available locally, especially when disadvantaged families are concentrated in certain geographic areas. Governments should also develop fair and efficient mechanisms for subsidising pre-primary education to ease the financial burden on families.

Israel (Box IV.1.4), Germany (Box II.3.2), Mexico (Box II.2.4), Turkey (Box I.2.5) and Brazil (Box I.2.4) have recently implemented targeted policies to improve the performance of low-achieving schools or students, or have distributed more resources to those regions and schools that need them most. Considering the importance of equity in resource allocation, the OECD has launched a new project[1] on this issue and more detailed information on how some high-performing countries allocate resources will be available as of 2015.

BALANCE PROFESSIONAL AUTONOMY WITH A COLLABORATIVE CULTURE AMONG SCHOOL STAFF.

In recent years, many school systems have been redefining school leadership roles to drive improvements in learning outcomes and to manage greater school autonomy and accountability. This comes at a time when increased decentralisation in many countries is being coupled with more school autonomy, more accountability for school and student results, better use of education theory and pedagogical processes, and broader responsibility for supporting schools' local communities, other schools and other public services. This marks a shift from Tayloristic management paradigms towards the kinds of paradigms that are more suited to managing professionals or "knowledge workers". In the former, one typically sees bureaucratic "command-and-control" systems that leave little discretion to the workers and supervisors on the factory floor or service-delivery level of the organisation. In the latter, the people responsible for actually making the product or delivering the services have much more control over the way resources are used, people are deployed, the work is organised and how the work gets done.

PISA results show that in higher-performing systems, schools have more autonomy, with incentives and the capacity to improve. In the school systems of Hong Kong-China, Japan, the Netherlands and Korea, for example, schools have more responsibility for establishing student disciplinary policies, student assessment policies, approving students for admission to the school, and choosing which textbooks are used and which courses are offered.

A stand-alone policy to grant schools greater autonomy, however, will not, in itself, result in better outcomes. Schools with more autonomy tend to perform better than schools with less autonomy when the school system, as a whole, uses such accountability arrangements as setting clear objectives of what students are expected to learn and sharing information about outcomes, and/or when principals and teachers work together to manage schools. Some countries, like Colombia (Box IV.4.3), Poland (Box IV.2.1) and Korea (Box I.4.1) have given schools and local authorities more autonomy and have recognised that autonomy works only in the context of collaboration and accountability. Others, like Portugal (Box III.4.1), have reshaped the organisation of schools to facilitate collaboration and economies of scale among individual schools by creating school clusters. These countries' approaches to autonomy suggest that it is the combination of various conditions, rather than a single policy in isolation, that is related to better outcomes.

RECOGNISE THAT THE QUALITY OF EDUCATION DOES NOT AUTOMATICALLY RESPOND TO MARKET MECHANISMS.

In contrast, some features, most notably the prevalence of private schools and competition for students, have no discernible relationship with student performance, at least at the system level. Socio-economically advantaged students, who tend to achieve higher scores, are also more likely to attend private schools and schools that compete for enrolment. Thus, after socio-economic status is accounted for, private schools do not perform better than public schools; and schools that compete with other schools for students do not perform better than schools that don't compete.

Although individual parents may derive an advantage for their child from the privileged socio-economic context – and attendant resources – of private schools, school systems as a whole do not seem to benefit from a greater prevalence of private schools or a higher degree of competition among schools.

In fact, school competition is a multi-faceted concept. Principals' perceptions of school competition is not necessary the same as that of the parents of students in their schools. More worryingly, in the countries and economies that administered the PISA parent questionnaire, disadvantaged parents are significantly more likely than advantaged parents to report that they considered "low expenses" and "financial aid" to be very important factors to consider when choosing a school. While parents from all backgrounds cite academic achievement as an important consideration when choosing a school for their children, advantaged parents are, on average, nine percentage points more likely than disadvantaged parents to cite this criterion as "very important". These differences suggest that disadvantaged parents may believe that their choice of schools for their child is limited, due to the cost of some schools. If children from disadvantaged backgrounds cannot attend high-performing schools because of financial constraints, then school systems that offer parents more choice of schools for their children will necessarily be less effective in improving the performance of all students.

PROVIDE OPPORTUNITIES FOR ALL STUDENTS...

PISA 2012 results, like those of earlier PISA assessments, show that, in general, school systems that cater to different students' needs by separating students into different institutions, grade levels and classes, known as stratification, have not succeeded in producing superior overall results, and in some cases they have lower-than-average and more inequitable performance. For example, cross-country/economy analysis shows that in the systems where more students repeat a grade, the impact of students' socio-economic status on their performance is stronger. Students in schools where no ability grouping is practiced also scored eight points higher in mathematics in 2012 compared to their counterparts in 2003, while students in schools where ability grouping is practiced in some or all classes had lower scores in PISA 2012 than their counterparts in PISA 2003.

In highly stratified systems, there may be more incentives for schools to select the best students, and fewer incentives to support difficult students if there is an option of transferring them to other schools. In contrast, in comprehensive systems, schools must find ways of working with students from across the performance spectrum. These different incentive systems may help explain the greater level of equity achieved in systems that use stratification less. School systems that continue to differentiate among students in these ways need to create appropriate incentives to ensure that some students are not "discarded" by the system.

Reflecting these results, Poland (Box IV.2.1), for example, reformed its school system by delaying the age of selection into different programmes; and schools in Germany (Box II.3.2) are also moving towards reducing the levels of stratification across education programmes.

...AND MOTIVATE STUDENTS.

The PISA 2012 results also show that students in more comprehensive systems reported that making an effort in mathematics and learning mathematics is important for their future career. This does not necessarily mean that if stratification policies were changed, students in stratified systems would have better instrumental motivation to learn, since PISA does not measure cause and effect. However, policy makers in highly stratified systems need to consider not only the equity aspect of education outcomes but also non-cognitive outcomes, such as students' attitudes towards learning.

ENGAGE STUDENTS IN SCHOOL EVALUATION AND TEACHER APPRAISAL TO IMPROVE TEACHING AND LEARNING.

Compared with PISA 2003, more schools are using student assessments to compare the school's performance to that of other schools or use student assessment data to monitor teacher practice. The scope of evaluations and assessments is not only limited to student assessments, but most schools use various forms of evaluations, such as self-evaluations, external school evaluation and teacher appraisals. PISA shows that, on average across OECD countries, 92% of students are in schools that use at least a self-evaluation or external evaluation to assure and improve school quality, and 60% of students are in schools that seek written feedback from students regarding lessons, teachers or resources in addition to using self-evaluations and/or external evaluations of the school. PISA results also show that in systems that attain a high level of equity, more schools tend to seek written feedback from students regarding lessons, teachers or resources.

The OECD review on evaluation and assessment in education (OECD, 2013) emphasises the importance of engaging all staff and students in school self-evaluations and using student feedback to teachers for formative purpose. Some countries engage students in school evaluations by establishing student councils or conducting student surveys in schools. In order to use the feedback from students effectively, school staff may need assistance in interpreting the evaluative information and translating it into action. Trust among school staff and students, and strong commitment from the school community, is key to making this practice work.

APPLY A COHESIVE, SYSTEMATIC AND CONTINUOUS APPROACH TO IMPROVE SCHOOL SYSTEMS.

Since education policies and practices, resources invested in education, the learning environment, socio-economic status, the demographic profile of schools and education outcomes are all interrelated, a cohesive and systematic approach is needed. In addition, since school systems change over time, intentionally or not, in response to external factors, efforts to improve school systems should be continuous. Korea (Box I.4.1), Turkey (Box I.2.5), Colombia (Box IV.4.3), Estonia (Box I.5.1) and Japan (Box III.3.1), among others, have established strategic development plans. These frameworks anticipate challenges (e.g. demographic changes) and provide guidance for coherent policies and programmes to be implemented at different levels of education. In most cases, they are flexible enough to allow for revisions and to be adapted to local contexts. What PISA findings tell policy makers, in the end, is that while there are several features that are shared among high-performing systems, among systems with greater equity or among high-performing schools, no one policy or practice spells success.

Note

1. The name of the project is OECD review of policies to improve the effectiveness of resource use in schools (school resources review).

References

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