Strong Performers and Successful Reformers in Education

Education Policy Advice for Greece

OECD

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EDUCATION POLICY ADVICE FOR GREECE

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Foreword

The future of Greece's well-being will depend on improving educational performance to boost productivity and improve social outcomes. In the current economic context, with the need to get best value for spending, Greece must and can address inefficiencies in its education system.

The challenges are significant. For example, Greece lags behind many OECD countries in performance on PISA, including countries with the same or lower levels of expenditure per student as well as countries with the same and lower levels of economic development. Salary costs per student are above the OECD average, mostly because Greek teachers have less teaching time and Greece has smaller classes. A smaller percentage of students who enter tertiary education complete a first degree within the statutory study time than in any other country in Europe.

Greece must take action in order to address the unsustainable cost-structure of the system and the inefficiencies that are inherent in an outdated, ineffective centralised education structure. This must include: transforming governance and management structures, eliminating, consolidating or merging small and inefficient units, making significantly better use of human resources, improving quality-assurance and information systems for accountability, and establishing far more effective structures to lead and sustain the implementation of reforms. Real change can only be achieved through persistent, consistent implementation year after year, with careful attention to capacity building for improvement.

To address the challenges, the government has established a bold agenda and sought advice from a task force on the development and implementation of reform proposals that reflect best practices in OECD countries. This report provides the outcomes of the work of the task force. It presents a roadmap for how the reforms can be successfully implemented, with pointers to relevant experience in other countries. The report stresses short-, medium-, and long-term actions that have the potential to generate efficiencies.

This report is a contribution to policy discussions in Greece. We, at the OECD, are proud to have led this effort and stand ready to continue to help Greece to better prepare for the future.

Angel Gurría
OECD Secretary-General

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The task force was chaired by Aims McGuinness from the National Centre for Higher Education Management Systems, Boulder, Colorado, United States. Other members of the task force were Gaby Hostens, former Secretary General for Secondary Education, Ministry of Education, Flemish Community of Belgium; Professor Panayiotis Papakonstantinou, University of Ioannina, Greece; Professor Jorge Pedreira, former deputy state secretary of education, Ministry of Education, Portugal; Professor Michael Shattock, Institute of Education, University of London and former Registrar, University of Warwick, United Kingdom; and Professor Panos Tsakloglou, Athens University of Economics and Business, Greece.

The report was prepared by the task force, within the framework of the OECD's project Leveraging Knowledge for Better Education Policies (GPS), under the direction of Andreas Schleicher. Fani Stylianidou provided analytical support and Noeleen Hachem provided administrative support. Marilyn Achiron, Elizabeth Del Bourgo and Elisabeth Villoutreix provided editorial advice. The OECD conducted two preparatory missions to Athens to meet with senior officials and major stakeholders in order to identify the scope and organisation of the project. This was followed by a meeting of the task force in Paris and a two-week mission of the task force to Greece, which included meetings with senior officials and wide range of stakeholders including the National Education Council, regional education directors, teachers' unions, unions of school administrators, the university rectors' and the presidents' councils of Technological Educational Institutes (TEI), university and TEI academic staff, university and TEI student unions, and representatives of business and employer organisations. The task force also conducted site visits to primary and secondary schools. The OECD would like to acknowledge with great appreciation the assistance provided by the Ministry throughout the project, especially Nelly Exarchakou and Roy Chourdaki who provided support in scheduling meetings and providing background materials.

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Introduction

OVERVIEW

The future economy and quality of life in Greece will depend on improving education quality and performance while maintaining commitments to equity and social justice. When the economy recovers, Greece must invest in education. But in the current economic crisis, Greece can improve education by addressing inefficiencies in the system.

The issue in Greece is not just that problems are unknown or that solutions are lacking. Perhaps most important, proposals for change and legislation by successive governments have not been implemented or have not been implemented effectively.

- Greece lags behind many OECD countries in performance on PISA, including countries with the same or lower levels of expenditures per student and countries with the same and lower levels of economic development. Furthermore, over the past decade, several countries that spend the same amount or less per student on education have shown significant progress, yet Greece's performance in PISA has improved at a far slower pace.
- The school network is composed of thousands of comparatively small schools, many with low pupil-teacher ratios, resulting in not only an inefficient system but a system that lacks the capacity to ensure high-quality educational opportunities for all of its young people. Greece has many small, isolated communities in mountainous regions and on small islands, which presents a major challenge in efforts to develop a more efficient and high-performing educational system. Yet, experience from other OECD countries shows that this challenge can be successfully addressed.
- Average student-teacher ratios and class sizes in Greece are significantly lower than in most European countries. Teachers in Greece teach significantly fewer hours per year than virtually every other country in Europe. Even though teachers' salaries are below the OECD average, salary costs per student are *above* the OECD average. The major reason for the high unit cost is because Greek teachers teach relatively fewer hours and Greece has smaller classes.
- Greece is one of only a few countries in Europe without external assessment of learning or external evaluation of schools and teaching or indeed any other comparative mechanism of quality assurance (except for its participation in PISA and university entrance examinations). There are no reliable indicators in place that provide information on the quality and effectiveness of the system.
- Greece has made dramatic strides in the percentage of its young people completing secondary education and entering tertiary education. Yet, a smaller percentage of students who enter tertiary education complete a first degree within the statutory study time than in any other country in Europe. Far more students take the university entrance examination and are placed at universities than actually participate full-time and graduate within two years of the normal study period.
- As tertiary education enrolments have increased, the number of departments and institutions, especially in the technology institutes, has proliferated, leading to a high level of duplication in some fields and departments with few or no students.
- Greece remains one of the most centrally governed education systems in Europe as other countries have moved dramatically to decentralise their education systems, increase the flexibility and responsiveness of schools and tertiary institutions to the needs of their students, and improve the working conditions of their teachers, faculty members and researchers.

THE CHALLENGE TO BRING ABOUT LASTING CHANGE

Over the past years, Greek governments have sought to address a number of these issues through reforms. However, where reforms have been introduced, they have often failed to make a real impact on the quality and efficiency of the system and to produce major global results as far as, the performance of students and the achievement of learning objectives are concerned. New laws have often been enacted but not fully implemented.

The current government also recognises the gap between policy intent and implementation and is pursuing change in unprecedented ways. In the words of the Minister of Education, Lifelong Learning, and Religious Affairs:

> The multifaceted and multi-layered crisis that we experience can become the catalyst for change of our timeless problems. I am deeply convinced that the time has come. The Prime Minister has put education as the dominant priority of the national plan for the regeneration of the country.
>
> We change education, we change Greece: to change our educational system, to change attitudes, to change Greece.
>
> To report findings are not enough; to make denouncements does not get us anywhere. We need to look at the reality, find solutions, and act to change things. Vision, goals, plan, faith, work, consensus, patience and overcoming of the individual and temporary interests, should lead to convergence to combine political and social forces, so that we can move towards a great and profound change, which takes time and effort but is worth above all else…
>
> All the changes, choices and actions that are launched simultaneously converge in a perspective for the overall restructuring of Greek education which will guarantee the quality, meritocracy, equal opportunities and possibilities, which will trigger creativity, imagination, and the initiative for innovation, and which will promote collegiality, solidarity, respect of others.

> Things are neither simple nor easy. They require a lot of study and hard work by many. We need strength to overcome the obstacles of this financial crisis. It takes time, perseverance and patience. (Anna Diamantopoulou, "We Change Education, We Change Greece," March 2011).

The government is pursuing significant changes involving comprehensive reforms of compulsory education, upper-secondary education, and the administrative structure of the education system within an overarching framework, "The Student First - New School" (Νέο Σχολείο), as well as a proposed new framework law for higher education, including reforms in the internal governance and management of universities and strengthened finance and accountability mechanisms.

These reforms reflect many of the best practices in OECD countries. In light of the short- and long-term economic pressures on the country, Greece must take even more dramatic actions to address the unsustainable cost-structure of the system and the inefficiencies that are inherent in an out-dated, ineffective centralised education system. These must include: transforming governance and management structures; eliminating, consolidating or merging small inefficient units; making significantly better use of human resources; improving quality-assurance and information systems for accountability; and establishing far more effective capacity to lead and sustain the implementation of changes in governments.

Real change can only be achieved through persistent, consistent implementation year after year, with careful attention to capacity building for improvement. This report provides a roadmap for how these reforms can be successfully implemented, with pointers to relevant experience in other countries. The report stresses short-, medium-, and long-term actions that have the potential to generate efficiencies.

This report focuses on the efficiency of the education system in certain core areas: compulsory education from primary through lower secondary education, upper secondary education, and tertiary education. Greece needs to address other issues that are beyond the scope of this report, many of which are the subject of proposed reforms: early childhood education and care, curriculum for compulsory education, the content and structure of upper secondary general and technical education, university entrance examinations, initial teacher preparation, and lifelong learning.

This report builds on other international studies, notably the OECD Review of Education (1997), the OECD's *Economic Survey of Greece* (2009a), the PISA reports (2010a), the OECD report, *Off to a Good Start: Jobs for Youth* (2010b), and reports provided by Eurydice.

The report is divided into two chapters: primary and secondary education, and tertiary education. Within each part, the report summarises the key data on why Greece must improve performance and efficiency. It then analyses the extent to which the government's reforms address these issues from a comparative perspective. Finally, it outlines short-, medium-, and long-term steps to increase the chances that Greece will emerge from this economic crisis not only with a more efficient education system, but a better-performing more highly performing system that meets global expectations for quality while sustaining the country's historic commitments to equity and social justice.

CONTEXT OF REFORM

Successful change within an educational system must take into consideration a country's history, culture, and policy context. These were taken into account as the OECD prepared this report on education reform in Greece.

Social and cultural context

The social and cultural factors in Greece that are most relevant to education reform include:

- A high personal and family commitment to education, reflected in significant household investments in educational services outside regular educational institutions.
- A commitment to social equity and an egalitarian society, which are values enshrined in the Constitution of Greece (Article 4). The Greek system seeks to avoid privilege and any differentiation or selection among students, teachers, schools or regions on any basis other than "objective criteria".
- Constitutional commitments to free education. The Greek Constitution stipulates (Article 16, section 1): "Art and science, research and teaching shall be free and their development and promotion shall be an obligation of the State".
- A historically agrarian economy and society. This has resulted in a highly local and regional political culture in which, despite strong commitments to Greece as a nation, loyalty to village and family are paramount – even for the population that may have long-since migrated to the major metropolitan areas of Athens and Thessaloniki (Skolarikou, 2003).
- A long tradition of highly centralised government and measures to ensure national cohesion and counter regionalism. Proposals for decentralisation and differentiation by region are met with concern and represent sharp departures from the past.
- A high percentage of employment in the public sector (40% of GDP), with stronger benefits and employment security than is commonly available in the private sector.

- Mistrust of governmental initiatives and concerns about corruption, misuse of public funds or public employment for private purposes. Consequently, the government focuses more on compliance and "preventing bad things from happening" than on providing services or a positive reform agenda.
- A limited tradition of reliance upon private entities to serve public purposes. The Greek Constitution stipulates that, "The establishment of university level institutions by private persons is prohibited" (Article 16, section 8).
- Strong labour unions and the right to organise, supported by Constitutional provisions (Article 12). Strikes and public demonstrations of perceived threats to employee rights are frequent.
- Pride in Greek history and culture, reflected in comparatively traditional views about curriculum and pedagogy.
- Active political participation, reflected in extensive participation in political parties and vocal demonstrations on issues facing the country. This is especially evident in the dominant role of student unions in higher education institutions, which are affiliated with national political parties.

Governmental context

A recurrent theme of this report is that Greece must move from a highly centralised and fragmented system of input controls toward a more flexible system in which the Ministry of Education, Lifelong Learning and Religious Affairs focuses on responsibility and accountability for performance.

Changes in the education system must be made within the framework of overall national directions. Fundamental changes in budgeting and finance, as well as in the structure of national, regional and local governments, are likely to accelerate as a consequence of the economic crisis. This, in turn, will affect the government's human resource capacity at the school, institution, regional and national levels.

Therefore, two major reforms will have significant implications for education:

- reform of central controls on budget expenditures and use of human resources; and
- reform of regional governments.

Budget process

Greece is shifting from a highly centralised control of inputs and line items for programmes managed primarily by the Ministry of Finance, to more decentralised management of responsibility and accountability by Ministries and other public entities (e.g. universities) for budget execution and performance. The country is clearly in a period of transition and, as in most of the reforms discussed in this report, a gap remains between intent and implementation. However, the economic crisis is accelerating the process of change.

Despite reforms, the Ministry of Finance maintains centralised control over finance policy, including budget development and execution, with a continuing emphasis on *ex ante*, pre-audit controls to ensure compliance with laws and regulations, rather than *ex post*- post-audit review and monitoring. Before recent reforms, there were 14 000 line items (since reduced to approximately 1 000) with limited authority for Ministries and other entities to make transfers and other adjustments with approval by the General Accounting Office within the Ministry of Finance.

A 2008 OECD journal paper on "Budgeting in Greece" found that the fragmented budget structure created "an impediment to a comprehensive programmatic or policy view of the budget and to the impact of the budget on fiscal policy" (Hawkesworth, et. al., 2008). There was a split in responsibility and accountability between the annual "ordinary" budget (for operations) and the investment budget, with the result that long-term budget implications of new investments (*e.g.* construction of new buildings) were not considered. The budget and rules related to human resources (salaries, pensions, etc., for public employees) were strictly controlled centrally and payments to public employees were made directly to individuals, and not through ministry or agency budgets. Special accounts had independent sources of revenue and were not fully incorporated within the budgets of ministries, and "public law entities", such as universities, were excluded from the ordinary budget process. For public law entities that are partly funded by the government and partly by revenues generated from non-government sources, only the amount transferred from the central government was visible in the budget. As a result, the budget for Greece, as well as the budget for any ministry or entity showed only government-funded expenditures and not a comprehensive budget funded by the state and other sources of revenue.

As the paper noted:

> The "OECD Best Practices for Budget Transparency" (OECD, 2002) state that expenditures should be presented in gross terms in the budget. In addition, earmarked revenue and user charges should be clearly accounted for separately; this should be done regardless of whether particular incentive and control systems provide for the retention of some or all of the receipts by the collecting agency (Hawkesworth, et. al., 2008: 81).

At the time of the 2008 OECD journal paper, it was not possible to obtain a comprehensive view of expenditures for a specific programme or function, such as education, because expenditures from two or more ministries for the same function or programme did not appear in a comprehensive programme budget. For example, expenditures by municipalities for maintenance of school buildings and transportation funded through the budget of the Ministry of Interior were not reported alongside the expenditures on education that were funded through the budget of the Ministry of Education.

The centralised pre-audit control of budget execution was carried out by the Ministry of Finance's General Accounting Office and Court of Audit, as well as fiscal offices tied to the Ministry of Finance within each ministry or other line agency. The effect of these controls was that these ministries and entities focused on ensuring compliance with central rules rather than performance and efficient use of resources within their mission. The 2008 OECD journal paper observed that:

> The Greek budget execution system focuses an extraordinary amount of attention on ensuring the legality and propriety of expenditure. The functions of the financial divisions in ministries, the Fiscal Audit Offices and the Court of Audit frequently overlap. The current detailed budget structure results in excessive budget adjustments. Detailed review of pre-payments and budget amendments by the GAO (General Accounting Office) are not productive. [….] Staff resources at all levels are used to process transactions rather than to analyse budget policy or performance. (Hawkesworth, et. al., 2008: 73)

Public employment and the budget for salaries, pensions, etc., remain under government control. These controls related to position classifications and related salary levels, and "objective criteria" are used for changes in status. The Greek emphasis on social equity and strong opposition from public employee unions mean that linking pay to performance is exceptionally difficult, if not impossible. As noted in the 2008 OECD journal paper:

> Public salaries in Greece are set according to five employment ranks based on educational level, time of service and a satisfactory personnel appraisal. In the past, personnel assessments have not involved a realistic evaluation of performance. (Hawkesworth, et al., 2008: 107)

Central laws and regulations govern public employment across the government, while each ministry carries out these laws and regulations through additional laws and regulations that apply to its sector. For example, the Ministry of Education implements laws and sets policies regarding teachers and other public employees, but these actions must conform to the central requirements of the Ministry of Interior.

The management of budgeted positions is the responsibility of the Ministry of Education and other entities (within the parameters set by the Ministry of Finance), but no flexibility is provided for budget transfers from the salary portion of the budget and the regular or current budget. Because of the lack of authority regarding the salary portion of the budget, the proposals for granting increased budgetary authority (e.g. to universities) often focuses only on the non-salary portion of the budget.

The selection and assignment of individuals to specific positions is complex. The ultimate approval of a specific individual to a previously approved and budgeted position is made by the Ministry of Finance after review and approval by the Ministry of Education – again to ensure compliance with all laws and regulations. Decisions of entities (e.g. universities) regarding these positions are then subject to audit by the Court of Audits with individuals held personally liable if rules are violated. The Ministry of Finance apparently also withholds final approval of new appointments because of budget limitations as in the current fiscal crisis.

As noted earlier, once an individual's appointment to a public employment position is approved, payments are made directly by the Ministry of Finance. Public entities "never see" the funding that goes to pay their public employees.

Human resources comprise as much as 70% to 80% of the "budget" of educational institutions. The consequence of this centralised payment to employees is that educational institutions have an exceptionally limited role in improving the efficient use of human resources.

Greece has made significant improvements in budgeting processes and controls since the 2008 OECD journal paper and has been making steady progress in implementing Programme Budgeting, beginning with a pilot in 2008 and now extending to all dimensions of the government (Hellenic Republic, Ministry of Finance, 2008, 2009 and 2010). The government is pursuing reforms consistent with the OECD report recommendation that:

> As part of the programme budgeting reform, line ministry accountability should be strengthened and the line ministries should be given a strong mandate to manage. Responsibility is only meaningful if there is autonomy in decision making. In this regard, ministries should be required to assume responsibility for accuracy of the budget, thus making it easier to review the effectiveness of the ministries and agencies in the context of their performance (Hawkesworth, et al., 2008: 88).

The changes being implemented or proposed in education described in subsequent sections of this report demonstrate a commitment of the government of Greece to move to a more decentralised structure with increased authority and responsibility at the school and regional levels in primary and secondary education and at universities and Technological Educational Institutes (TEI) within tertiary education. Nevertheless, it takes time to develop the capacity for decentralised units to assume increased responsibilities. Meanwhile, the culture of highly centralised structures is likely to remain.

The current fiscal crisis is forcing the government to take extreme measures to reduce the country's deficit, including stringent measures to tighten fiscal management (Hellenic Republic, Ministry of Finance, 2011). Some of the reforms, such as the shift to programme budgeting, may be on hold. In the long run, as the Greek economy recovers, it will be important to return to some of the fiscal management and budgetary reforms started before the crisis. Every level of the education system must assume responsibility for efficient use of resources.

General administrative (Kallikratis) context

The general administrative reform (*Kallikratis*), effective from 1 January 2011, is also important for ongoing education reforms, especially the administrative restructuring and rationalisation of the school network. The former system of 13 regions (περιφέρειες), 54 prefectures, and 1 034 municipalities and communities was replaced by seven decentralised administrations, 13 regions and 325 municipalities. Prior to reforms in 1996, there were 5 751 municipalities. The regions and municipalities are fully self-governed, and their first elections were held between 7 and 14 November 2010. As regional organs of the central government, the previous regions were in turn replaced by seven decentralised administrations which group one to three peripheries under a government-appointed general secretary (Ministry of Interior, Decentralisation and E-Government, 2011).

1

Improving Efficiency in Primary and Secondary Education

Rather than addressing the full range of reforms, this chapter focuses specifically on four major areas where urgent and fundamental change must be made to improve the efficiency of the Greek primary and secondary education system:

- development and use of human resources;
- rationalisation of the school network;
- evaluation and assessment; and
- governance and management of the education system.

For each of these issues, a brief analysis, an outline of major reforms, and the OECD's observations and recommendations for further action are provided.

DEVELOPMENT AND USE OF HUMAN RESOURCES

The efficiency of education depends on a number of interrelated factors, including the number of teachers and their duties (statutory instructional time and other responsibilities), the level of teacher compensation, teacher working hours, student instruction time, student-teacher ratios, and class size.

The OECD considers the inefficient use of human resources, especially teachers, as a core factor contributing to the low efficiency of the Greek education system.

Teachers

Number of teachers

The conditions affecting the supply and demand for teachers in Greece are changing rapidly, in ways that should help improve educational efficiency. The economic crisis, and actions taken by the Ministry of Education, are leading to a significant reduction in the numbers of teachers in primary and secondary education. Approximately 180 000 teachers were employed in permanent positions in 2010-11. The mergers and closures of schools, described in the following section, resulted in a loss of 2 000 permanent teachers' positions, approximately 80% of these in kindergarten and primary schools and 20% in secondary schools. The reduced number of positions in some regions is resulting in an increased number of redundant teachers with no positions available except outside their current region. In some cases, redundant teachers are being reassigned to other schools (e.g. secondary school teachers of English, ICT, music and arts) or they are being reassigned to newly consolidated, all-day primary schools. Furthermore, government restrictions require that only one person should be replaced for every five who retire (5 to 1 rule), which will also lead to a significant reduction in the numbers of teachers. In 2010, about 11 500 primary and secondary teachers retired. During the period 2011-13, the Ministry estimates that retirements will continue at the current rate, with the result that in the four years between 2010 and 2013, 45 000 teachers will leave the system. Because of the 5 to 1 rule, the news media report that recruitment of regular teachers is unlikely to exceed 9 000 during the same period, resulting in an overall loss of 35 000 teachers – or 20% of all permanent teachers.

The challenge will be to ensure that the reductions are not mainly driven by administrative considerations, but that they lead to a more optimal allocation of human resources to students. Measures are also needed to address the consequences of worsening employment prospects for teachers currently without permanent positions or recent university graduates hoping to be teachers. Until recently, new graduates were employed in primary schools within a few months after receiving their degrees. While more than 2 000 qualified graduates are entering the labour market every year, the recruitment of new primary teachers is likely to be no more than 900 per year. The consequence is a growing number of teachers awaiting appointment (4 500 are already on the "list"), the majority of whom are working on contract on an hourly basis. Recent actions to freeze all public employment could further reduce the number of appointments to permanent teacher positions to replace those who retiring.

Teachers' salaries and salary cost

Teachers' salaries, which usually form the largest part of education budgets, are comparatively low in Greece. They are lower at all points of comparison (starting; after 15 years; and at the top of scale) than the OECD average (Figure 1.1). Equally problematic is the absence of situation and performance-related elements in the salary scale, which increases the difficulties in steering improvements in the match between demand and supply.

Despite low salaries, the salary cost per student (in USD) is higher in Greece than in most other OECD countries (Table 1.1), which underlines the urgency of addressing teacher-allocation issues. The effects of instruction time for pupils, teaching time for teachers, but above all, estimated class size, which is well below the OECD average, all contribute to that high salary cost per student.

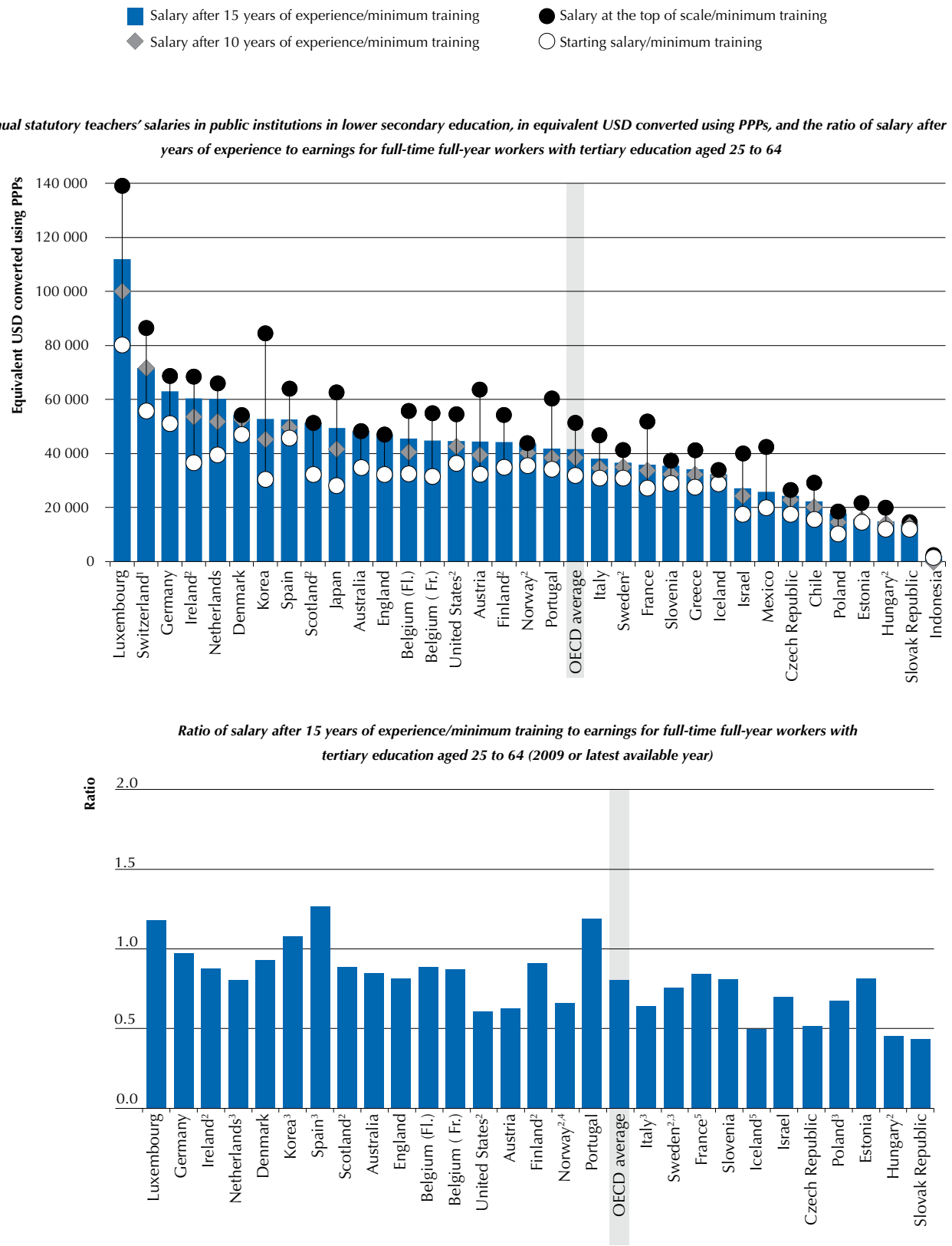
Legal provisions governing teachers' hours

Working hours for teachers and head teachers are specified by law. Every primary and secondary teacher is obliged to stay in school, in addition to the teaching hours, for not more than six hours a day for a maximum of 30 hours a week. This is the case for teachers with administrative duties (e.g. Heads and Deputy Heads, heads of sectors, etc.) and for other teachers only if they have been requested to do so by a member of the administrative staff and if they have been given concrete tasks to do (according to Article 9 par. 3 of N. 2517/1997, and Article 13 par. 8 and Article 14 par. 20 of N. 1566/1985).

As shown in Table 1.2, statutory teaching hours per week for primary school teachers decrease as the size of the school increases. Teachers with more years of service in larger schools teach fewer hours as their length of service increases. In other words, the less experienced teachers assume more of the teaching load. Thus, the value of more experienced teachers is lost.

▪ Figure 1.1 ▪

Teachers' salaries: An international comparison (2009)



1. Salaries after 11 years of experience.
2. Actual salaries.
3. Year of reference 2008.
4. Year of reference 2006.
5. Year of reference 2007.

Countries are ranked in descending order of teachers' salaries in lower secondary education after 15 years of experience and minimum training.

Source: OECD (2010), *www.oecd.org/edu/eag2010*.

Table 1.1 Contribution of school factors to salary cost per student in relation to the OECD average (in equivalent USD, converted using PPPs for GDP, 2009)

	Salary cost per student	Difference from the OECD average of	Contribution of the underlying factors to the difference from the OECD average			
			Contribution of the underlying factors to the difference from the OECD average of	Effect (in USD) of instruction time (for students) below/above the OECD average of	Effect (in USD) of teaching time (for teachers) below/above the OECD average of	Effect (in USD) of estimated class size below/above the OECD average of
	OECD average	USD 2 309	USD 36 228	797 hours	782 hours	16 students per class
	(1)	(2)= (3)+(4)+(5)+(6)	(3)	(4)	(5)	(6)
Australia	2 917	608	629	485	-290	-218
Austria	2 940	631	120	-213	7	718
Belgium (Fl.)	3 256	948	348	145	-99	554
Belgium (Fr.)	3 125	816	229	416	206	-35
Canada	m	m	m	m	m	m
Chile	538	-1 771	-1 257	443	-130	-827
Czech Republic	1 198	-1 111	-873	-414	-144	320
Denmark	4 182	1 873	494	-413	596	1 196
Estonia	773	-1 536	-1 484	-441	339	50
Finland	2 655	346	134	-679	360	531
France	1 603	-706	-246	294	-329	-424
Germany	3 017	708	1 076	-618	-79	329
Greece	**3 170**	**862**	**-348**	**-281**	**757**	**733**
Hungary	1 420	-889	-1 694	-516	497	823
Iceland	2 730	421	-738	-262	390	1 030
Ireland	3 041	732	1 075	373	-428	-288
Israel	1 217	-1 092	-1 034	400	62	-519
Italy	2 984	675	-370	572	163	309
Japan	2 587	278	727	-291	242	-401
Korea	2 262	-47	956	-616	-169	-218
Luxembourg	5 595	3 286	2 297	562	213	214
Mexico	681	-1 628	-851	5	-33	-750
Netherlands	2 911	602	619	432	-458	10
New Zealand	2 245	-64	134	487	-531	-154
Norway	3 424	1 115	63	-569	154	1 467
Poland	1 342	-967	-1 832	-980	866	978
Portugal	3 135	826	-56	298	-246	831
Slovak Republic	m	m	m	m	m	m
Slovenia	2 033	-276	-266	-546	297	239
Spain	3 263	954	462	124	-331	700
Sweden	m	m	m	m	m	m
Switzerland	3 657	1 348	1 312	-338	-372	746
Turkey	820	-1 489	-876	126	317	-1 056
United Kingdom	2 209	-100	477	260	-205	-632
United States	3 090	781	540	563	-935	613

How to read this table: At USD 3 170, the salary cost per student in Greece exceeds the OECD average by USD 862. Below-average salaries and below-average instruction time reduce the difference from the OECD average by USD 348 and USD 281, respectively, whereas below-average teaching time and below-average class size increase the difference from the average by USD 757 and USD 733, respectively. The sum of these effects results in a positive difference from the OECD average of USD 862.
Source: OECD (2010), (*www.oecd.org/edu/eag2010*). Data for Canada and Sweden were not available.

Table 1.2 Required teaching hours in primary education (2010)

	Primary Education					
	Teachers in 4-post+ schools	Teachers in 1-post, 2-post and 3-post schools	Head teachers in 4-post and 5-post schools	Head teachers in 6-post to 9-post schools	Head teachers in 10-post to 11-post schools	Head teachers in 12-post+ schools
Years in service	Teaching hours	Teaching hours	Teaching hours	Teaching hours	Teaching hours	Teaching hours
0-10	24	25	20	12	10	8
11-15	23	25	20	12	10	8
16-20	22	25	20	12	10	8
20+	21	25	20	12	10	8

Source: Article 9 par.3 of Law 2517/1997 (Government Gazette n.160, issue A', 11/08/1997).

Primary school leaders with a university-level education are required to teach fewer hours as their time of service, and experience, increase (Table 1.3). Again, the better-prepared and more experienced teachers (at least in terms of subject-matter) are required to teach less than the less-prepared and less-experienced teachers (according to Article 9 of N. 2517/1997).

Table 1.3 Required teaching hours for teachers with university-level degree, primary education (2010)

University education	0-10 years	10-15 years	15-20 years	more than 20 years
	24	23	22	21

Source: Article 9 par.3 of Law 2517/1997 (Government Gazette n.160, issue A', 11/08/1997).

The teaching hours of head teachers in lower and upper secondary education decrease as the size of the school increases (Table 1.4). Their teaching obligations decrease as their length of service increases only after 20 years of service.

Table 1.4 Required teaching hours, secondary education (2010)

	Lower and upper secondary education				
	Teachers with university degrees	Head teachers in schools of 3-5 classes	Head teachers in schools of 6-9 classes	Head teachers in schools of 10-12 classes	Head teachers in schools of 12+ classes
Years in service	Teaching hours	Teaching hours	Teaching hours	Teaching hours	Teaching hours
0-6	21	8	7	5	3
7-12	19	8	7	5	3
13-20	18	8	7	5	3
20+	16	6	5	3	1

Source: Article 14 par.13 of Law 1566/1985 (Government Gazette n.167, issue A', 30/09/1985).

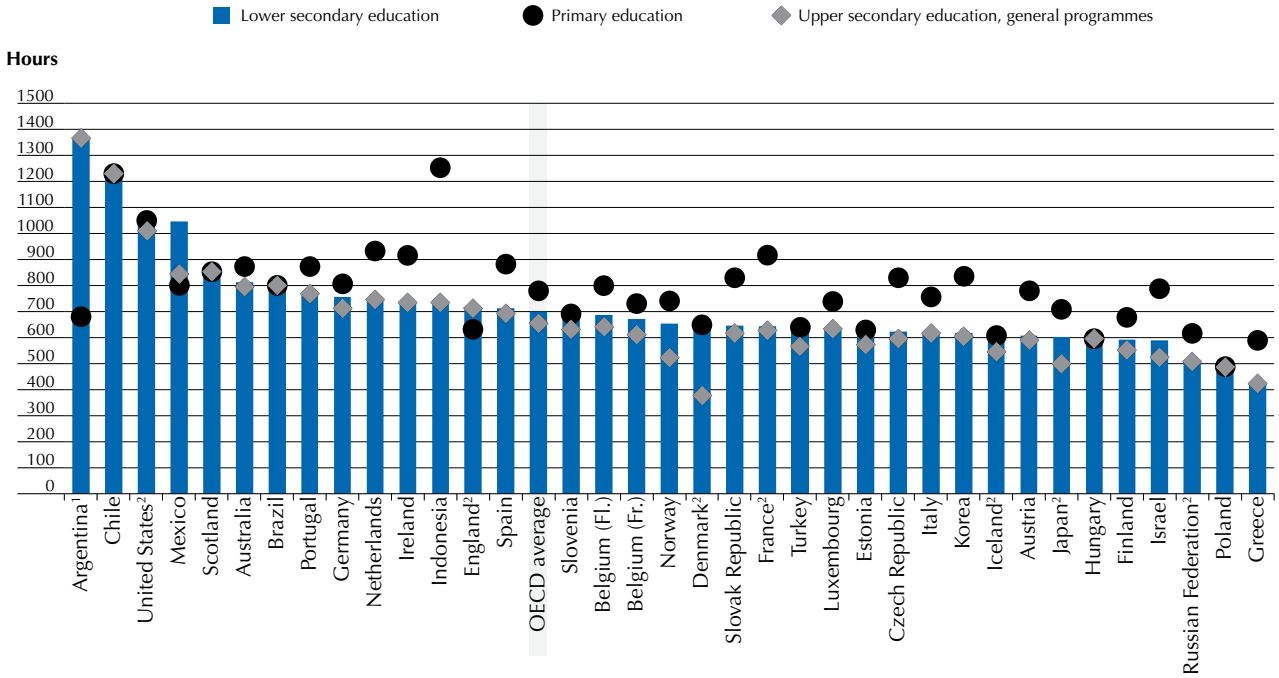
Teachers' workload

Teachers' yearly workloads are considerably lighter than those in most OECD countries, especially at the lower and upper secondary levels (Figure 1.2). Between 1996 and 2009, net contact time in hours per year decreased more sharply in Greece at all levels than any OECD country and significantly more than in the EU and in OECD countries on average.

▪ Figure 1.2 ▪

International comparison of number of teaching hours per year, by level of education (2009)

Net statutory contact time in hours per year in public institutions



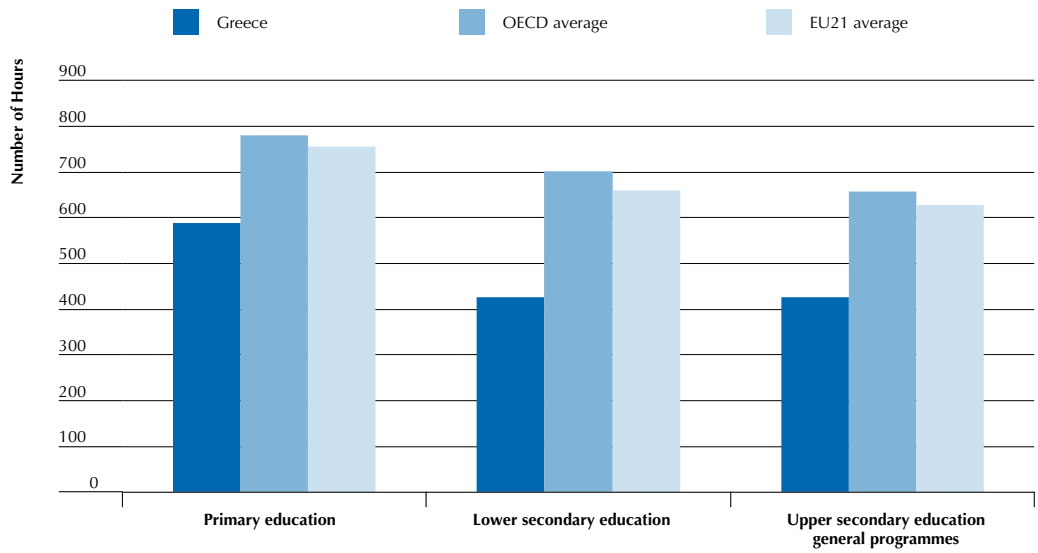
1. Year of reference 2008.
2. Actual teaching hours.
Countries are ranked in descending order of the number of teaching hours per year in lower secondary education.
Source: OECD (2010c), Table D4.1. (www.oecd.org/edu/eag2010).

Net contact time in hours per year in public institutions

The school year in Greece is shorter than in many other EU and OECD countries, partly because high temperatures make extending the school year impractical. It is therefore necessary to adjust international comparisons to get an accurate picture of the workload. As shown in Figure 1.3, even with these adjustments, there remains a striking contrast between net teaching time in Greece and in OECD and EU countries.

▪ Figure 1.3 ▪

Net teaching time in hours: Greece compared to OECD and EU21 averages (2009)



Note: Number of days of instruction in Greece are adjusted to account for a shorter school year required by weather conditions.
Source: OECD.

Average class size

Maximum class size is defined by law to be 25 students per class in primary schools and 30 students per class in secondary schools. In practice, as shown below, many schools in Greece have significantly fewer students per class than the legal maximum after rationalisation and consolidation.

The number of students per class is lower than in almost all OECD and partner countries (Figure 1.4); and that number decreased from 2000 to 2009.

Student-teacher ratios

Greece has one of the lowest ratios of students to teachers among OECD and EU countries (Table 1.5 and Figure 1.5). An analysis of student-teacher ratios in relationship to school size confirms the pattern of the data reported to the OECD.

Table 1.5 Student-teacher ratios by level, Greece compared to OECD and EU-19 averages (2007)

	Greece	OECD Average	EU-19 Average
Primary Education	10.1	16.0	14.4
Lower Secondary Education	7.7	13.2	11.5
Upper Secondary Education	7.3	12.5	11.4

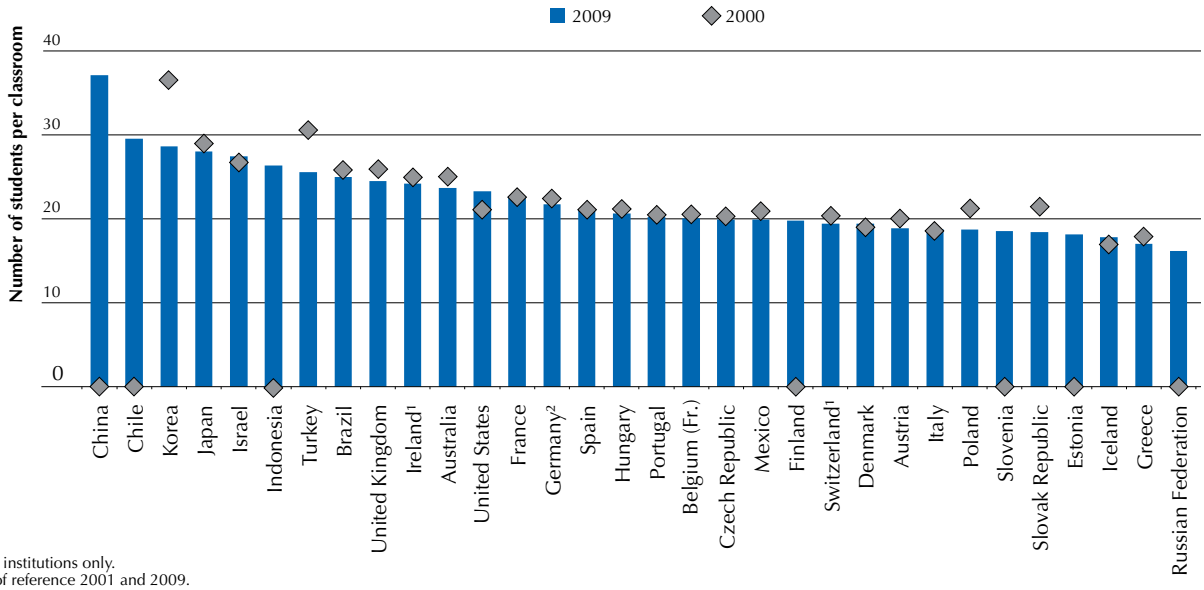
Note: 2007 was the last year that Greece reported these data to OECD.
Source: OECD (2009b), *www.oecd.org/edu/eag2009*.

School leadership

Greece has one of the most centrally governed and managed education systems in Europe (Figures 1.6, 1.7 and 1.8), as discussed later in greater detail. One of the areas in which school directors have the least authority compared to other countries is in managing human resources. Strengthening school leadership is one of the most crucial challenges for education reform.

▪ Figure 1.4 ▪

International comparison of class size (2009)



1. Public institutions only.
2. Years of reference 2001 and 2009.
Note: Countries are ranked in descending order of average class size in primary education in 2009.
Source: OECD, 2010c.

Current reforms

Under current reforms, conditions surrounding the employment of teachers, school directors, school advisors and others are changing and new laws are being implemented. Among the changes are those enacted in May 2010 which, among other points:

- introduced a certificate of pedagogic competence as a teaching qualification for secondary teachers;
- clarified the criteria for transfers and secondments and made it compulsory that teachers remain in their first position for three years, a provision to address the problem of teachers transferring from isolated and other less desirable locations after only a year. However, the third year counts as two in term of points gathered as an incentive, which also means that at the end of the third year, teachers in undesirable/remote schools are more likely to leave and be transferred to big urban centres, since they will have accumulated more points than other teachers in more desirable schools. Each school is attributed a different number of points depending on its desirability. Each year in service in a school counts for the corresponding number of points, should a teacher want to transfer;
- established the role of mentor for newly-appointed teachers on probation;
- provided for a second specialisation for teachers with a second degree (when appropriate) when approved by the Regional Education Council;
- established new "objective criteria" for selection of school directors, school advisors, and other management positions; and
- in keeping with the newly established selection criteria, ensured that all school directors, school advisors and other positions (approximately 10 000) are subject to reappointment, effective 20 June 2011.

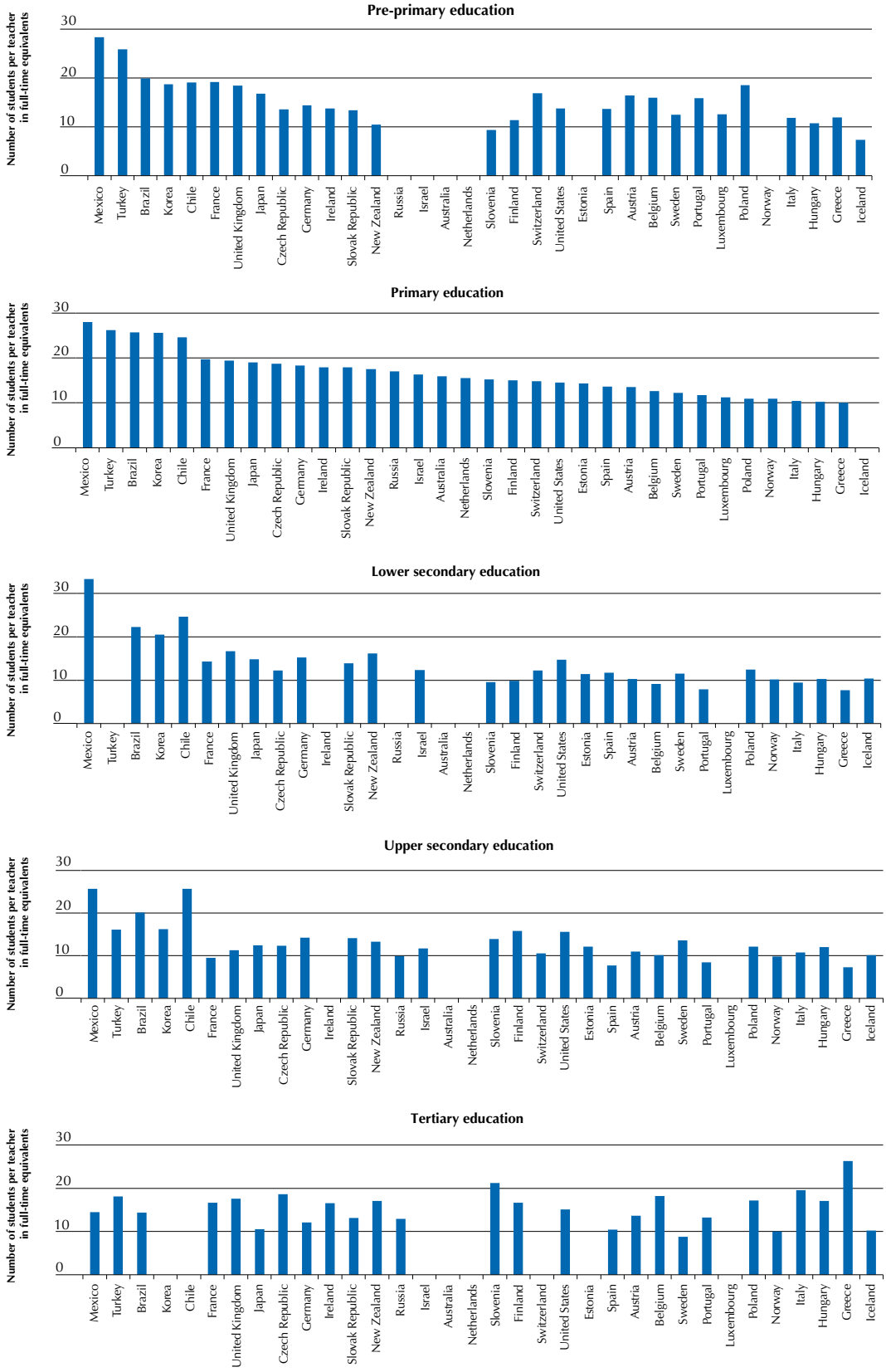
An ambitious in-service-training programme involving 8 000 primary school, foreign language and science teachers starting in June 2011 may contribute to greater quality in the system. To implement the programme, the Pedagogic Institute has launched a vast operation including a more professional approach to selecting trainers (experience in distance and adult learning, articles published, participation in innovative educational activities, etc.). Those high-calibre trainers, mostly university professors, are developing formats for lesson plans. The pilot phase of the programme, involving 600 teachers started in April 2011. The in-service training will link theory and practice using methods of adult education, such as active learning. The training, consisting of both contact hours and 150 hours of distance learning, is based on the new curriculum: managing the new curriculum, integrating new technologies, etc. Implementing the ideas of the "New School", creating digital classes, focusing on authentic learning, creating a digital platform for teachers to co-operate are all at the heart of the programme.

Recently announced changes in the administration of the education system will significantly change the roles of school directors, school advisors, and administrative personnel at the directorate and regional levels.

The rationalisation of the school network (described in the following section), and two pilot initiatives (Experimental and Model Schools, and All-day Primary Schools) also have potential implications for the roles of school directors and teachers. Other changes related to the role of teachers and school directors are also being addressed.

▪ Figure 1.5 ▪

Number of students per teacher in full-time equivalents in primary education (2007)



Note: Countries are ranked in descending order of ratio of students to teaching staff ratios in primary education.
Source: OECD (*www.oecd.org/edu/eag2009*).

▪ Figure 1.6 ▪

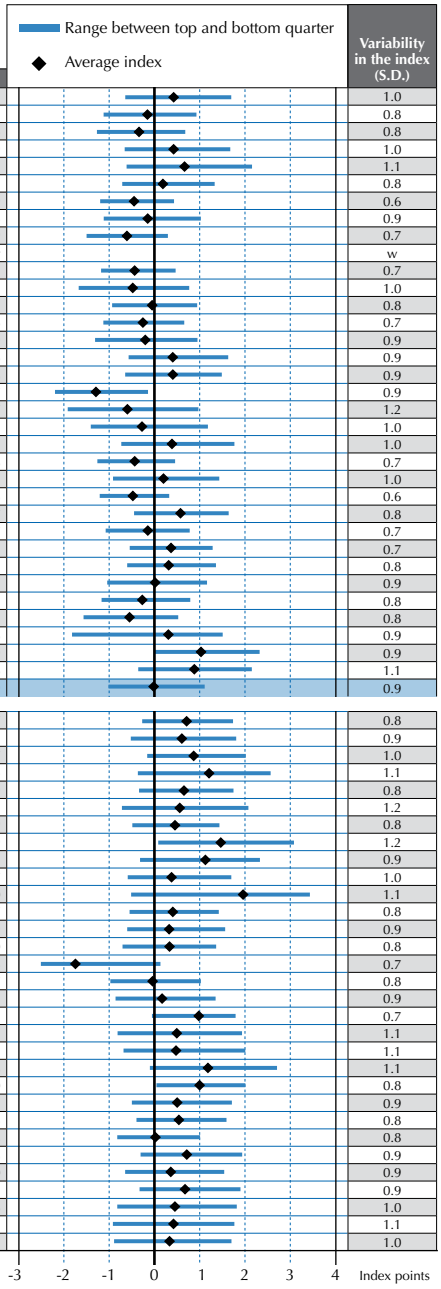
School principals' views of their involvement in school matters

Index of school principal's leadership based on school principals' reports

- **A** I make sure that the professional development activities of teachers are in accordance with the teaching goals of the school.
- **B** I ensure that teachers work according to the school's educational goals.
- **C** I observe instruction in classrooms.
- **D** I use student performance results to develop the school's educational goals.
- **E** I give teachers suggestions as to how they can improve their teaching.
- **F** I monitor students' work.
- **G** When a teacher has problems in his/her classroom, I take the initiative to discuss matters.
- **H** I inform teachers about possibilities for updating their knowledge and skills.
- **I** I check to see whether classroom activities are in keeping with our educational goals.
- **J** I take exam results into account in decisions regarding curriculum development.
- **K** I ensure that there is clarity concerning the responsibility for co-ordinating the curriculum.
- **L** When a teacher brings up a classroom problem, we solve the problem together.
- **M** I pay attention to disruptive behaviour in classrooms.
- **N** I take over lessons from teachers who are unexpectedly absent.

Percentage of students in schools whose principals reported that the following activities and behaviours occurred "quite often" or "very often" during the last school year

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	Variability in the index (S.D.)
OECD	Australia	98	99	64	93	76	58	89	95	81	81	97	93	94	32	1.0
	Austria	89	92	41	60	67	86	84	79	67	22	75	92	87	53	0.8
	Belgium	95	97	43	42	68	33	89	90	82	46	74	98	96	4	0.8
	Canada	98	98	77	91	86	60	95	95	86	63	87	99	98	19	1.0
	Chile	97	98	55	93	95	73	90	96	82	84	94	97	97	62	1.1
	Czech Republic	95	98	57	81	79	93	86	98	83	59	93	96	75	23	0.8
	Denmark	86	89	25	44	53	39	94	91	76	25	76	99	95	29	0.6
	Estonia	92	94	59	84	58	75	72	93	57	62	87	83	79	24	0.9
	Finland	64	75	9	46	40	61	77	95	59	13	77	98	94	39	0.7
	France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w
	Germany	82	94	40	57	53	82	80	85	57	33	73	95	84	42	0.7
	Greece	40	78	12	61	53	46	97	96	67	34	69	98	96	63	1.0
	Hungary	93	99	54	84	62	84	89	91	65	73	86	94	91	41	0.8
	Iceland	88	89	39	78	77	69	87	96	54	58	87	100	75	26	0.7
	Ireland	88	88	14	64	41	50	88	92	62	78	88	97	97	39	0.9
	Israel	94	99	46	87	85	81	94	89	86	90	94	97	98	26	0.9
	Italy	97	99	39	86	75	87	96	98	88	77	92	98	98	18	0.9
	Japan	43	51	37	30	38	40	29	50	31	37	29	61	60	17	0.9
	Korea	80	85	42	64	68	56	75	69	60	46	63	79	68	7	1.2
	Luxembourg	87	98	32	65	52	64	96	67	74	32	47	98	98	23	1.0
	Mexico	95	97	68	94	89	90	95	91	92	62	90	97	96	43	1.0
	Netherlands	95	97	52	66	73	50	76	82	79	75	80	86	71	16	0.7
	New Zealand	99	98	68	98	73	42	78	84	74	87	97	83	94	12	1.0
	Norway	81	88	24	70	49	55	90	91	48	47	81	98	95	28	0.6
	Poland	94	97	93	95	89	96	91	99	92	71	80	97	93	37	0.8
	Portugal	93	97	9	94	65	49	91	89	48	82	97	99	97	7	0.7
	Slovak Republic	97	99	86	87	86	90	86	98	91	76	96	91	91	15	0.7
	Slovenia	99	100	77	78	85	90	90	95	85	65	93	98	94	23	0.8
	Spain	86	97	28	85	55	45	86	86	66	71	92	99	99	63	0.9
	Sweden	90	96	38	83	63	29	89	90	52	68	93	98	87	13	0.8
	Switzerland	72	82	64	34	60	61	85	80	59	17	54	92	83	31	0.8
	Turkey	85	95	70	93	85	90	75	90	87	78	93	97	99	36	0.9
	United Kingdom	100	100	93	100	92	88	90	96	95	97	99	96	97	29	0.9
	United States	98	98	95	96	94	72	95	97	94	88	90	97	96	16	1.1
	OECD average	88	93	50	75	69	66	86	89	72	61	82	94	90	29	0.9
Partners	Albania	97	100	98	99	94	94	90	88	93	87	93	96	96	47	0.8
	Argentina	95	98	63	90	96	84	94	91	86	66	87	98	96	43	0.9
	Azerbaijan	95	96	97	89	97	99	86	96	99	86	90	90	99	77	1.0
	Brazil	99	99	60	94	94	91	97	97	91	94	94	99	99	44	1.1
	Bulgaria	100	100	92	95	79	93	87	98	94	71	98	91	96	29	0.8
	Colombia	98	99	45	85	92	88	90	96	82	87	92	96	96	31	1.2
	Croatia	94	98	70	80	92	96	96	95	98	76	95	99	100	19	0.8
	Dubai (UAE)	100	100	95	97	98	93	98	99	98	90	93	98	97	39	1.2
	Hong Kong-China	99	99	99	97	100	93	96	98	95	92	97	96	96	45	0.9
	Indonesia	94	99	88	91	99	77	89	96	96	95	96	81	93	47	1.0
	Jordan	99	100	100	99	100	98	99	99	99	81	81	100	99	90	1.1
	Kazakhstan	96	98	98	95	97	97	85	98	99	60	87	86	89	17	0.8
	Kyrgyzstan	90	92	98	90	94	98	89	96	95	82	87	86	81	29	0.9
	Latvia	96	97	80	97	83	86	85	94	85	75	83	76	85	30	0.8
	Liechtenstein	53	21	3	15	14	46	82	16	10	0	13	96	58	44	0.7
	Lithuania	97	98	47	92	75	60	74	89	55	65	89	95	83	7	0.8
	Macao-China	100	100	88	74	82	86	93	76	86	52	88	90	90	45	0.9
	Montenegro	95	100	88	97	97	100	92	100	99	84	100	100	96	23	0.7
	Panama	91	95	86	88	95	84	90	92	95	85	88	97	94	43	1.1
	Peru	94	98	86	88	93	80	80	94	92	84	91	91	95	45	1.1
	Qatar	96	100	100	98	97	94	95	95	98	84	87	96	98	28	1.1
	Romania	98	100	87	98	90	90	96	98	99	91	99	100	99	40	0.8
	Russian Federation	99	99	92	89	87	95	80	99	97	55	97	96	86	31	0.9
	Serbia	97	100	67	90	91	82	97	99	87	93	91	97	97	44	0.8
	Shanghai-China	98	98	94	57	99	69	91	93	96	70	98	99	89	14	0.8
	Singapore	100	100	80	99	94	66	93	93	93	98	98	97	96	8	0.9
	Chinese Taipei	98	98	92	84	86	94	86	98	88	90	95	97	95	20	0.9
	Thailand	94	99	88	98	95	97	94	98	94	96	98	97	97	45	0.9
	Trinidad and Tobago	97	98	60	86	88	71	94	95	84	92	95	97	98	26	1.0
	Tunisia	84	97	92	92	97	60	97	82	84	40	59	99	99	45	1.1
	Uruguay	85	98	89	90	90	81	92	94	84	45	73	98	100	25	1.0



Note: Higher values on the index indicate greater involvement of school principals in school matters.
Source: OECD, *PISA 2009 Database*, Table IV.4.8.

▪ Figure 1.7 ▪

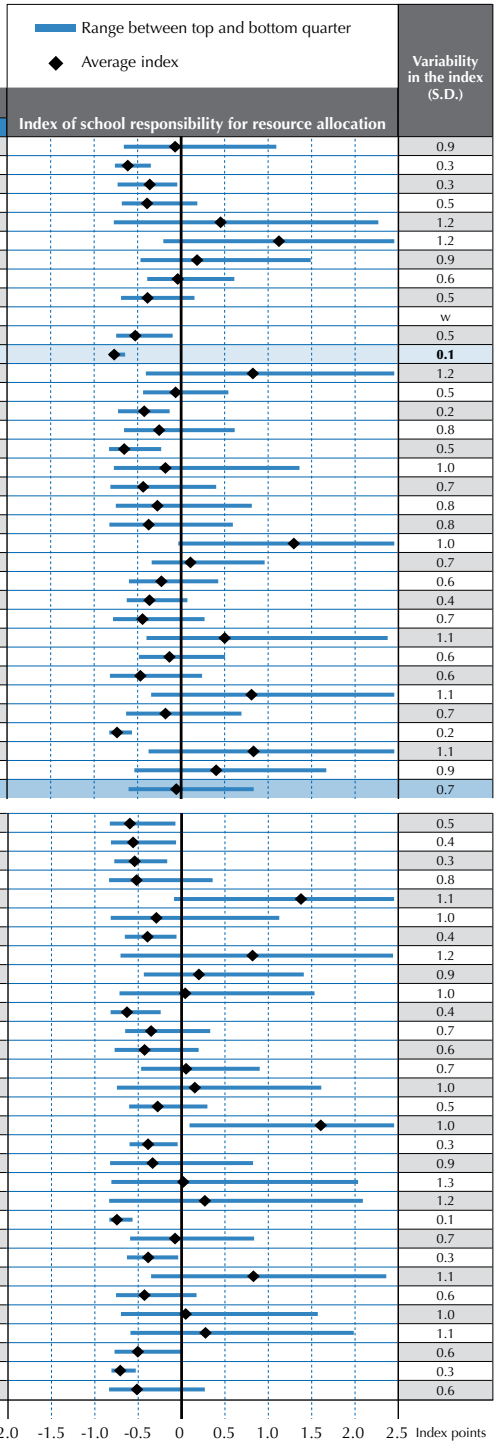
How much autonomy individual schools have over resource allocation

Percentage of students in schools whose principals reported that only "principals and/or teachers", only "regional and/or national education authority" or both "principals and/or teachers" and "regional and/or national education authority" have considerable responsibility for the following tasks.

A Selecting teachers for hire
B Dismissing teachers
C Establishing teachers' starting salaries
D Determining teachers' salaries increases
E Formulating the school budget
F Deciding on budget allocations within the school

1 Only "principals and/or teachers"
2 Both "principals and/or teachers" and "regional and/or national education authority"
3 Only "regional and/or national education authority"

		A			B			C			D			E			F			Variability in the index (S.D.)
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
OECD	Australia	61	20	19	43	12	45	12	5	84	13	6	81	68	16	16	93	6	0	0.9
	Austria	13	35	52	5	26	68	1	0	99	1	0	99	11	9	80	84	12	4	0.3
	Belgium	75	13	12	63	21	17	0	1	99	0	1	99	56	18	26	63	19	17	0.3
	Canada	54	39	7	17	35	48	3	5	92	4	6	91	25	30	45	76	19	5	0.5
	Chile	69	8	23	59	3	38	37	1	62	37	1	62	55	9	36	71	9	20	1.2
	Czech Republic	100	0	0	99	1	0	77	15	8	65	25	11	55	36	9	75	24	1	1.2
	Denmark	97	2	0	69	15	16	20	10	70	16	14	70	80	13	8	98	2	0	0.9
	Estonia	98	2	0	95	5	0	7	20	73	12	33	55	37	54	9	85	15	1	0.6
	Finland	32	43	25	18	19	63	8	7	84	5	15	80	36	41	23	92	6	1	0.5
	France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w
	Germany	29	36	34	7	14	79	3	0	97	4	15	81	29	4	67	97	2	2	0.5
	Greece	**0**	**1**	**99**	**0**	**2**	**98**	**0**	**0**	**100**	**0**	**0**	**100**	**34**	**7**	**59**	**59**	**7**	**34**	**0.1**
	Hungary	99	1	0	97	2	1	49	7	44	56	7	37	73	15	12	92	5	2	1.2
	Iceland	94	6	0	93	7	0	7	13	80	4	16	80	57	30	13	77	22	0	0.5
	Ireland	61	25	14	36	14	50	0	2	98	1	0	99	60	13	27	89	5	6	0.2
	Israel	67	30	3	49	38	13	9	4	87	13	6	80	15	26	59	66	24	11	0.8
	Italy	9	10	82	9	6	84	3	0	97	3	0	96	7	7	86	69	11	21	0.5
	Japan	25	2	73	22	1	77	13	0	87	16	3	80	28	4	69	89	3	8	1.0
	Korea	32	6	62	23	4	74	8	0	92	6	0	94	29	12	58	86	6	8	0.7
	Luxembourg	21	41	38	19	36	45	6	0	94	6	0	94	31	57	12	78	14	8	0.8
	Mexico	34	5	61	22	4	73	8	0	92	6	0	94	46	6	48	71	7	22	0.8
	Netherlands	100	0	0	99	1	0	72	8	20	55	12	33	99	1	0	100	0	0	1.0
	New Zealand	100	0	0	89	7	4	9	3	88	15	21	64	95	4	1	99	1	0	0.7
	Norway	72	21	6	44	22	34	8	4	88	6	13	81	55	28	17	88	12	1	0.6
	Poland	87	12	1	90	10	0	9	20	71	4	20	77	7	42	51	26	43	31	0.4
	Portugal	13	57	30	14	0	86	5	0	94	5	0	94	63	10	27	89	3	8	0.7
	Slovak Republic	98	2	0	98	2	0	39	27	34	32	33	35	45	40	15	70	27	3	1.1
	Slovenia	96	4	1	88	10	1	7	11	82	13	31	56	26	49	26	78	21	1	0.6
	Spain	31	3	66	32	1	67	3	2	95	3	2	95	63	4	33	93	4	3	0.6
	Sweden	96	4	0	63	17	20	57	16	27	69	22	9	64	20	16	93	5	2	1.1
	Switzerland	82	15	3	60	26	15	8	8	84	8	13	79	35	30	35	83	13	4	0.7
	Turkey	1	1	99	2	2	96	1	0	99	1	0	99	34	19	47	56	16	28	0.2
	United Kingdom	90	9	0	70	22	8	52	23	25	67	17	15	57	29	14	95	5	1	1.1
	United States	88	12	0	75	19	6	17	5	78	18	6	75	54	29	16	83	13	4	0.9
	OECD average	61	14	25	51	13	37	17	7	77	17	10	73	46	22	32	81	12	8	0.7
Partners	Albania	8	14	78	7	14	79	3	0	97	3	1	96	33	12	55	61	8	31	0.5
	Argentina	44	5	51	27	3	70	2	1	97	1	4	96	22	5	73	64	12	24	0.4
	Azerbaijan	40	22	38	61	17	22	35	6	59	13	3	84	5	6	89	20	4	76	0.3
	Brazil	17	7	76	14	8	78	8	1	91	7	1	92	14	5	80	21	6	73	0.8
	Bulgaria	93	5	2	97	2	1	66	20	14	84	12	4	73	22	5	92	7	1	1.1
	Colombia	21	5	75	21	1	78	14	0	86	13	1	86	58	5	36	87	5	8	1.0
	Croatia	90	10	0	84	11	5	1	1	98	2	1	97	26	34	40	68	23	9	0.4
	Dubai (UAE)	65	12	23	67	9	24	62	3	34	68	1	31	75	2	22	92	3	5	1.2
	Hong Kong-China	83	15	2	79	17	4	18	24	58	15	12	74	84	15	2	91	9	0	0.9
	Indonesia	29	12	59	26	11	63	20	9	70	23	11	66	83	11	5	78	14	8	1.0
	Jordan	6	1	93	4	1	95	1	1	98	2	0	98	83	1	17	70	2	28	0.4
	Kazakhstan	88	10	2	95	4	2	17	10	73	8	10	82	8	13	79	17	19	64	0.7
	Kyrgyzstan	74	14	11	68	13	19	18	4	77	13	3	84	12	7	81	19	7	74	0.6
	Latvia	94	4	2	96	4	0	10	15	75	18	25	57	62	25	12	81	16	3	0.7
	Liechtenstein	41	0	59	37	0	63	6	0	94	39	17	45	37	0	63	100	0	0	1.0
	Lithuania	96	4	0	99	1	0	11	7	81	6	8	86	25	27	48	42	29	28	0.5
	Macao-China	92	4	4	91	5	4	91	4	5	90	4	5	95	5	0	84	16	0	1.0
	Montenegro	89	11	0	82	18	0	0	5	95	10	11	78	12	21	68	65	22	13	0.3
	Panama	22	3	76	20	8	72	14	5	81	14	8	79	70	15	15	43	10	47	0.9
	Peru	38	15	47	30	9	61	22	2	76	22	2	77	60	9	31	79	6	15	1.3
	Qatar	52	3	44	54	5	41	47	3	50	47	4	50	43	4	53	52	4	44	1.2
	Romania	1	9	91	4	11	86	0	2	97	1	4	95	7	25	68	40	13	47	0.1
	Russian Federation	95	4	1	95	5	0	35	15	50	29	20	51	8	30	63	46	28	27	0.7
	Serbia	72	28	1	64	30	7	1	8	90	16	19	65	9	27	64	74	16	10	0.3
	Shanghai-China	98	2	0	99	1	0	36	5	59	43	6	51	91	2	6	98	1	1	1.1
	Singapore	14	38	48	14	24	62	4	3	93	7	17	75	49	22	29	91	8	1	0.6
	Chinese Taipei	73	13	14	74	14	12	18	7	75	23	7	70	50	13	37	78	8	14	1.0
	Thailand	30	20	50	59	12	28	29	14	56	72	24	5	70	20	10	90	7	2	1.1
	Trinidad and Tobago	17	14	69	6	4	90	2	1	96	6	5	89	46	28	26	75	12	12	0.6
	Tunisia	2	0	98	1	0	99	1	1	99	1	0	99	10	18	72	78	13	9	0.3
	Uruguay	17	5	78	13	1	86	3	1	96	2	1	96	13	12	75	49	16	35	0.6



Source: OECD, *PISA 2009 Database*, Table IV.3.5.

▪ Figure 1.8 ▪

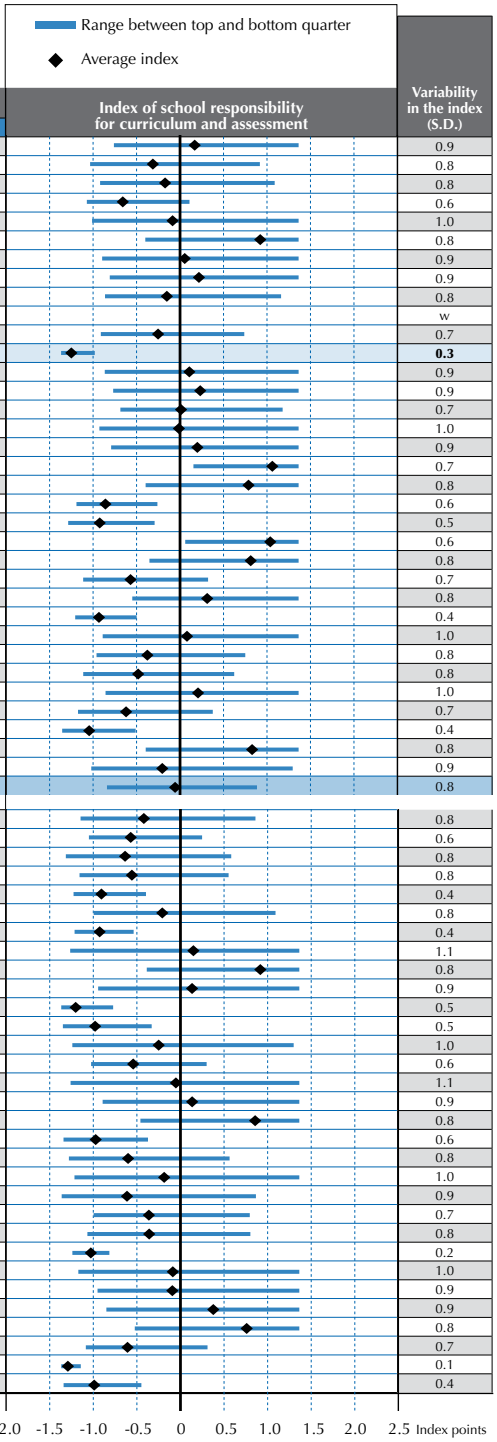
How much autonomy individual schools have over curriculum and assessment, PISA participating countries (2009)

Percentage of students in schools whose principals reported that only "principals and/or teachers", only "regional and/or national education authority" or both "principals and/or teachers" and "regional and/or national education authority" have a considerable responsibility for the following tasks.

A Establishing student assessment policies
B Choosing which textbooks are used
C Determining course content
D Deciding which courses are offered

1 Only "principals and/or teachers"
2 Both "principals and/or teachers" and "regional and/or national education authority"
3 Only "regional and/or national education authority"

	A			B			C			D			Variability in the index (S.D.)
	1	2	3	1	2	3	1	2	3	1	2	3	
OECD													
Australia	65	33	2	92	8	0	46	40	14	75	24	1	0.9
Austria	57	27	15	94	5	1	37	40	23	32	40	29	0.8
Belgium	78	19	4	94	4	1	32	42	26	40	46	13	0.8
Canada	28	62	10	40	49	11	12	51	38	44	54	3	0.6
Chile	72	21	6	73	20	7	43	22	35	64	20	16	1.0
Czech Republic	95	5	0	89	11	1	83	16	1	88	11	1	0.8
Denmark	61	28	11	100	0	0	56	32	12	47	39	14	0.9
Estonia	63	33	3	66	32	2	66	30	4	79	20	2	0.9
Finland	50	43	7	98	2	0	32	52	16	55	39	6	0.8
France	w	w	w	w	w	w	w	w	w	w	w	w	w
Germany	71	21	9	84	13	3	21	47	32	80	18	2	0.7
Greece	**20**	**12**	**68**	**7**	**8**	**85**	**1**	**3**	**96**	**6**	**5**	**88**	**0.3**
Hungary	94	6	0	98	2	0	49	36	15	43	28	29	0.9
Iceland	92	8	1	93	4	3	61	26	13	48	42	10	0.9
Ireland	87	13	0	97	3	0	29	37	34	78	21	1	0.7
Israel	80	20	0	53	43	4	52	44	5	44	50	6	1.0
Italy	91	8	1	99	1	0	59	27	14	49	25	27	0.9
Japan	98	2	0	89	8	3	93	6	1	94	5	2	0.7
Korea	92	6	2	96	4	0	89	8	2	79	17	4	0.8
Luxembourg	9	33	58	13	80	7	9	72	20	18	61	21	0.6
Mexico	56	15	29	63	11	26	14	7	79	5	5	91	0.5
Netherlands	99	1	0	100	0	0	87	12	1	89	10	1	0.6
New Zealand	81	17	2	99	1	0	79	20	1	92	8	0	0.8
Norway	38	36	27	97	2	1	30	40	30	23	33	44	0.7
Poland	92	8	0	92	8	0	93	7	0	40	31	29	0.8
Portugal	35	37	28	98	2	0	5	3	92	10	5	86	0.4
Slovak Republic	76	21	3	56	39	5	48	47	5	52	48	1	1.0
Slovenia	46	48	5	72	27	1	34	59	6	28	52	20	0.8
Spain	44	34	23	95	5	0	32	31	37	30	31	39	0.8
Sweden	66	30	3	99	1	0	66	26	8	53	25	22	1.0
Switzerland	57	27	16	40	40	20	21	41	38	24	50	27	0.7
Turkey	42	29	30	14	18	68	9	15	76	14	21	65	0.4
United Kingdom	88	12	0	98	2	0	77	20	2	86	14	0	0.8
United States	46	40	13	62	28	10	36	46	18	58	37	4	0.9
OECD average	66	23	11	78	15	8	45	31	24	50	28	21	0.8
Partners													
Albania	51	16	33	91	8	1	35	7	57	35	12	53	0.8
Argentina	74	20	6	81	16	3	28	43	29	8	30	61	0.6
Azerbaijan	54	8	38	50	6	43	27	9	64	37	5	58	0.8
Brazil	47	27	26	88	9	2	35	25	40	18	17	65	0.8
Bulgaria	25	37	38	88	12	1	10	26	65	10	15	75	0.4
Colombia	39	21	39	92	3	4	69	23	8	64	14	23	0.8
Croatia	26	36	38	63	34	3	11	50	39	2	25	72	0.4
Dubai (UAE)	77	10	13	55	17	27	62	13	26	59	16	25	1.1
Hong Kong-China	93	7	0	93	7	0	81	17	2	87	13	0	0.8
Indonesia	67	28	6	80	13	7	75	18	7	49	23	28	0.9
Jordan	27	4	70	4	1	95	7	1	93	7	1	92	0.5
Kazakhstan	31	22	47	16	14	70	11	18	71	40	22	37	0.5
Kyrgyzstan	65	8	26	68	8	23	59	10	31	44	7	49	1.0
Latvia	56	40	4	71	27	2	19	46	36	30	42	28	0.6
Liechtenstein	69	25	6	54	5	40	41	0	59	53	9	38	1.1
Lithuania	75	20	5	89	11	1	50	35	15	75	20	5	0.9
Macao-China	95	0	5	100	0	0	94	6	0	81	14	4	0.8
Montenegro	40	32	28	5	30	65	5	34	61	20	36	44	0.6
Panama	41	25	34	52	26	22	41	23	36	26	23	51	0.8
Peru	75	15	10	52	12	37	53	23	24	45	18	37	1.0
Qatar	45	18	37	37	16	47	31	9	60	35	17	48	0.9
Romania	42	36	22	86	13	1	46	33	20	31	41	29	0.7
Russian Federation	63	25	12	65	27	8	21	40	39	71	22	7	0.8
Serbia	49	44	7	19	59	23	2	41	57	0	12	87	0.2
Shanghai-China	86	9	5	49	17	34	45	22	33	52	28	20	1.0
Singapore	57	41	2	72	24	3	44	38	18	66	31	4	0.9
Chinese Taipei	74	17	8	92	8	0	81	16	3	68	25	7	0.9
Thailand	79	18	2	89	10	1	89	11	0	91	8	1	0.8
Trinidad and Tobago	50	45	5	29	62	10	21	40	39	34	51	15	0.7
Tunisia	11	11	78	0	1	99	3	14	83	4	9	87	0.1
Uruguay	23	30	47	31	36	33	3	26	71	21	19	59	0.4



Source: OECD, *PISA 2009 Database*, Table IV.3.6.

Observations on current reforms

Optimisation of teacher workload and allocation

Among the steps to increase the efficiency of the education system, Greece should narrow the significant gap in workloads between their teachers and those in most other EU and OECD countries. Based on the analysis in Figure 1.3 comparing annual workloads in Greece with OECD and EU19 averages, Greece would need to increase weekly teaching obligations approximately by four to five hours per week to reach the OECD average. Tables 1.6 and 1.7 illustrate an alternative that would establish a target of reaching the OECD and EU averages. The changes would focus on increasing the workloads of the most experienced and best prepared teachers at the primary and secondary levels.

Table 1.6 Proposed target for teaching hours per week in primary education

	Target for primary education							
	Teachers in 4-post+ schools			Teachers in 1-post, 2-post and 3-post schools	Head Teachers in 4-post and 5-post schools	Head Teachers in 6-post to 9-post schools	Head Teachers in 10-post to 11-post schools	Head Teachers in 12-post+ schools
Years in service	Current teaching hours	New teaching hours	Increase	Teaching hours	Teaching hours	Teaching hours	Teaching hours	Teaching hours
0-10	24	**25**	**+1**	25	20	12	10	8
11-15	23	**25**	**+2**	25	20	12	10	8
16-20	22	**25**	**+3**	25	20	12	10	8
20+	21	**25**	**+4**	25	20	12	10	8

Source: OECD.

Table 1.7 Proposed target for teaching hours per week in lower and upper secondary education

	Target for lower and upper secondary education						
	Teachers with University degrees			Head Teachers in schools of 3-5 classes	Head Teachers in schools of 6-9 classes	Head Teachers in schools of 10-12 classes	Head Teachers in schools of 12+ classes
Years in service	Current teaching hours	New teaching hours	Increase	Teaching hours	Teaching hours	Teaching hours	Teaching hours
0-6	21	**22**	**+1**	8	7	5	3
7-12	19	**22**	**+3**	8	7	5	3
13-20	18	**22**	**+4**	8	7	5	3
20+	16	**22**	**+6**	6	5	3	1

Source: OECD.

Teacher selection and placement to schools

Successful enterprises often report that personnel selection is the most important set of decisions that they make. In Greece, the evidence suggests that all too often the teacher-selection process follows rules about qualifications and seniority that bear little relationship to the qualities needed to be an effective teacher. The sheer size of the school system means that the process of teacher selection is often highly impersonal, and it is hard for teachers to build a sense of commitment to the schools where they are appointed – or for the schools to build a sense of commitment to them. Broader selection processes, typically including interviews, preparation of lesson plans, and demonstration of teaching skills, would give greater weight to those characteristics that are more directly related to the quality of teaching and learning than the traditional emphases on qualifications and years of experience.

Moreover, the current processes for selection and placement of teachers in Greece are centrally controlled, and provide for only limited responsibility at other levels of the system. School directors identify vacant posts foreseen in the following year up to 31 August resulting from teachers' expected retirement or resignation from service (May 2010 Law). These requests can then be verified at the regional level and the regional directors make recommendations to the Ministry. The accuracy of these recommendations has recently been improved though a new electronic data system.

These vacancies are then published and prospective teachers are invited to submit their preferences. Their appointment is based on the rank applicants hold in the list derived from their grades in a competitive exam, plus other points they might get for a variety of reasons, and their preferences. Then they are sent to the corresponding prefecture directorates (the units between the school and the region in the new organisational structure described later in this report), and these directorates make the school placement.

The OECD report *Teachers Matter* (OECD, 2005) emphasises that for improving student learning, schools should be given a greater role in teacher selection. It also points out that such an approach works best where parallel steps are taken to ensure that efficiency and equity are not jeopardised. Such steps include: developing school directors' skills in personnel management; providing disadvantaged schools with greater resources with which to recruit effective teachers; and improving information flows and monitoring the teacher labour market. "Successful decentralisation of personnel management (and school decision-making more generally) requires that central and regional authorities play a strong role in ensuring an adequate and equitable distribution of teacher resources throughout the country" (OECD, 2005, p.163).

Given the large number of teachers and applicants involved in the Greek school system, it may be difficult and costly for schools to use extensive information when selecting candidates. It can be just as difficult for candidates for teaching positions to have precise information about the schools to which they apply, or even about broad trends in the labour market and the available vacancies. Such information gaps and limitations mean that many application and selection decisions are sub-optimal. The development of transparent and timely systems to close the information gaps between teachers and schools will be essential for an effectively functioning teacher labour market, especially where schools are more directly involved in teacher recruitment and selection. Some countries require all teaching vacancies to be posted, and create websites where the information is centralised or establish a network of agencies to co-ordinate and foster recruitment activities. Since imbalances in the teacher labour market can take a long time to be rectified, tools for monitoring and projecting teacher demand and supply under different scenarios can also help.

Professional development of teachers

The development of teachers beyond their initial education is an essential component of human resource development and can serve a range of purposes, including to:

- update individuals' knowledge of a subject in light of recent advances in the area;
- modernise individuals' skills and approaches in light of the development of new teaching techniques and objectives, new circumstances, and new educational research;
- enable individuals to apply changes made to curricula or other aspects of teaching practice;
- assist schools in developing and applying new strategies concerning the curriculum and other aspects of teaching practice;
- exchange information and expertise among teachers and others, e.g. academics and industrialists; and
- help weaker teachers become more effective.

While this large-scale professional development effort currently underway is impressive, several critical points could strengthen the professional development efforts (see Box 1.1).

Box 1.1 **Lessons from Portugal**

For more than twenty years, Portugal invested heavily in in-service teacher training, using substantial resources from the European Union structural funds for that purpose. However, the positive impact of such a huge investment on teaching quality and student achievement was hardly noticeable.

Statutory rules requested teachers to take part in at least 25 hours of accredited training per year, but the system gave them full autonomy to choose whatever they wanted to attend. Teacher training became a business for trainers and training institutions and an end in itself without any connection with schools' actual needs.

More recently, in the framework of the "full-time" program for primary schools, the Ministry of Education, with the support of some institutions providing initial teacher training, designed and implemented an in-service training programme for teachers in three main subjects: Mathematics, the Portuguese language and the experimental teaching of science. This programme represented, in both design and implementation, an absolute departure from the previous training model.

First it was based on common content and training objectives – targeting classroom competencies – especially designed by education colleges and university departments, which also provided the outside trainers and supervised the programme implementation on a regional basis. Second, it took the school and the classroom as its focus. Schools developed a small resident training structure with focal teachers, who were the first to be trained and became responsible for replicating and disseminating the training in the school. Still, education colleges and university departments kept a role in monitoring and supervising the way the programme was carried out.

This programme engaged a significant share of primary teachers and the first assessment of its impact seems very encouraging. Its focus on the school and classroom are most likely the key to its success.

Source: Mathews, P., et al., (2009), pp. 63-69.

Professional development needs to reflect changes in the role and functioning of schools – and changes in what is expected of teachers. Greek teachers are asked to teach in increasingly multicultural classrooms. Teachers must place greater emphasis on integrating students with special learning needs, both special difficulties and special talents, in their classes. They need to make more effective use of information and communication technologies for teaching. They are required to engage more in planning within evaluative and accountability frameworks. They are also asked to do more to involve parents in schools. No matter how

good the pre-service education for teachers is, it cannot be expected to prepare teachers for all the challenges they will face throughout their careers.

There are several aspects that will be central to successfully bridging the gap between the ideal learning environment and day-to-day practice:

- Well-structured and -resourced induction programmes can support new teachers in their transition to full teaching responsibilities before they obtain all the rights and responsibilities of full-time professional teachers. In some countries, once teachers have completed their pre-service education and begun their teaching, they begin one or two years of heavily supervised teaching. During this period, the beginning teacher typically receives a reduced workload, mentoring by master teachers, and continued formal instruction.
- Effective professional development needs to be ongoing, include training, practice and feedback, and provide adequate time and follow-up support. Successful programmes involve teachers in learning activities that are similar to those they will use with their students, and encourage the development of teachers' learning communities.
- Teacher development needs to be linked with wider goals of school and system development, and with appraisal and feedback practices and school evaluation.
- There is often a need to re-examine structures and practices that inhibit inter-disciplinary practice and to give more room for teachers to take time to learn deeply, and employ inquiry and group-based approaches, especially in the core areas of curriculum and assessment.

Greece needs to pay attention to the linkages between the approach to its professional development and its employment models. The model for teacher employment in Greece is "career-based" public service, in which entry is competitive, career development is extensively regulated and lifetime employment is largely guaranteed. In a situation where teachers are not commonly removed for unsatisfactory performance, the quality of teachers depends mainly on setting high standards for entering teacher-preparation programmes, on the quality of their initial preparation, and on the attention given to the quality of their preparation following their initial induction. Under such career-based systems, the risk is that the quality of the teaching force depends excessively on getting initial recruitment and teacher education right, and that any improvement over time will take many years to affect most serving teachers. Moreover, career advancement can become heavily dependent on adhering to organisational norms, which helps to ensure uniformity and predictability of service and a strong group ethos, but can make systems inflexible to change and ill-equipped to serve diverse needs in different settings.

While some may consider security of employment as an incentive to become a teacher, there may not be sufficient incentives or support systems for all teachers to continuously review their skills and improve their practice, especially where there are only limited mechanisms for teacher appraisal and accountability. Tenured employment can also make it difficult to adjust teacher numbers when enrolments decline or curricula change, and may mean that the burden of adjustment falls on those who lack tenure, commonly those near the beginning of their careers. Greece should consider requiring teachers to renew their teacher certificates after a period of time, and to demonstrate that they have participated in ongoing professional development and coursework to increase, deepen, and strengthen their knowledge. The basis for renewal can be as simple as an attestation that the teacher is continuing to meet standards of performance that are agreed throughout the teaching profession. Such systems must ensure an open, fair and transparent system of teacher appraisal, involving teaching peers, school leaders and external experts who are properly trained and resourced for these tasks – and who are themselves evaluated on a regular basis. Underpinning these models is the view that the interests of students will be better served where teachers achieve employment security by continuing to do a good job, rather than by regulation that effectively guarantees their employment. Periodic reviews are also an opportunity to recognise and acknowledge quality teaching. Some countries have fair but speedy mechanisms to address ineffective teaching. Teachers in these countries have the opportunity and support to improve but, if they do not, they can be moved either into other roles or out of the school system (OECD, 2005).

Professional development should also be more systematically linked with the roll-out and implementation of major reforms (see Box I.2). The focus of the large-scale professional development project is on preparing teachers for the new curriculum in the context of the "New School" initiative. At present, the training is targeted primarily at individuals and fails to:

- provide training for teams from schools (e.g. several teachers, the school director, school advisors, etc.). The chances that teachers will be able to adapt knowledge and skills gained in the training are likely to increase if there is a support network when they return to their schools;
- link with and support other initiatives, such as the roll-out of full-day primary schools; and
- provide training and support for schools that have recently been merged or consolidated.

Greece should complement the centrally led approach to professional development with a more local, decentralised, approach, based on the articulation of school needs, preceded by the evaluation and examination, at school level, of those needs and of the

ways to meet them. There needs to be a more deliberate link with the results of the Self-Evaluation Pilot project (see the section on Assessment and Evaluation). Needs are contextual and schools and students are diverse. Diversity is probably the greatest challenge that Greek schools and teachers have to meet, and so training solutions must be set in the right framework to address this challenge. Therefore, in-service teacher training should be based on school training plans. The impact of in-service training may be greater when developed as much as possible within the framework in which teachers usually perform their jobs. As much as possible, trainers should be brought to the school and should interact with teachers through a resident training structure, to be established in each school, that will take up the day-to-day development and implementation of the training plan. School support networks, alluded to above, involving school advisors, training centres and university departments, could assist the schools in designing and implementing such plans.

Funding should be allocated to school units or school clusters to ensure that training is accessible to all teachers. Training priorities can be aligned with the Ministry of Education's priorities in terms of implementing elements of the "New School" initiative such as the extension of the Self-Evaluation Pilot to all schools and implementation of New School Administration reforms (see section on Governance and Management) that call for fundamentally different roles and responsibilities for school directors, deputy directors, and teachers' councils.

Greece should use the trainers (e.g. category "B" trainers in the large-scale professional development programme now being implemented) to build the capacity for ongoing professional development at the prefecture/department level and at the level of school clusters. It should also provide special training, retraining and upgrading programmes with a view to preparing teachers engaging in pedagogical management roles (middle school leadership) and enabling redundant teachers to gain new qualifications to teach in other types of schools or to take on high-demand subject areas.

Box 1.2 **Teacher professional development in the Flemish community of Belgium**

The Parliament lays down the core curriculum for pre-primary education, compulsory school education and initial teacher training. Final objectives for mainstream primary and secondary education (i.e. for general subjects) are minimum objectives which Parliament considers necessary and attainable for pupils. These objectives consist of knowledge, skills and attitudes. The final objectives are a minimum as policymakers want to leave enough space for creative input from school teams and groups of schools. Some groups of pupils need not attain the final objectives. For pupils in pre-primary, special education and pre-vocational secondary education developmental objectives have also been laid down by parliament. Teachers must develop these objectives with their pupils but they are not required to attain them. Cross-curricular objectives learning to learn, environmental awareness, citizenship, etc. have also been incorporated into the core curriculum.

Flemish parliament wants teachers who are qualified to teach the core curriculum. That is why it has laid down a professional profile for experienced teachers in pre-primary, primary and secondary education. Teachers should attain that profile after several years of practice and professional development. Obviously, teacher training graduates should not achieve that status. That is why basic competences have been drawn from the professional profile as the core curriculum for teacher training institutions, whether universities or university colleges.

The professional profile has been designed so as to match the demands and challenges of the core curriculum of pre-primary and compulsory school education. Graduates from initial teacher training should have the skills, competences and attitudes to teach this curriculum. But only after a few years of practice and in-service-training will they have the skills, competences and attitudes of the professional profile. Ideally, the core curriculum of initial teacher training is perfectly aligned with the core curriculum of pre-primary and compulsory school education.

All teachers and school directors in pre-primary and compulsory school education have job descriptions: the *raîson d'être* of the job, result areas, skills, competences and attitudes. Developing a job description is a cooperative effort by teachers and school directors for the former and by school directors and the school boards for the latter. Teachers and school directors are evaluated every four years by somebody who is their superior, never by a peer. Teachers can be evaluated by the school director, a deputy school director or a workplace manager for VET teachers; school directors are evaluated by the school boards. The job descriptions are used as benchmarks to see whether teachers and school directors have achieved their objectives. The basic aim of these evaluations is to help teachers and school directors improve and do a better job by identifying strengths and weaknesses. Professional development activities will contribute to fill any gaps in their performances. Every evaluation is concluded by a narrative conclusion. Two successive evaluations or three negative evaluation during the career lead to dismissal.

Strengthening school leadership

The OECD report, *Improving School Leadership* (OECD, 2008a), underlines the critical role of school directors in schools that have the most positive impact on student learning. Key findings include:

- Policy makers and practitioners need to ensure that the roles and responsibilities associated with improved learning outcomes are at the core of school leadership practice. The study identifies four major domains of responsibility as key for school leadership to improve student outcomes:
  - *supporting, evaluating and developing teacher quality:* School leaders have to be able to adapt the teaching programme to local needs, promote teamwork among teachers and engage in teacher monitoring, evaluation and professional development.
  - *goal-setting, assessment and accountability:* Policy makers need to ensure that school leaders have discretion in setting strategic direction and optimise their capacity to develop school plans and goals and monitor progress, using data to improve practice.
  - *strategic financial and human resource management*: Policy makers can enhance the financial management skills of school leadership teams by providing training to school leaders, establishing the role of a financial manager within the leadership team, or providing financial support services to schools. *In addition, school leaders should be able to influence teacher recruitment decisions to improve the match between candidates and their school's needs* (emphasis added).
  - *collaborating with other schools:* This new leadership dimension needs to be recognised as a specific role for school leaders. It can bring benefits to school systems as a whole rather than just to the students of a single school. But school leaders need to develop their skills to become involved in matters beyond their school borders (OECD, 2008a, p. 10).

The intent of the "New School" reforms, including the recently announced restructuring of education administration (described in the section of this report on Governance and Management), goes some way towards enhancing the role of school directors in ways that are consistent with the OECD report (OECD 2008a). Nevertheless, the reforms do not go far enough in giving school directors the authority and responsibility "to influence teacher recruitment decisions to improve the match between candidates and their school's needs" (OECD, 2008a, p. 10). While beyond the specific focus of this report on improving efficiency, the role of school directors in Greece also remains limited in the critical area of "supporting, evaluating and developing teacher quality".

Many countries that have strengthened the role of school leaders in human resource management have at the same time retained centralised control of the overall civil service parameters of human resource policy to ensure compliance with basic standards of quality, ensure equity and fairness. Therefore, the OECD recognises that Greece must maintain similar overall controls, consistent with laws and policies on employment in the public sector.

Training of school leaders to assume increased responsibilities must be a priority (see Boxes 1.3 and 1.4). School leaders must be empowered with the legitimacy and authority that will allow them to actually lead their schools. Legitimacy may come in part from the way in which they are appointed, and the participation of the whole school community (local authorities, the local civil

Box 1.3 **Study of training needs of school directors**

The Pedagogic Institute conducted a recent (October 2010) training needs analysis of 3 435 school directors (i.e. 24% of total) of primary and secondary institutions, and of all subject specialisations. The following is a summary of the results: (1) The majority of school directors are men over 41 years old, with many years of teaching experience. (2) Secondary school directors are more equipped than primary school directors. (3) Most school directors say that their school is not appropriate for a training centre. (4) 49.7% have only a first degree and 13 % have a Masters' degree. (5) 68% self-declare that their knowledge of ICT is Good, Very Good and Excellent. (6) With regards to their participation in professional development programmes in the past, they express their dissatisfaction about its Content (62.7%), Organisation (56.65%) and Methodology (60%). (7) Thematic areas that they consider (from a closed list) as most important to address in their professional development are: modern educational approaches, use of new technologies, subject-specific educational methodology, classroom problem management, development of positive relationships with pupils and parents, and at the bottom of the list: intercultural education, counselling and career counselling, and self-evaluation of school unit. (8) The thematic unit they suggested themselves in an open question was "Administration and Educational policy". (9) Most important incentives for participation in professional development (from a closed list) are: financial remuneration, training should take place in the morning (during curriculum time) and teachers should have leave to attend, and theory linked with practice. (10) The incentive they suggested themselves in an open question was: "suitable-experience trainers".

Source: *www.mpratis.gr/11/epi2.pdf*

Box 1.4 **Distributed school leadership from the OECD's *Improving School Leadership***

Effective school leadership is not exclusive to formal offices or positions; instead it should be distributed across a number of individuals in a school. Principals, managers, academic leaders, department chairs, and teachers can contribute as leaders to the goal of learning-centred schooling. The precise distribution of these leadership contributions can vary. Such aspects as governance and management structure, amount of autonomy afforded at the school level, accountability prescriptions, school size and complexity, and levels of student performance can shape the kinds and patterns of school leadership. Thus principals must not only be managers but also leaders of the school as a learning organisation. They interact with teachers to create a productive, cohesive learning community.

Source: OECD, 2008a.

society, parents, teachers, other staff, and even students in upper secondary education) may prove important to achieving this goal. But legitimacy, as well as authority, also comes from recognised competence. Therefore, for reasons of legitimacy and authority, but also for reasons of efficiency and effectiveness, the training of school leaders should be swiftly prepared. Full priority, in terms of training, should be given to the training programme of school leaders.

The training programme of school leaders should promote their ownership of the education reform. The principles of the "New School" should therefore be a major inspiration for such a programme. However, the focus must be targeted at the acquisition of practical managerial competences, as far as pedagogic and resource administration, and personnel management are concerned. Methods for dealing with the problems of student diversity and a multi-ethnic school, for selecting the best possible teachers, for eliciting the best performance from the staff (through evaluation, training and motivation and improvement strategies) and for efficient resource management must be at the core of the training programme. The programme must also envisage subsequent in-service training activities.

Consolidation of school units into clusters, as recommended in the following section, and the suppression of most layers in the regional administration of the Ministry should allow the allocation of some staff to school clusters. These staff members would carry out some supporting administrative and bureaucratic tasks, so that the school leaders may actually concentrate on pedagogic management. They could also provide some technical advice on specific information-management issues.

To support school leaders, a new role (and new recruitment criteria) should be conferred to school advisors. School advisors should become part of a support network, which could also incorporate education science or pedagogic university departments. School leaders could seek assistance in solving problems from such a network. This network could also be involved in developing school plans for teacher training. School advisors should be recruited on the basis of their competence for handling this job and not on other criteria, however objective and relevant for developing a teaching career they may be.

Summary of recommendations

Short term

- Increase teachers' workloads to the EU and OECD averages by 2015. Focus on increasing the workloads of the most experienced teachers. Implement increases in workloads on a step-by-step basis in the context of the implementation of "New School" reforms and consolidation of the school network. Avoid one-size-fits-all applications, but implement changes in the context of other reforms.
- Make professional development of school directors and directors of newly formed school clusters a central priority. School leaders must be empowered with the legitimacy and authority to actually lead their schools.
- Focus professional development of school directors on developing skills in personnel management, providing disadvantaged schools with greater resources with which to recruit effective teachers, and improving information flows and monitoring the labour market for teachers. Link professional development systematically with the roll-out and implementation of major reforms. Give more emphasis to:
  - training for teams from schools (e.g. several teachers, the school director, school advisors, etc.). The chances that teachers will be able to adapt knowledge and skills gained in the training are likely to increase if there is a support network when they return to their schools;
  - linking with and supporting other initiatives, such as the roll-out of full-day primary schools; and
  - training and support for schools that have recently been merged or consolidated.
- Complement the centrally-led approach to professional development with a more local, decentralised, approach, based on the articulation of school needs, preceded by the evaluation and examination, at school level, of those needs and of the ways to meet them.

- Link the development of school professional development plans with the results of the Self-Evaluation Pilot project (see the section on Assessment and Evaluation).
- Develop school support networks at the directorate and regional levels, involving school advisors, training centres and university departments, to assist the schools in designing and implementing professional development plans. Use trainers in the current large scale professional development initiative (e.g. category "B" trainers) to build the capacity for ongoing professional development at the prefecture/department level and at the level of school clusters.

Medium term

- Allocate funding to school units or school clusters to assist in development of professional development plans and to ensure that training is accessible to all teachers.
- Provide training for school advisors to support school directors in assuming broader responsibilities as instructional leaders, school self-evaluation, development of professional development plans, and other tasks.
- Improve information flows and monitor the teacher labour market.
  - Post all teaching vacancies at the region level.
  - Create websites where the information is centralised.
  - Use tools for monitoring and projecting teacher demand and supply under different scenarios.

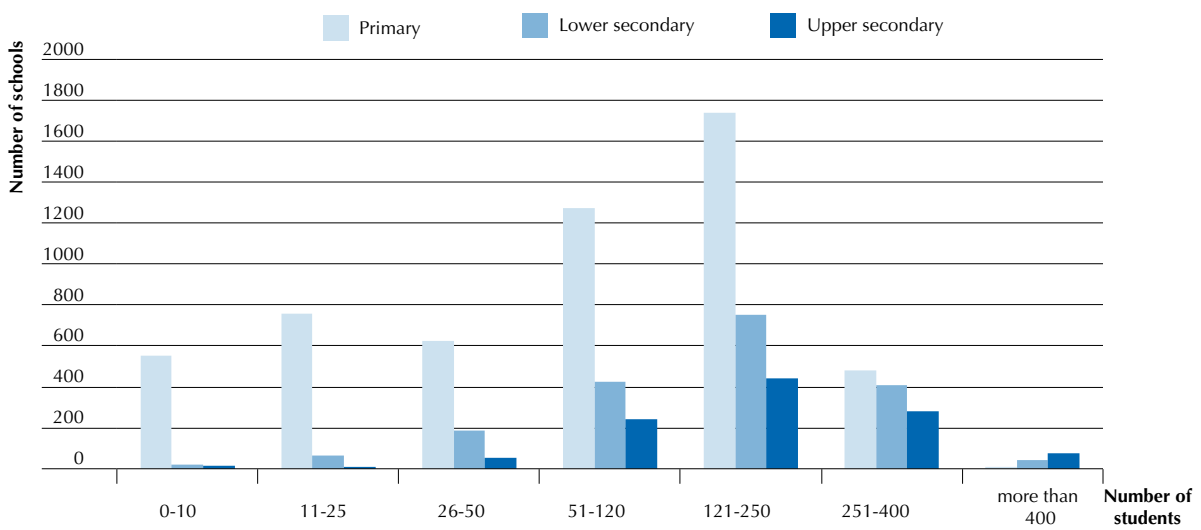
RATIONALISATION OF THE SCHOOL NETWORK

Inefficient network of small schools, low number of students per teacher, and small class size

Greece is a country of small schools. More than 1 300 primary schools have fewer than 25 pupils and more than 250 lower secondary schools and 70 upper secondary schools have fewer than 50 students. Few schools enrol more than 400 students, and these schools are mainly at the upper secondary level (Figures 1.9 through 1.16b).

▪ Figure 1.9 ▪

Number of general education schools, by level and school size (2010)

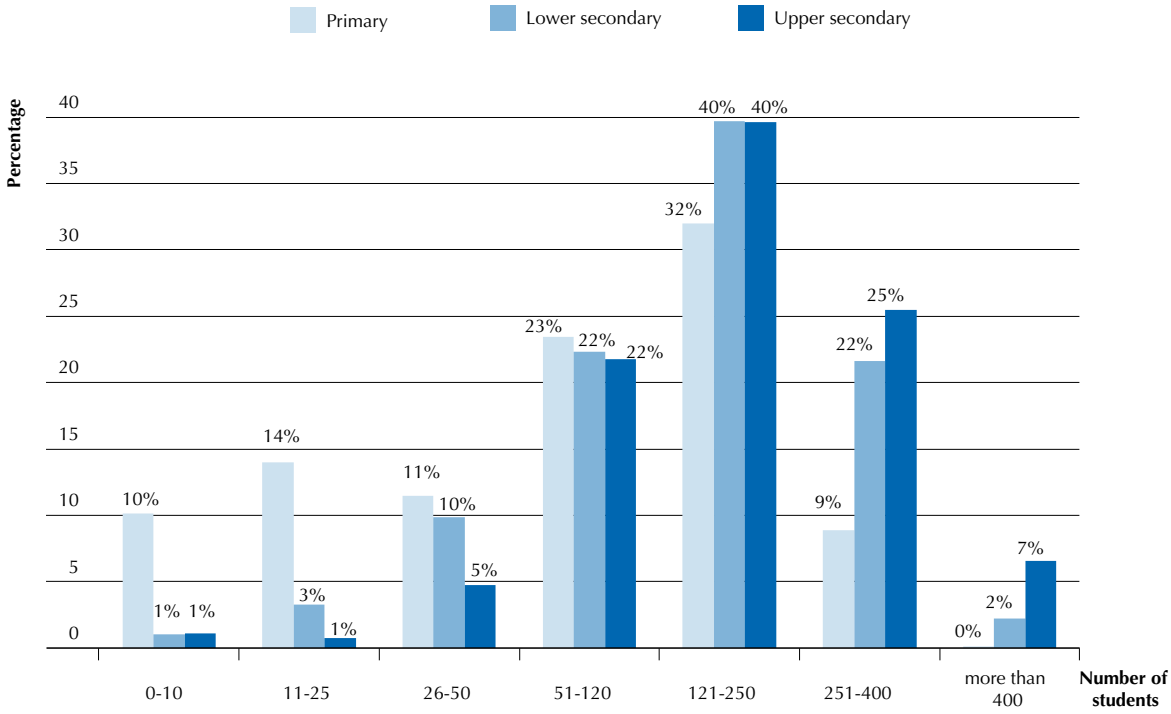


Note: Only eight primary schools in Greece have more than 400 students.
Source: Ministry of Education, Lifelong Learning and Religious Affairs.

The geographic diversity of Greece presents major challenges in any effort to improve the efficiency and effectiveness of the school network. For example, more than half (54%) of Greek primary school students are in two regions: 34% in Attica, concentrated in the city of Athens, and 20% in Central Macedonia, concentrated in the city of Thessaloniki (Figure 1.11). The remainder of the primary school population is dispersed across thousands of communities (now organised into 325 prefectures). Greece encompasses one of the most mountainous regions in Europe. Only 227 of the thousands of islands are populated, and only 78 of those hold more than 100 people. Even in the populous regions of Attica and Central Macedonia, there are many small schools in isolated mountainous areas or on islands.

▪ Figure 1.10 ▪

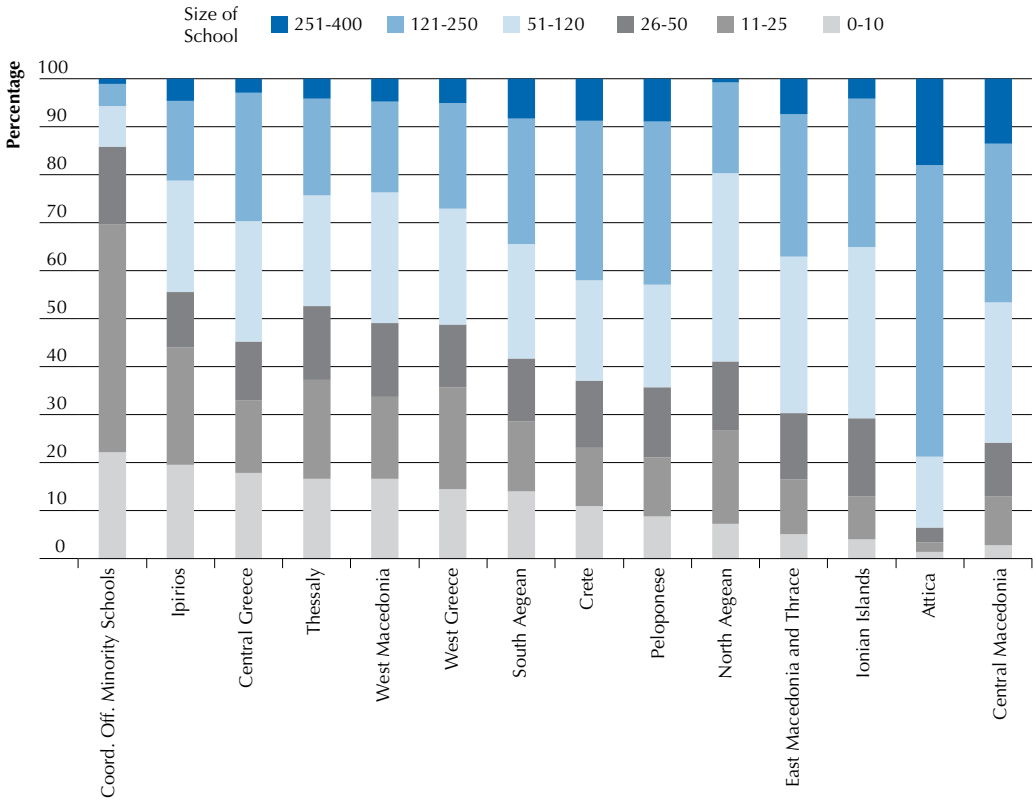
Percentage of general education schools, by level and school size (2010)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 1.11 ▪

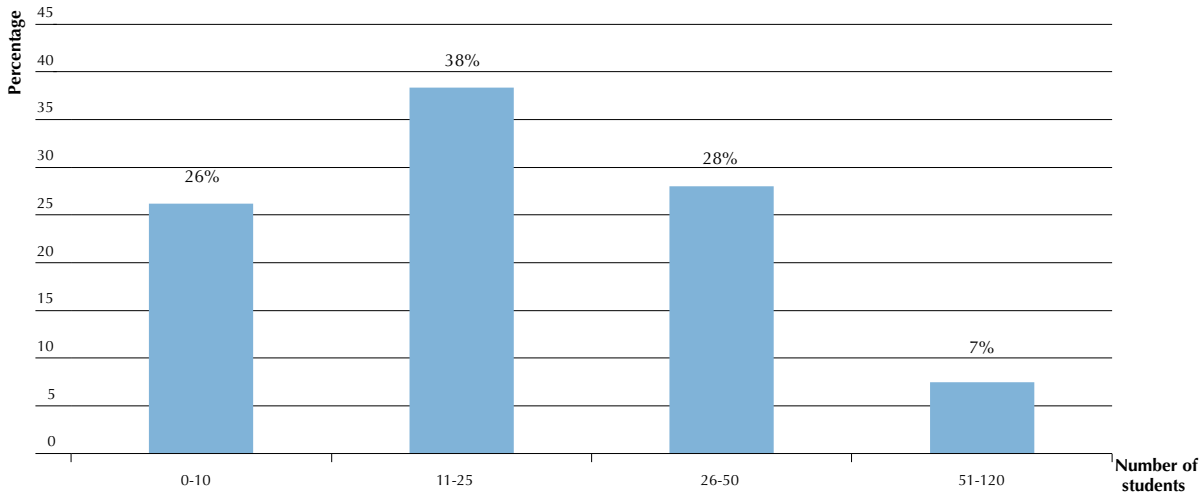
Percentage of primary schools, by size and region (2010)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 1.12 ▪

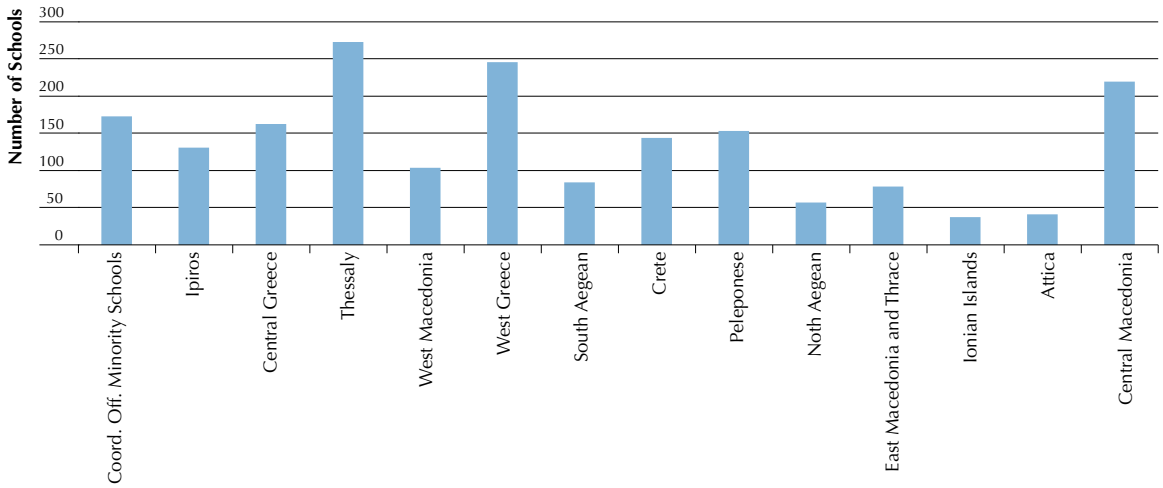
Distribution of multi-grade primary schools, by size (2010)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 1.13 ▪

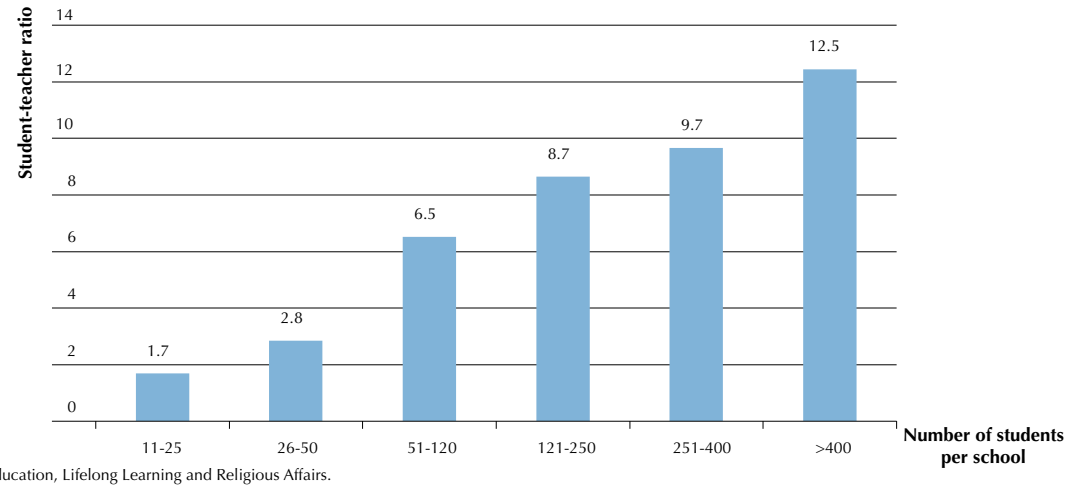
Regional distribution of multi-grade primary schools (1902 schools, 2010)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 1.14 ▪

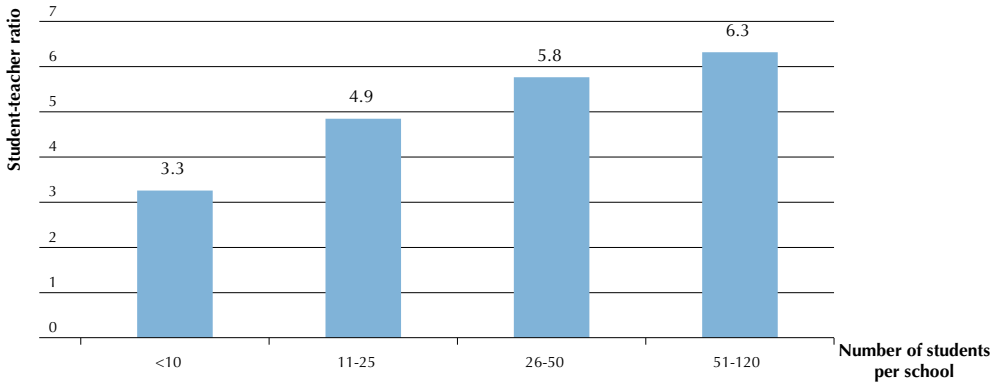
Student-teacher ratios in primary schools with more than six teacher posts (2010)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 1.15 ▪

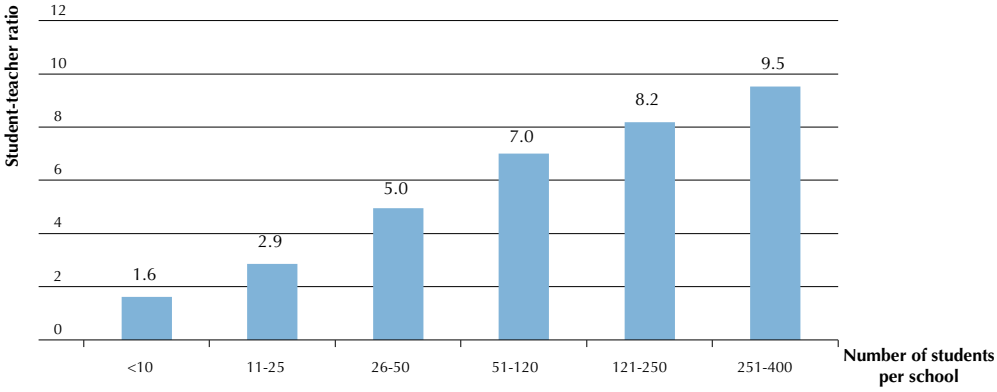
Student-teacher ratios in multi-grade primary schools with six or fewer teacher posts (2010)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 1.16a ▪

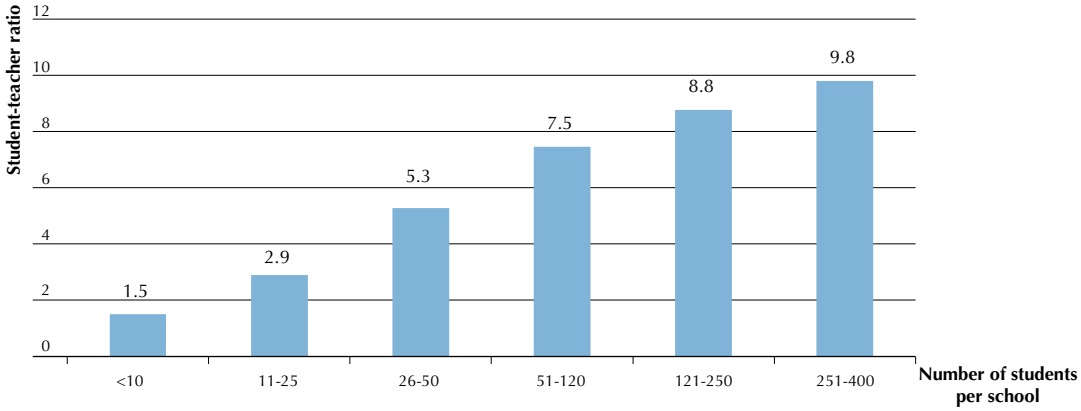
Student-teacher ratios in lower secondary schools (2010)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 1.16b ▪

Student-teacher ratios in general upper secondary schools (2010)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

Current reforms

In January 2011, the Minister announced a public consultation on the criteria for consolidating school units for the school year 2011/12, "to make changes to the quality of the education and reducing waste, making use of existing infrastructure for the implementation of innovative methods of instruction for all pupils of territories and the facilitation of teachers to provide quality educational services" (Hellenic Republic, Ministry of Education, 19 January 2011). The Ministry undertook this process under the authority of an existing law (Law 1566/85). Although the legal authority for school consolidation and mergers has existed for some time, the authority had not been used extensively until this year. The intent is to conduct a school mapping exercise every year. The *Kallikratis* changes in the general administrative regional structure (described earlier) gave an additional impetus for changes because the new, bigger municipalities, under the authority of the Ministry of Interior, have responsibility for school facilities, transportation and certain other non-educational functions of schools, and the new, fully self-governed regions have increased responsibilities for their schools.

The Ministry emphasised that it was merging or consolidating schools for educational (pedagogical) reasons, not primarily for economic/efficiency reasons. As outlined in the consultation document, the objectives were:

- at the primary level, to establish robust schools that will have the possibility, and the required physical infrastructure, to support innovative activities undertaken under the "New School" initiative;
- at the secondary level, to establish schools with the laboratory infrastructure, adequate teaching staff, and minimum number of students necessary to operate all the planned specifications and guidelines of the "New Upper Secondary School" to be introduced beginning in September 2011; and
- along with the pedagogical reasons, to consolidate and rationalise use of existing educational resources, and to address the problem of unequal availability of educational opportunities because of multiple and fragmented multi-grade schools that are unable to provide the anticipated and required quality of education.

Box 1.5 **All-day schools**

The goal of the Ministry of Education is that all primary education schools will become all-day schools with a unified educational programme. In the 2010/11 school year, the Ministry implemented the new model in 801 pilot schools, enrolling approximately 30% of the primary school students and distributed throughout Greece according to the student population of each region. The pilot school programme (co-financed by EU Structural Funds) included:

- expansion of the compulsory school duration
- introduction of the teaching of English Language in the 1st and 2nd grade
- introduction of Information and Communication Technologies (ICT)
- introduction of Aesthetic Education (art, music and theatre)
- introduction of cultural activities groups
- enhancement of the "flexible zone" for interdisciplinary and creative activities

All the above is now available to all students during the morning programme. In some places, they are available to students who attend the optional afternoon programme.

Specifications for the school-mapping exercise were:

- The number of pupils per class should not exceed the legal requirements of a maximum of 25 in primary, and up to 25 +10% in secondary education.
- The goal is to have schools with 12 classes (posts) (e.g. 12 classes with a maximum of 25, for 300 students at the primary level).
- The consolidations should not lead to oversized schools. The total number of pupils in merged schools should not exceed 400 children. There are a few cases where schools resulting from mergers will have more than 400 students, but none exceed 500.
- The process should take into consideration factors such as demographic trends, length of travel distances and travel conditions if students were to attend consolidated schools.

While the goal was school units with 12 posts, in some cases, particularly in mountainous regions and on small islands, schools with six or fewer posts were necessary. Consolidation of multi-grade schools in isolated areas was to occur only where conditions permitted (Hellenic Republic, Ministry of Education, 19 January 2011).

The mapping process was the responsibility of the 13 regional directors in consultation with municipal authorities. The regional directors made recommendations to the Ministry where the final decisions were taken. Discussions among the OECD team and several regional directors revealed that most had begun talks about the need to consider closing or consolidating small, low-enrolment schools at least two months earlier with regional stakeholders (teachers and school leaders, parents, community leaders, and mayors of the new municipalities established through the *Kallikratis* changes).

Although this is a difficult and often contentious process, the regional directors reported that there was general acceptance of the realities that required changes. In January and February 2011, the reactions of teachers unions were far more vociferous, with public demonstrations culminating in a strike in late February. The unions obviously were concerned about the potential loss of jobs. They dismissed the Minister's claims that the changes were primarily for pedagogical reasons and saw them more as another example of the changes being forced on Greece by the "Memorandum" – the tripartite agreement between Greece and the EU, the European Central Bank and IMF.

Results of the consolidation process, announced by the Ministry in early March, were:

- 1 933 schools were consolidated to form 877 schools;
- at the primary school level, 1 523 schools were consolidated into 672 schools. Among the schools that were merged or closed: 169 were one-, two- and three-post schools; 98 had already closed; and 18 had no students enrolled. The consolidation of primary schools resulted in 120 new schools with six posts and 61 schools with 12 posts; and
- at the secondary level, 410 school units were consolidated into 205 schools. Among the schools that were merged or closed, 30% had fewer than 35 potential students.

The changes resulted in a net reduction of approximately 2 000 positions, 75% at the kindergarten and primary levels and the remainder at the secondary level. In many cases, redundant teachers were reassigned to consolidated schools. In several cases, redundant secondary teachers of specific subjects, such as English, ICT and music, were reassigned to primary schools.

Observations on the reforms

Greece must continue to prioritise the school network to make possible both improved educational outcomes and significantly improved efficiency in the delivery of educational services (Boxes 1.6 and 1.7 and Table 1.8). The Ministry must make school mapping and rationalisation an ongoing core planning responsibility in each of the 13 regions, not a process that begins late in the year, as it did in 2010 and 2011. To support the rationalisation and consolidation of the school network, the Ministry must step-up professional development of school directors and teachers as well as other initiatives to achieve more efficient and effective service delivery, notably in remote and isolated areas.

The Ministry's intent is to rationalise the school network over time toward the goal of having schools throughout Greece provide the full-range of educational opportunities embodied in the concept of the "New School." At the primary level, this would involve a region-by-region, step-by-step rolling out, to all schools, of the all-day school model, drawing from the experience of the 801 pilot schools. The current all-day pilot schools, distributed throughout the 13 regions in relation to the size of the student populations, enrol approximately 30% of the total primary school population (Box 1.5). The OECD team and seven of the 13 regional directors discussed both the consolidation of schools within their regions and the all-day pilot schools.

The data on current school size (Figures 1.9 through 1.16b) point to the wide gap between the Ministry's goal of achieving the scale of 12-post schools (a maximum of 300 students at the primary school level) and, at a minimum, six-post schools (150 students) for all-day schools. At the same time, the pilot school appears to be a high-cost model, depending on special teachers for the supplementary curriculum (English language, ICT, art, music, etc.). Currently these teachers are paid from EU project funds.

Moreover, the great number of small schools (and, among these, multi-grade schools) together with the country's geographic diversity underline the challenges Greece must overcome in achieving significant financial efficiencies from school consolidation (e.g. the cost for transportation of pupils may exceed the savings made from more efficient use of personnel). The greatest challenge, however, is in achieving efficiencies that will not have negative educational, social and economic impacts.

It was not clear from the information available at the time of this review whether the Ministry was employing more cost-effective models where six-post schools are not feasible. Presumably, multigrade schools will remain an important element of the school network. If not already underway, the Ministry of Education should develop new models for very small schools (fewer than six posts) so that the goals of the "New School" initiative and full-day schools can be achieved, but in a far more cost-effective manner than envisioned in the 801 pilot schools. These could include:

- adjustments in teachers' and school leaders' roles and responsibilities and workloads to make possible more flexible, shared roles and multidisciplinary assignments;
- re-designing the curriculum to be more multidisciplinary and to facilitate new modes of teaching;

- focused professional development of teachers in small, multigrade schools;
- greater efforts to provide on-site capacity for increased use of digital materials, e-learning and other technology-based support; and
- special training for school directors to prepare them for both institutional leadership and leadership in the sometimes challenging social and economic conditions of isolated rural communities.

School clusters are an important alternative for improving services and efficiencies in cases where it is necessary to maintain some small school units. The recently announced reforms in the administrative structure envision such multischool units. School clusters should group a set of schools (within a geographical perimeter that allows for frequent meetings between teachers and managers for all schools) under the supervision of one school, which becomes the cluster centre, where the school leader and the managing bodies are located.

Box 1.6 **Lesson from Portugal on school consolidation**

Careful planning and preparation, conducted under a very demanding agenda, was a key factor for the success of the school consolidation programme in Portugal, where about 3 000 school units were closed down in four years. The use of transparent and objective criteria (based on performance and size) and timely information to local authorities and parents were also very important. The notion was conveyed that the "new school" (resulting from the merger or to where pupils are being transferred) is a better school, that it has more to offer (full-day, curricular enhancement, better facilities), and this certainly helped gain support for the whole process.

In Portugal, in the aftermath of the first (experimental) cycle of school evaluation, contracts for autonomy were signed between the Ministry Education and the school clusters transferring competence to schools. The law regulating autonomy and management of schools establishes the contract of autonomy, linked to school evaluation (both self-evaluation and external evaluation) as a fundamental tool for the system's governance.

Source: Santiago P., et al. (2009).

Box 1.7 **Lesson from Portugal on vertical clusters**

The institution of school clusters was a fundamental to build up management capacity in schools, especially because of the dispersion of the school network and the number of small school units. School management units were reduced from 12 000 to 1 300. Initially, "horizontal" clusters (i.e. school clusters made up of primary schools) were admitted, but later on only "vertical" clusters (in which primary schools come under the supervision of a lower-secondary school) were accepted. The move towards "vertical" clusters was a crucial factor in upgrading school leadership and making school management more qualified.

Source: Santiago P., et al. (2009).

Clusters may be "horizontal" (grouping schools of only one level of education as foreseen in the current reform), but much may be gained from "vertical" clusters, in which a school providing at least lower secondary education takes up an overseeing role. The lower secondary school acting as the centre of the cluster would take in the students completing primary education in the schools that are part of the cluster. School clusters can have a range of dimensions, according to their geographical setting, but concentration should be kept within limits that allow for effective and efficient school management (maximum size/capacity could be determined at around 2 500 students).

The school cluster encourages a more efficient management of resources, notably human resources. The professional relationship with teachers should be established not with the individual school unit but with the school cluster, allowing for a more flexible and efficient allocation of the teaching staff. Larger units also allow a more professional and qualified management to develop and can recruit support personnel.

School clusters could also be the appropriate answer for differences in school performance. Both disadvantaged schools, which are especially deleterious to disadvantaged students, and generally underperforming schools have much to gain from becoming integrated in larger management units, where their problems may find better chances of being adequately addressed.

School clusters should therefore form the basis of a new system of school governance, underpinned by stronger leaderships entrusted with greater autonomy and supported by intermediate managers and school advisors.

Summary of recommendations

Short term

- Make rationalisation of the school network a central priority of the Ministry of Education.
- Assign the task of school mapping and rationalisation to each of the 13 regional directors as an on-going core planning responsibility, not a process that begins late in the year, as it did in the 2010/11 academic year.
  - Pursue a differentiated region-by-region strategy for rationalizing the school network, recognising significantly different geographic and demographic conditions in each region (urban versus rural/mountainous, mountains versus islands, etc.). The existing centralised, one-size-fits all approach to education policy is a significant barrier for adapting to this variety of conditions (e.g. for addressing the needs of multigrade schools).
  - Set goals and benchmarks for each region to improve the efficiency of their use of human resources and the rationalisation of the school network.
  - Establish performance agreements between the Ministry and each regional director for making step-by-step progress toward agreed goals.
- Set clear targets for a minimum of pupils (not only the minimum number of posts) for schools at each level of education. Develop specific models (see below) including school clusters to accommodate circumstances in which these minimums cannot be achieved because of geography and other circumstances. Minimum sizes could be in the range of:
  - 75 pupils for primary schools;
  - 150 students for lower-secondary schools; and
  - 250 students for upper-secondary schools.
- Implement school clusters as an essential means of improving services and efficiencies in cases where it is necessary to maintain some small school units.
- Step up professional development of school directors and teachers as well as other initiatives to achieve more efficient and effective service delivery, notably in remote and isolated areas, to support the rationalisation and consolidation of the school network (see previous section of this report).

Table 1.8 School collaboration in different countries (2008)

Belgium (Fl.)	School communities have been created as voluntary collaborative partnerships between schools. They aim to have common staffing, ICT and welfare resources management.
Denmark	Co-operation in post-compulsory education has been promoted by way of the creation of administrative groups that can be set up locally or regionally between self-governing institutions to optimise their joint resources.
England	A variety of approaches to co-operation are stimulated by the government – federations of schools, national leaders of education, school improvement partners, etc.
Finland	A 2003 legislative reform has enhanced school co-operation aiming to ensure integrity of students' study paths.
France	"School basins" have been implemented to ensure collaborative partnerships between schools to work together in student orientation, educational coherence between different types of schools, common management of shared material and human resources.
Hungary	Micro-regional partnerships based on economic and professional rationalisation were created in 2004 and have resulted in the spreading of common school maintenance in almost all Hungarian micro regions. These networks for co-operation are the scenes of professional and organisational learning in a way that can function as new forms of education governance and efficient frames of innovation.
Korea	Small schools cooperate to overcome problems of size in teacher exchange, curriculum organisation, joint development activities and integrated use of facilities.
Netherlands	In primary education, "upper management" takes management responsibility for several schools. About 80% of the primary school boards have an upper school management bureau for central management, policy staff and support staff.
New Zealand	New Zealand School clusters based around geographical communities and communities of interest have been facilitated.
Northern Ireland	Post-primary schools share provision of courses with other schools and further education colleges. "School Collaboration Programme" focuses on school co-operation for increased curricular access on the local level. "Specialist Schools" model requires post-primary specialist schools to partner with primary schools and at least one other post-primary.
Norway	Tendency to merge several schools to form an administrative unit governed by a school principal. It is quite common for principals to network in the municipalities.
Portugal	Common patterns of school governance are that schools are grouped together with a collective management structure. Executive, pedagogical and administrative councils are responsible for their areas.
Scotland	Important political promotion of collaboration. "Heads Together" is a nationwide online community for sharing leadership experience. Integrated community schools.
Sweden	Municipal directors of education steer principals. Most of them are members of directors of education steering groups where strategy, development and results are discussed.

Source: OECD (2008a), Table 2.1. From Country Background Reports, available at *www.oecd.org/edu/schoolleadership*.

- Develop new models for very small schools (fewer than six posts) that will make it possible to achieve the goals of the "New School" initiative and full-day schools, but in a far more cost-effective manner than envisioned in the 801 pilot schools. This could include:
  - adjustments in teachers' and school leaders' roles and responsibilities and workloads to make possible more flexible, shared roles and multidisciplinary assignments;
  - re-designing the curriculum to be more multidisciplinary and to facilitate new modes of teaching;
  - focused professional development of teachers in small, multigrade schools;
  - focused efforts to provide on-site capacity for increased use of digital materials, e-learning and other technology-based support; and
  - special training for school directors to prepare them for both institutional leadership and leadership in the often challenging social and economic conditions of isolated rural communities.

Medium term

- Develop an integrated programme budget for each region, prefecture/directorate, and school unit or school cluster, including: (1) budgeted positions; (2) current budget, including textbooks and other materials; (3) investment budget; and (4) the budget for building maintenance, transportation and other services provided through municipalities and the Ministry of Interior.
- Transfer the allocation of funds for functions supported through the Ministry of Interior (i.e. transport of pupils, maintenance of schools, etc.) to the Ministry of Education, Lifelong Learning, and Religious Affairs.

Longer term

- Consider making changes to educational budget development and execution. The budget allocations to regions should be changed to a per-student funding formula (weighted by level, socio-economic conditions of population, and other special conditions). The formula could include elements for teaching positions, current budget and investments.

EVALUATION AND ASSESSMENT

Evaluation and assessment to improve school and system performance and efficiency

No reliable indicators are in place to provide information on the quality, efficiency and effectiveness of the Greek education system. The system cannot rely on consistent tools for measuring the quality and effectiveness of the education system and the actual achievement of learning outcomes, as there are neither external assessments of learning, based on standardised national assessments, nor external evaluations of schools and teaching. Students advance from grade to grade as they are assessed in schools by their teachers, and external examinations are only used to regulate tertiary education's admissions.

A comprehensive information system for planning and evaluation at the school, region and national levels is only in early stages of development.

Current reforms

The Ministry of Education has made the project "Evaluation of the Educational Work of Schools: The Process of Self-Evaluation," one of its top priorities. A provision regarding evaluation of schools was included in the law passed in May 2010 (3848/201) which also included requirements regarding the conditions surrounding the employment of teachers, school directors, and others (see section on current references in the section on development and use of human resources). Section 32 of that law specified that:

- Each school unit will prepare an action plan with their educational goals for the school year by the end of September.
- At the end of each school year, the school will prepare a report that assesses: (1) the performance of the school as a whole; (2) its success in achieving the educational goals set in the action plan; and (3) the strengths, weaknesses and problems encountered during the school year. It will also include suggestions for improvement in the next school year.
- The action plan and the evaluation report, prepared under the responsibility of the director of the school unit, in collaboration with teachers and school advisors, is to be communicated to students and parents, posted online on the websites of the school and the education departments, and submitted to the Centre for Educational Research (KEE).
- The heads of education departments will prepare an action plan for each school year and submit reports to their respective regional directors of education. The project was first implemented in academic year 2010-11 on a pilot basis, and the Ministry has announced intentions to extend self-evaluation to all schools. The Ministry had made clear that the self-evaluation project is an effort to develop a culture of evaluation in a country where teachers have strongly opposed evaluation initiatives in the past.

The Ministry has made a major effort to integrate four separate databases from different units within the Ministry to provide a comprehensive information system regarding teachers, school directors, students and other school characteristics. For the first

time, the Ministry will have accurate information on every school, and the system allows schools to report to communities ("school card") and for education departments and regional directors to monitor and report on teacher vacancies and other matters.

Observations on the challenges when establishing a culture of evaluation

Greece faces a major challenge in developing a culture of evaluation, as external evaluations have historically been distrusted, particularly by the teaching profession. The pilot project on self-evaluation of schools is an important step towards developing a more comprehensive system of assessment and evaluation. Because an effective evaluation system is a critical missing element in Greece, the school self-evaluation project should continue as a central priority, and the model should be extended to all schools as soon as possible. But this is only a first step toward a more comprehensive evaluation policy framework. As illustrated in Figure 1.17, a comprehensive system involves multiple components.

Performance in schools is increasingly judged on the basis of effective learning outcomes. Such information is critical for knowing whether the school system is delivering good performance and for providing feedback for improvement. A comprehensive system of evaluation is a requirement not only for the development of improvement strategies at all levels (teacher, school, administration) but also for measuring the success in achieving the goals of reform and for establishing a regime of accountability. Evaluations and assessments are requirements for an equitable regime of accountability, efficient management, effective decentralisation, and for devolution of autonomy to individual schools (OECD, 2011a).

Although self-evaluation of school units is now being introduced progressively in Greece, and efforts have been made to establish objective criteria for this process, insufficient external validation and comparable data on student, teacher and school performance limit the effectiveness of these efforts and constrain management at all levels. Without such information, it is difficult to monitor the performance of schools and students and measure the achievement of learning objectives. Furthermore, there is no evident link between student assessment, school and teacher evaluation and consequences for those who have been evaluated. Overall, there is no evaluation culture that takes results as the first criterion, or the basis for improvement strategies and distribution of responsibility.

The OECD's *Evaluation and Assessment Frameworks for Improving School Outcomes* (OECD, 2011a) identifies the following issues that the Greek authorities will need to consider when establishing an evaluation system.

Implementation

Ensuring articulations within the evaluation and assessment framework

In developing policy, school assessment, teacher appraisal, and standardised national student tests to assess students' progress should be considered together, not only so any new policies work effectively towards achieving the goals of the evaluation and assessment framework, but also to create complementarities, avoid duplication, and prevent inconsistency of objectives.

Developing competencies for evaluation and for using feedback

The effectiveness of evaluations and assessments depend, to a large extent, on the skills of those who design and undertake evaluation activities and of those who use the results. Since evaluations can have significant consequences for those assessed, it is important to develop competencies and define responsibilities for successful feedback mechanisms in the evaluation process.

In addition, competencies for using feedback to improve practice are also vital to ensure that evaluation and assessment procedures are effective. Since teachers should be involved in improving schools, it would be useful to include training for evaluation in initial teacher education alongside the development of research skills. Similarly, the preparation to become a school leader is expected to include educational leadership with some emphasis on feedback mechanisms.

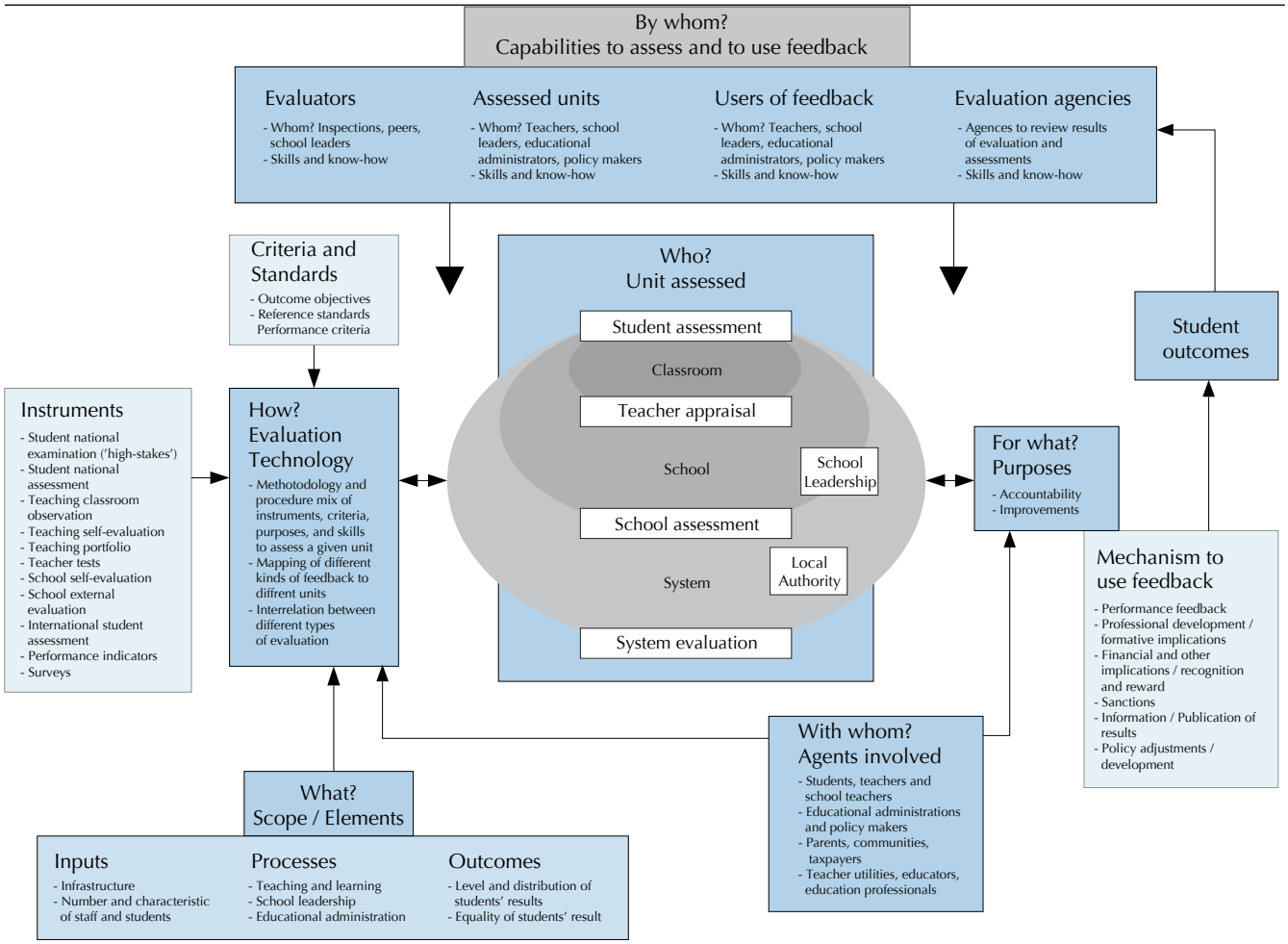
Securing links with classroom practice

Evaluation and assessment frameworks have no value if they do not lead to the improvement of classroom practice and student learning. Securing effective links to classroom practice is a key policy challenge in the design of evaluation and assessment frameworks.

A number of strategies can help to reinforce the linkages between the evaluation and assessment framework and classroom practice. A strong emphasis on teacher evaluation for the continuous improvement of teaching practices in the school could reinforce such a link. Another lever is to involve teachers in school evaluation. The system of self-evaluations being introduced in Greece could help to strengthen collective processes with responsibilities for teachers. Another important instrument is ensuring that teachers are seen as the main experts not only in instructing but also in assessing their students, so that teachers feel the ownership of student assessment and accept it as an integral part of teaching and learning. Teachers should also be supported in their daily practice by defining clear student goals and grading criteria, and by building capacity through adequate training on assessment literacy. These strategies build teacher professionalism.

▪ Figure 1.17 ▪

Conceptual framework to analyse evaluation and assessment of school systems



Source: OECD (2009), *OECD Review on Evaluation and Assessment Frameworks for Improving School Outcomes*, Education Policy Committee, 14 October 2009, Figure 1, p. 6. *(www.oecd.org/dataoecd/17/3/44568070.pdf)*

Evaluation and assessment frameworks will not be able to improve student learning if they do not identify appropriate incentives to prompt change and provide focused support for teachers in classrooms. Indeed, the focus on improving linkages to classroom practice will be one of the most critical points for designing an effective evaluation system in Greece.

Overcoming the challenge of implementation

Implementation difficulties may arise as a result of a wide range of factors. Since there is no tradition of evaluation in Greece, the system is still unprepared to undertake large-scale evaluations because of the limited professional expertise of those with responsibility to evaluate. Other obstacles may be a sense of unfairness perceived by those being evaluated, excessive bureaucratic demands on schools, lack of resources to implement evaluation policies, or inadequate dissemination of evaluation results by the media.

It is therefore important to overcome the challenges of implementation. This includes reconciling the diverse interests of stakeholders, carefully analysing policy alternatives and their likely impact and discussing them with stakeholders to build a consensus. It is important to explore the role of bargaining processes and of incentive structures to facilitate compliance with new policies, to ensure policy implementation in the longer term. Other strategies include pilot projects before wide-scale implementation.

The Greek authorities need to recognise that reaching agreements on the design of the evaluation and assessment framework requires time for discussions and consultations with all stakeholders. In addition, developing expertise in the system, including training evaluators is expensive and requires time; conducting evaluation processes means additional workload for school agents; and aligning broader school reforms, such as professional development opportunities with evaluation and assessment strategies, requires more educational resources.

Student assessment

Aligning educational standards and student assessment

A key element of an evaluation system, which is now missing in Greece, is a means to assess student learning outcomes through a national student assessment. There are challenges in developing an effective student assessment within the evaluation and assessment framework, such as aligning educational standards and student assessment, balancing external assessments and teacher-based assessments of learning, and integrating student-formative assessments. While recognising these challenges, the OECD recommends that Greece designs a national system of student assessments that can be used, as appropriate, at multiple levels: the individual student, the classroom, the school, the region and the system. Any approach to student assessment needs to match the curriculum and the standards in order to have value in judging how well students are learning and in diagnosing school or student needs.

Part of the strategy may consist of developing large-scale standardised tests with a high degree of:

- validity – the degree to which assessments and evaluations measure what they are intended to measure;
- reliability – the consistency and stability of results across student populations; and
- usefulness – how policy makers, school leaders and teachers make sense of and respond to assessment and evaluation results.

In addition, efforts should be directed towards developing teacher capacity in assessing against standards, providing detailed guidelines on marking assessments, and strengthening moderation processes between teachers and schools.

Balancing external and teacher-based assessments of learning

An important policy challenge is the design of student summative assessments, which provide a summary statement of student achievement at a particular point in time. Research shows that while summative assessments are primarily conceived to measure the outcomes of learning, they can, in turn, have a strong impact on the learning process itself. The impact of the university entrance exam on schooling and learning processes in secondary schools in Greece is a case in point. Different assessment policies and practices influence students' motivation, effort, learning styles and perceptions of self-efficacy as well as teaching practices and teacher-student relationships.

External assessment refers to standardised examinations that are designed and marked outside individual schools and normally take the form of a written test. The major advantage of external assessment is their reliability. They ensure that all students are assessed on the same tasks and that the results are measured by the same standards. Moreover, external assessments are usually conducted under supervision, which ensures that what is assessed is the students' own work. However, only a limited range of curriculum goals can be covered. The risk is that teachers may end up focusing on test-taking skills, especially when test results have a significant impact on students' futures, needs to be moderated as well.

Teacher assessment refers to continuous assessment of learning that is designed and/or marked by the students' own teachers. It is conducted internally in the classroom and counts towards a final grade or evaluation of the student. Teacher-based summative assessments may include different types of assessments, such as teacher-made tests, classroom-embedded assignments, project work and portfolios. Typically, teacher assessment is presented in the literature as having higher validity than external assessment. Because it is continuous, teacher assessment often allows for the measurement of important achievements could not be captured in a final examination, such as extended projects, practical assignments or oral work. However, teacher assessments are often perceived as unreliable. Test items and grading standards may vary widely between teachers and schools, so that the results of internal assessments will lack external confidence and cannot be compared across schools. There might also be a high risk of bias, i.e. the assessment is unfair to particular groups of students.

This indicates that a combination of teacher-based and external assessments would be most suitable to ensure maximum validity and reliability. Learning outcomes that can be readily assessed in external examination should be covered this way, whereas more complex competencies should be assessed through continuous teacher assessments. Strategies to improve the reliability of teacher assessment include using scoring guides, negotiated scoring criteria, external benchmarks, training for teachers, multiple judgements and external moderation. Another approach is to develop on-demand assessments, where teachers can draw from a central bank of assessment tasks and ask students to take the assessment when they consider that they are ready.

Integrating student formative assessment in the evaluation and assessment framework

Classroom-based formative assessment – the frequent, interactive assessment of student progress to identify learning needs and shape teaching – has taken on an increasingly important role in education policy. An important policy challenge is to find suitable strategies to integrate classroom-based formative assessment within the broader assessment and evaluation framework.

Strategies to achieve such integration include a closer interface between formative assessment and summative assessment. For example, countries may strengthen teachers' assessment roles. Because teachers are able to observe students' progress toward the

full range of goals set out in standards and curriculum over time and in a variety of contexts, their assessments help to increase validity and reliability of summative assessments. Countries can also consider developing "complex assessments" combining performance-based assessments with standardised assessments. Performance-based assessments are better able to capture complex student competencies, such as reasoning and problem-solving skills, while standardised assessments increase reliability of results. Another priority could be to use standardised assessments formatively in the classroom.

An additional strategy is the development of test banks, allowing teachers to choose from centrally developed assessments. These tests may provide more detail and be delivered in a more timely fashion so that teachers may use the results formatively. Closer integration of formative assessment can also be achieved through ensuring that teacher evaluation and school evaluation respectively assess teachers' ability to engage in student formative assessment and schools' approaches to formative assessment.

Teacher evaluation

The quality of teaching is generally regarded as the most crucial in-school factor for student achievement, and therefore it must be an object of both school and teacher evaluation. Class observation can be a first step towards assessing, and improving, teaching quality.

It is essential to develop a consistent, credible and practical teacher-evaluation system. School leadership has to be empowered and equipped to take responsibility over the process of teacher evaluation, although an external intervention should be considered, at least to check the school's evaluation procedures. Teacher evaluation should be designed for improvement through professional development, notably through an individual training plan, aligned with the school's training plan, if possible in agreement between the teacher and the school management.

Combining the improvement and accountability functions of teacher evaluations

Teacher evaluation has typically two major purposes: first, to improve practice by identifying a teacher's strengths and weaknesses for further professional development. This improvement function involves helping teachers learn about, reflect on, and adjust their practice. Second, it holds teachers accountable for their performance in enhancing student learning by evaluating performance at nodal points in a teacher's career. This accountability function typically entails performance-based career advancement and/or salaries, bonus pay, or the possibility of sanctions for underperformance.

Combining both the improvement and accountability functions into a single teacher-evaluation process raises challenges. When the evaluation is oriented towards improving practice within schools, teachers are typically open to identifying their weaknesses, in the expectation that such knowledge will lead to more effective decisions on developmental needs and training. However, when teachers are confronted with potential consequences for their career and salary, they may be less likely to accept performance evaluations, and the improvement function may be jeopardised. In practice, countries rarely use a pure form of teacher evaluation; instead they use combinations of assessments that integrate multiple purposes and methodologies.

Accounting for student results in the evaluation of teachers

Specifying the consequences of evaluations for career progression is a complex matter, as it may incite the resistance and opposition of teachers and their unions. Nonetheless it is critical that evaluations have meaningful consequences to those evaluated, as it is the only way to ensure that they are taken seriously. The system of evaluation should provide links between evaluation for improvement and evaluation for career progression. Furthermore, evaluation is the only consistent way of distinguishing among teachers. In a fiscal situation that leaves little room for rewards, it is very important to make sure that the most diligent and effective teachers are compensated fairly.

Using teacher evaluation results to shape incentives for teachers

Evaluation of teacher performance can also be used to determine career advancement, reward good performance or establish sanctions for underperforming teachers. In doing so, it also helps schools to retain effective teachers and makes teaching an attractive career choice.

However, it should be noted that the issues related to developing a closer relationship between teacher performance and rewards are controversial in all countries. While research has produced mixed results, there seems to be agreement that the design and implementation of performance-based rewards are crucial to their success. Challenges include developing fair and reliable indicators of performance, training evaluators to fairly apply these indicators, and articulating how, and against what criteria, teachers are assessed.

School evaluation

The Greek authorities should accelerate their initiative on school self-evaluation with a view to designing and implementing a comprehensive system of assessment and evaluation based on results and outcomes (more than on input and procedure) in order to improve the provision of education and to promote accountability across the whole education system.

It is important that the system be considered credible and legitimate by all stakeholders. For this purpose, it must rest on internationally validated methods, criteria and procedures; make use of trained and recognised evaluators; and produce equitable, transparent and effective results.

School self-evaluation is an important first step in the system of evaluation, to build trust and introduce evaluation as a regular practice in the organisational culture of schools. The Greek authorities should pursue their initiative for school evaluation, and all school units should take part in this process. However, care must be taken that school self-evaluation is not designed and interpreted as a mere routine bureaucratic obligation. For that reason, self-evaluation must be organised so that it is comparable between school units and so that it can be validated and supplemented by external evaluation.

Therefore, a scheme for regular external school evaluations, for instance, once every four years, should be designed and implemented. This would facilitate using the self-evaluation results as a basis for establishing greater accountability for schools and their managers, so that ultimately schools may be granted more autonomy and may assume greater management responsibilities. External evaluations should cover:

- The quality and equity of education, including students' performance and learning achievements; the quality of teaching and assessment; and how the school handles student diversity.
- The school's organisation and management, including efficiency of resource management; the school's self-regulation and ability for self-improvement.
- The school's leadership, including its ability to set goals, plan for and obtain results, and co-ordinate, motivate, and elicit the best from all stakeholders. Implementing self-evaluation of schools as a tool to improve quality has been on the educational agenda in OECD and EU member countries for many years. Greece is now among those countries setting objectives and benchmarks. But policymakers should be aware that self-evaluation of schools is a highly demanding and time-consuming exercise. It requires high-quality school leaders, committed staff and critical friends. Unless the system to recruit school leaders changes dramatically, Greek schools look poorly prepared to implement self-evaluation successfully and productively. Teachers' unions are at best sceptical, at worst opposed, as they fear self-evaluation of schools will ultimately lead to evaluation of individual teachers, which they reject.

Aligning external and internal school evaluations

In many countries, there has been a shift from school evaluations that focus on compliance with central policies and procedures towards wider strategies of school improvement. External evaluation has achieved a much closer alignment with self-evaluation, partly due to its value for strengthening school autonomy.

Self-evaluation, as currently pursued in Greece, has the merit of being 'owned' by the school and, as such, responds directly to the school's specific needs and circumstances. However, self-evaluation for accountability is subject to inevitable tensions between rigour and depth on the one hand and a natural desire not to undermine the confidence of parents and superiors on the other. As a result, self-evaluation is more a tool for managing improvement than for large changes that challenge assumptions or arrive at conclusions that threaten key actors in the school's hierarchy. The external perspective in school evaluation, therefore, provides both distance from the internal dynamics of the school and objectivity, which can lead to greater rigour in the process.

Externality can be achieved in a variety of ways: who evaluates, what is evaluated and how, and the ways in which the results are agreed upon and communicated. These points must be explicit from the outset. Clarity about the nature of externality and about the contexts within which it is important should also be determined.

Balancing information to parents with fair and reasonable public reporting on schools

Access to credible public information about school performance has been a growing trend in recent years. In part, it results from the right of stakeholders, particularly parents, to know how well a school is performing, as part of a wider move towards more choice about which school their child can attend. There is also the belief that measuring and publicising student outcomes on a comparative basis will lead schools to focus on taking the action necessary to improve their relative performance. Thus the assumption is that greater accountability and transparency will help drive improvement.

The challenge is to harness the power of fair public quantitative comparative information that is set in a national performance context and that reflects broader student learning objectives. That implies developing a wider strategy that encourages school evaluation and school aspirations in relation to the wider educational agenda, whatever the test results.

Improving the data-handling skills of school agents

Gathering and analysing data from student assessments and satisfaction surveys is increasingly part of evaluation and assessment frameworks. In a number of cases, there are now well-established and sophisticated methods, available to principals, teachers and parents, that analyse standardised test results across schools in ways that allow fair comparisons to be made using student-level

Box 1.8 **Lessons from Portugal on external assessment**

In Portugal, external assessment of students' performance made crucial information available to policy makers. It improved the understanding of the system's problems and made specific measures to be taken. For instance, the process of school consolidation first targeted the poor performing among the small schools.

Handing information on student scores back to schools and stimulating reflection at the school level on such scores and on proposals for improvement was very important in introducing a new concern about student performance in schools. This, and political insistence on the notion that student results are the measure of the schools' and teachers' work, operated a positive change in the attitude of many teachers and schools.

On the other hand, the use by the press of student scores in upper secondary national examinations to build rather gross rankings of schools has proven harmful for the recognition of school's commitment to improvement.

Source: Santiago P., et al. (2009)

socio-economic data. Such data provide teachers with valuable diagnostic evidence about both student performance, and school performance, more generally.

In a range of countries, there is an increasing commitment by principals and teachers to the use such test data to improve student learning and their own accountability. Teachers use data formatively to identify individual students' strengths and weaknesses and engage in personalised teaching to promote subsequent progress. However, teachers often note the limitations of their knowledge to appropriately analyse and interpret student-performance data.

Consequently, the challenge is to ensure that all key people in schools have the necessary skills in data gathering, analysis and interpretation to understand the results of evaluations and to translate results into action. There is a need to improve the data-handling skills of principals and teachers across the board.

System evaluation

The Ministry still lacks a sound information base for national decision making. The development of an accurate and manageable data system is an essential requirement for managing the education system at all levels and for formulating and implementing the envisaged reforms.

The lack of a reliable and comprehensive data system that covers management-performance indicators hinders policy making and implementation of reforms. The lack of an integrated system of evaluation, with data on quality and equity in relation to resources assigned to education, makes development of a coherent strategy for improvement all the more difficult.

Development of a high-quality database is a matter of great urgency. Currently, the Greek Ministry of Education has no reliable data on pupils, schools and teachers. The Ministry lacks critical information on the number of students, enrolment in schools, age, grade, field of study and other background information. Moreover, without a reliable database on enrolment of pupils, efficient monitoring of school attendance and learning during compulsory education is impossible. The Ministry also has poor information on the number of teachers, their qualifications and workload, status (permanent or temporary), age, salaries, etc. Lack of information on schools, regarding their location, enrolment, staff, type of school, pedagogical offerings, etc. is also an impediment. Trend data are lacking completely.

A reliable database contributes greatly to greater effectiveness in policy making, to more effective communication, and ultimately to greater acceptance and ownership of reforms. Without a reliable database, scientific evaluation of policies, identification of good practice and evidence-based policy making is impossible.

Computer-science experts from the University of Patras are in the process of building a new database, which will hold information about schools and could be accessed by different levels of the system (schools, regions, ministry) according to their needs. However, experts and practitioners familiar with the implementation of large IT programmes in ministries of education stress the importance of the involvement of the future users of these programmes. This is not the case in Greece. Solid co-operation between computer science experts and civil servants at all levels is needed to develop an efficient system, since it is the latter who know best what kind of information is required for policy making.

Efficient use of scarce resources is even more difficult for a ministry of education. As noted earlier, the Greek Ministry has only recently begun developing an effective information-management system. Critical data on the education system are either lacking or

unreliable. Lack of clear formulae for staffing schools and for allocating funds for operational expenses along with the distribution of responsibilities across different ministerial portfolios, administrative layers and municipal committees do not enhance efficient and transparent use of funds. A reliable database and an effective information-management system are excellent tools to increase efficiency and transparency.

Policy should be informed by a range of quantitative and qualitative measures. The challenge is to ensure that the measures of system performance are broad enough to capture the whole range of student learning objectives. Policy making at the system level needs to be informed by high-quality data and evidence, but not driven by the availability of such information.

Indicators and measures of system performance provide a good way of understanding of how well education is being delivered. Using these data, governments can analyse performance and identify priority areas for planning, intervention and policy. This typically entails the development of a system performance-measurement framework.

Indicators for high-level objectives for the education system should be augmented with measures for each, mapped out area under each objective. In addition data should be based on accepted definitions for all levels of education; the quality of data should be improved; research should be conducted on those 'gaps' where systematic collection is too costly or not feasible; and a long-term strategy to improve measurement tools for future information needs should be developed.

While countries often collect large amounts of data and statistics at the system level, these data are frequently underused. This is sometimes the result of insufficient consultation among interested stakeholders and agencies on how best to manage, integrate and present data for optimal use by different audiences.

There is a range of options to ensure the more effective use of existing information by key stakeholders in system evaluation. One option is to establish a protocol to share data system evaluation among key stakeholders. This may include data that are not available to the public, but that can be analysed and used, for example, for school or local government reviews. Another option is to build the analytical capacity, including statistical, analytical and research competencies at the national level to fully exploit existing information followed by clear, high-quality and timely reporting of results, customised for different audiences. For example, databases and technical materials are useful for researchers, but clear key messages on major results are helpful for local government. Schools will benefit from comprehensive feedback on student performance on national tests (e.g. by test area, by individual question, by class, by student group).

The challenge is how to best organise the collection and analysis of key information at the national level, to clearly communicate results of system evaluation and ensure the effective use of results by stakeholders throughout the system.

To summarise, without external evaluations and assessments it is difficult to monitor the performance of schools and their students and to measure the achievement of curricular objectives. The lack of external evaluations and assessments creates problems for governance and management at all levels and makes the design of education policy and the assessment of its implementation even more problematic. It also affects the development, implementation and monitoring of reforms.

The Ministry lacks a sound information base for:

- policy making and for assessing the implementation of reforms; and
- assessing the provision of education in terms of quality and equity and the use of resources assigned to education.

The Ministry lacks a comprehensive, integrated system of evaluation and assessment. In particular, there is no:

- standardised national assessment that could be used to compare performance among students, teachers, schools, or regions;
- linkages between student assessment, school and teacher evaluation; or
- culture of evaluation in the system that takes results as the first criterion that forms the basis of improvement strategies and the distribution of responsibility.

An integrated system of evaluation is necessary for:

- developing a coherent strategy for improvement at all levels (teacher, school, administration);
- monitoring the performance of schools and students and measuring the achievement of learning objectives;
- measuring the accomplishment of reform goals and the improvement of the regime of accountability;
- providing a means for accountability regarding equity, efficient management, effective decentralisation and devolution of autonomy to the schools; and
- improving teacher evaluations, so that they are fair, transparent and have clear consequences.

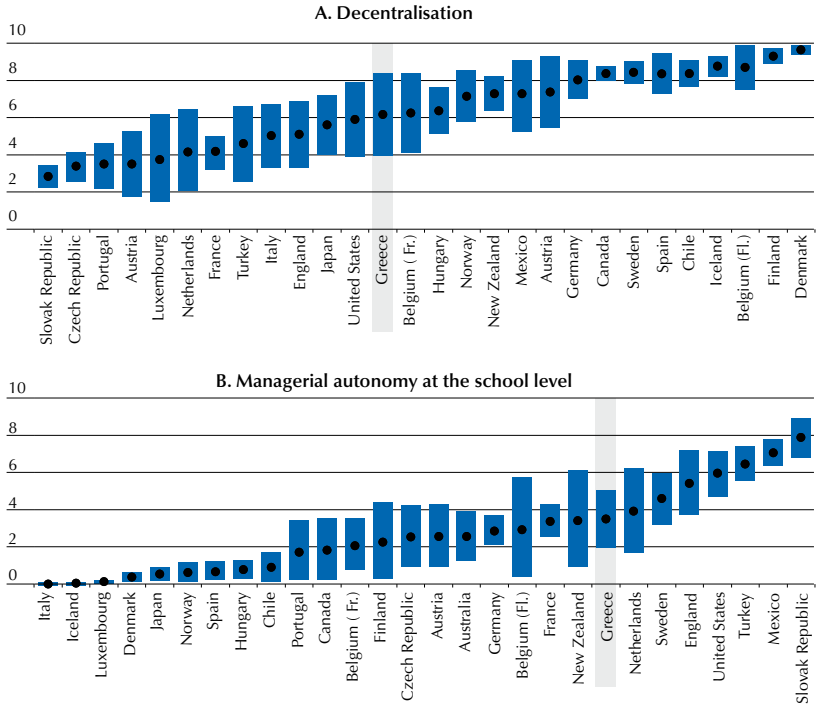
Summary of recommendations

Short term

- Accelerate the initiative on school self-evaluation with a view to designing and implementing a comprehensive system of assessment and evaluation based on results and outcomes (rather than on input and procedure) in order to improve the provision of the education service and to promote accountability across the whole education system. Specifically, the Ministry should:
  - organise the self-evaluation of schools so that the results are comparable between schools and so that they may be validated and supplemented by external evaluation;
  - design and implement a scheme for regular school external evaluation (for instance, once every four years);
  - use the external evaluation to: (1) validate self-evaluation results, (2) assess the school's ability to be granted more autonomy and to assume greater management responsibilities, and (3) establish a basis for the accountability of schools and their managers;
  - include criteria related to: (1) the provision of education service in terms of quality and equity (students' performance and learning achievement); (2) the quality of teaching and assessment and the response to student diversity; (3) the school's organisation and management (efficiency of resource management); the school's self-regulation and ability for self-improvement; (4) the school's leadership (ability to set goals, plan for and obtain results, and co-ordinate, motivate, and elicit the best from stakeholders); and
  - ensure effectiveness of the external evaluation by: (1) providing for the external evaluation to be performed by qualified and recognised evaluators; (2) designing and providing a training programme for evaluators; (3) determining the agency responsible for the external evaluation and ensuring that it has the autonomy and means to carry out its mission.
- Initiate, design and develop as soon as possible a comprehensive system of assessment of learning outcomes that is aligned with curriculum objectives, and that can be used at multiple levels of the system: individual students, classrooms, schools, regions and the system as a whole (Box 1.8). Initial steps towards this include developing standardised national assessments of student learning in mathematics, science and language for appropriate levels of education.
- Develop and maintain a comprehensive information system to support planning, quality improvement, and efficient management throughout the system. Make extensive efforts to engage the end-users of the data in the design of the information system.

▪ Figure 1.18 ▪

Autonomy and accountability in primary and secondary education (2007)



Note: The figure gives the average and the range that contains 90% of the 1 000 random weighted indices.
Source: Gonand, F., et al., (2007), Public spending efficiency: institutional indicators in primary and secondary education; and Sutherland D. et al., (2007), Performance indicators for public spending efficiency in primary and secondary education. Figures appear in OECD (2009a).

Medium term

Extend the standardised national assessment by:

- Developing central test banks linked to specific learning outcomes that teachers can use, which are comparable through time and count for individual students' results (20% to 30%).
- Providing professional development to strengthen the capacity of teachers to use formative methods for assessing student learning outcomes. Summative assessments aligned with curriculum objectives can be developed and targeted to specific learning outcomes and to mark different types of assessment, such as project work and portfolios.

Use the comprehensive system of assessment of learning outcomes developed to comparatively assess the performance of students, classrooms, schools, regions and the system as a whole.

Develop a consistent, credible and practical system of teacher evaluation in the context of a fully developed evaluation and assessment framework (Box 1.9).

- Empower and equip school leadership to take responsibility for the process of teacher evaluation.
- Consider use of external intervention, at least to check the school's evaluation procedures.
- Design teacher evaluation for improvement linked to professional development (for example, through an individual training plan, aligned with the school's training plan, if possible in agreement between the teacher and the school management).
- Insist that teacher evaluations have consequences for career progression and possibly compensation in order to ensure that teachers take evaluations seriously.
- Use teacher evaluation to distinguish among teachers to ensure that the most diligent and effective teachers are being compensated fairly.

Box 1.9 **Lessons from Portugal on school and teacher evaluation**

School evaluation has been much easier and peaceful to implement than teacher evaluation. Self-evaluation of schools is an important starting point, but for evaluation to be of any consequence it must be validated by external evaluation. It is important that schools accept the criteria and recognise the competence and legitimacy of the evaluators.

The recognition of the evaluators is no less important for teacher evaluation. It would be very useful that an agreement could be reached on the competence of evaluators and on the criteria and consequences of evaluation. A lengthy negotiation may be preferable to a more forceful implementation of teacher evaluation, especially if school evaluation is under way. Anyway, the notion that the first and foremost goal of evaluation is improvement, through further training and professional development should be conveyed. Consequences for career progression must be seen as a by-product of evaluation for improvement.

Failure to do this and to gain the support of teachers in schools made the system very difficult to implement in Portugal. Anyway, the system should not be dependent on the individual voluntary participation of teachers in the process (for instance though self-evaluation). Otherwise, it becomes exposed to individual or organised forms of resistance, which can jeopardise the whole effort.

Source: Santiago P., et al. (2009).

GOVERNANCE AND MANAGEMENT

Making more efficient use of available resources

The persistence of a highly centralised governance and management structure of the education system in Greece is a major barrier to improved efficiency and performance. In essence, the structure provides few incentives at each level of the system – the teacher, the school director, municipal and regional officials, or the various offices of the Ministry – to assume responsibility for making more efficient use of available resources to improve performance (Figure 1.18 and Table 1.9). The mentality throughout the system is to ensure compliance with narrowly defined centralised rules or to perform a narrowly defined task, rather than to be held accountable for efficiency or to contribute to a broader goal, such as improving student learning or improving the overall performance of a school or region. Because there are no goals, benchmarks or modes of evaluation for efficiency and performance at any level of the system, there are no means to hold individuals accountable.

The Greek education system is one of the most centralised in Europe. Most other countries in Europe, and the highest performing countries in PISA, have decentralised responsibility and accountability for student learning to the school level, redefined the roles at each level of the system to support school improvement, and changed the role of central authorities from enforcing compliance with centralised rules to leading improvement, supporting schools and teachers, and holding the overall system accountable for performance. Such changes have not taken place in Greece.

To a large extent, the centralised and fragmented education structure results from the overall national governmental structure of Greece. Traditionally, it has been a structure of highly centralised control, necessitated in part by the challenge of gaining coherence and maintaining political control across widely dispersed small communities and islands. The Ministry of Education functions within the framework of policies and rules established by the Ministries of Finance and Interior.

In addition to these external controls, education policies that are the responsibility of the Ministry of Education, including the curriculum, timetable, and the assignment and distribution of teachers and other school personnel, are also highly centralised.

Responsibility for key elements of the system – curriculum, assignment of teachers, development and distribution of textbooks, etc. – is dispersed among separate units within the Ministry and each of these units has vertical, "silo" connections with units down through the system to regions, prefectures, offices and schools. Responsibility and funding for important functions, such as maintaining school buildings and transportation, is assigned to municipalities under the jurisdiction of the Ministry of Interior, not the Ministry of Education. This makes coherence difficult.

Table 1.9 Levels of school policy decision making (2003)

Percentage of decisions relating to public sector lower secondary education taken at each level of government, 2003

	Central	State	Provincial / regional	Sub-regional	Local	School	Total
Australia		76				24	100
Austrai	27	22			23	29	100
Belgium (Fr.)[1]		32	25			43	100
Czech Republic	7		1		32	60	100
Denmark	19				38	44	100
England	11				4	85	100
Finland	2				71	27	100
France	24		10			31	100
Germany	4	30	17		17	32	100
Greece	**80**		**4**		**3**	**13**	**100**
Hungary	4				29	68	100
Iceland	25				50	25	100
Italy	23		16		15	46	100
Japan	13		21		44	23	100
Korea	9		34		8	48	100
Luxembourg	68					34	100
Mexico	30	45	2			22	100
Netherlands						100	100
New Zealand	25					75	100
Norway	32				32	37	100
Portugal	50		8			41	100
Slovak Republic	33		2		15	50	100
Spain		57	15			28	100
Sweden	18				38	47	100
Turkey[2]	49		27			24	100

Note: Blanks indicate that the level of government does not have primary responsibility for decisions.
1. For Belgium (French Community), the level provincial/regional means state level for 61% of the schools, provincial level for 21% and local level for 18%.
2. Data refer to primary education.
Source: OECD (2004), available at *www.oecd.org/edu/eag2004*.

The current system of regional administration is divided into five levels (see Figure 1.19): school unit, education offices (district level), directorates of education (prefecture level), regional education directorates, and the central office (ministry) with many scattered structures (16 000 school units, 116 directorates of education, 363 offices of education, 800 school advisers, and 200 000 teachers).

There are too many layers between the central heart of the Ministry and the schools. The function of each layer has traditionally not been to make decisions but to ensure compliance of subordinate units with centrally defined directives. Each of these layers does not correspond to a specific level of decision-making. Their existence cannot be justified either in terms of specialisation or in terms of decentralisation as they have overlapping responsibilities.

The regional and local structures are highly dysfunctional. The value-added and the specific sphere of competence of each administrative layer is unclear, as they seem to hinder more than facilitate communication between the core structure in the Ministry which is in charge of devising and steering the reforms, and the schools, which must implement them. They do not

correspond to different levels of decision making or to actual decentralisation. Fragmentation of responsibilities hinders effective policy making and does not enhance commitment and ownership of policies among those who have ultimate responsibility for high-quality teaching and learning: teachers and school directors.

A key finding from PISA is that the best-performing countries have moved away from centralised controls to more decentralised systems within the framework of national goals, support structures and accountability. These countries focus on the school as the unit for improvement: creating organisational framework and flexibility for teachers, under the instructional leadership of a school director, to collaborate in improving student learning. The following is a synopsis of the PISA findings:

> Many of the best-performing countries have […] rebalanced their systems to provide more discretion to school heads and school faculties, a factor that, when combined with accountability systems, is closely related to school performance. In many cases, these countries concluded that top-down initiatives were insufficient to achieve deep and lasting changes in practice, because reforms were focused on things that were too distant from the instructional core of teaching and learning; because reforms assumed that teachers would know how to do things they actually didn't know how to do; because too many conflicting reforms asked teachers to do too many things simultaneously; or because teachers and schools did not buy into the reform strategy.
>
> Formerly centralised systems have shifted emphasis towards improving the act of teaching; giving careful and detailed attention to implementation, along with opportunities for teachers to practice new ideas and learn from their colleagues; developing an integrated strategy and set of expectations for both teachers and students; and securing support from teachers for the reforms (OECD, 2010a).

▪ Figure 1.19 ▪

Organisation of educational administration of primary and secondary schools

NATIONAL LEVEL	
MINISTRY OF EDUCATION, LIFELONG LEARNING AND RELIGIOUS AFFAIRS	
Administrative Sector for Primary and Secondary Education	**General Directorate for Administration of Primary and Secondary Education**
Directorate for Primary Education Studies	Directorate for Primary Education Personnel
Directorate for Secondary Education Studies	Directorate for Secondary Education Personnel
Directorate for Physical Education	Directorate for Administrative Affairs of Primary and Secondary Education
Directorate for Special Education	General Directorate for Administrative and Financial Support
Directorate for Private Education	General Directorate for European and International Educational Affairs
Directorate for Career Guidance and Educational Activities	General Directorate for Planning
Administrative Sector for Higher Education	General Directorate for Religious Affairs
Administrative Sector for European Resources	Special Service for Implementation of Educational Actions off the Ministry of Education, Lifelong Learning and Religious Affairs
14 Other Independent Directorates and Offices	
↓	
PREFECTURE LEVEL	
DIRECTORATES OF EDUCATION	
Each of the 54 prefectural-level administrations consists of the following Directorates	
Directorate for Primary Education	Directorate for Secondary Education
↓	
DISTRICT LEVEL	
EDUCATION OFFICES	
Primary Education Offices	Secondary Education Offices
Physical Education Offices	Vocational Education Offices
A number of other Offices and Centres	
↓	
LOCAL LEVEL	
School Unit	
School Director	
School Deputy Director	
Teachers' Council	

Source: OECD, based on information from the Ministry of Education, Lifelong Learning and Religious Affairs.

Current reforms

In April 2011, the Ministry of Education announced a major reform of the administration of the education system focused on the goal "First the Student", but in this case, stressing "First the Unit of the School". The goal of the new structure is that "… all individual policies in education will have a single goal: to make the school unit, the heart of the educational system, work properly and efficiently". As explained in the consultation document, "… the operation of the 801 pilot full-day primary schools with a single revised curriculum that provides for the coexistence of various disciplines, teachers, teaching physical education, foreign languages, music, visual arts, theatre and computer education has demonstrated the necessity of joint planning, unity among all stakeholders at the New School and uniform guidance and support mechanisms." The reforms were also necessitated by the "*Kallikratis*" reforms in general government, which reduced the number of municipalities (which have responsibility for school buildings, transportation, etc.) and strengthened the role of regional administrative structures.

The reforms include:

- elimination of the Offices of Primary and Secondary Education;
- consolidation of the structures (administrative and guidance – supporting) facing common issues of primary and secondary education, particularly in the nine years of compulsory education, establishing a single regional management training module;
- streamlining the organisational structure of regional directorates, making the most of educational and administrative staff and the best use of available resources (reduction of rental buildings that house the regional offices, sharing where possible, etc.);
- reorganising, streamlining, strengthening and co-ordinating the system of scientific pedagogical guidance and support of educational work and the creation of new, single structure for guidance and support for primary and secondary education; and
- providing for a transitional period (2011-15) to ensure a smooth adjustment of system administration.

The transition structure to be in place until 2015 and the new structure are shown in Figures 1.20, 1.21 and 1.22 on the following pages.

Observations on the reforms

Scope and pace of reform

The recently announced administrative reforms are clearly in the right direction – toward a significant devolution of the educational system and a redefinition of the role of the Ministry of Education and other entities (e.g. the new institutes). In some respects, the reforms do not go far enough:

- School directors continue to have only a limited role in teacher selection and the allocation of teachers' time.
- Most centralised controls of curriculum, textbooks, budget and other matters remain unchanged, although clearly the intent is to increase flexibility at each level. The emphasis, however, remains on "delegation of central authority," rather than on empowerment of schools and school leaders within the framework of central strategy, frameworks, outcome-based accountability, and monitoring.
- The implementation timeline is too slow. Most of the existing structure will remain in place until 2015. Significant change is needed now in order to give the system the capacity to achieve the far-reaching change needed to respond to the economic crisis.

Professional development for education administrators

Change in the system depends on a fundamental change in the knowledge, skills, and competencies at every level of the system. This change could be accelerated by a comprehensive professional development programme for school directors and other educational administrators. At the time this report was prepared, there was no evidence of such a comprehensive initiative (see earlier sector on school leadership).

Perhaps the most serious problem is the lack of capacity to lead and sustain reform across changes in political leadership of the Ministry of Education. The current reforms are being led by a small, highly motivated and competent core of senior policy advisors to the Minister. There appears to be a wide gap between this leadership team and the large core of public servants who have been, and will continue to be, the ongoing capacity of the Ministry.

Capacity to lead and sustain reform

A lesson from countries that have successfully maintained the momentum of reform and sustained initiatives over changes in Ministers and political leadership is that they have established entities charged explicitly with leading and sustaining reforms. Much like the Higher Education Authority recommended in Part II of this report, the implementation unit for primary and secondary education reforms advises the Minister on needed policy initiatives but its principal function is policy execution, not policy development (Barber, M., 2010).

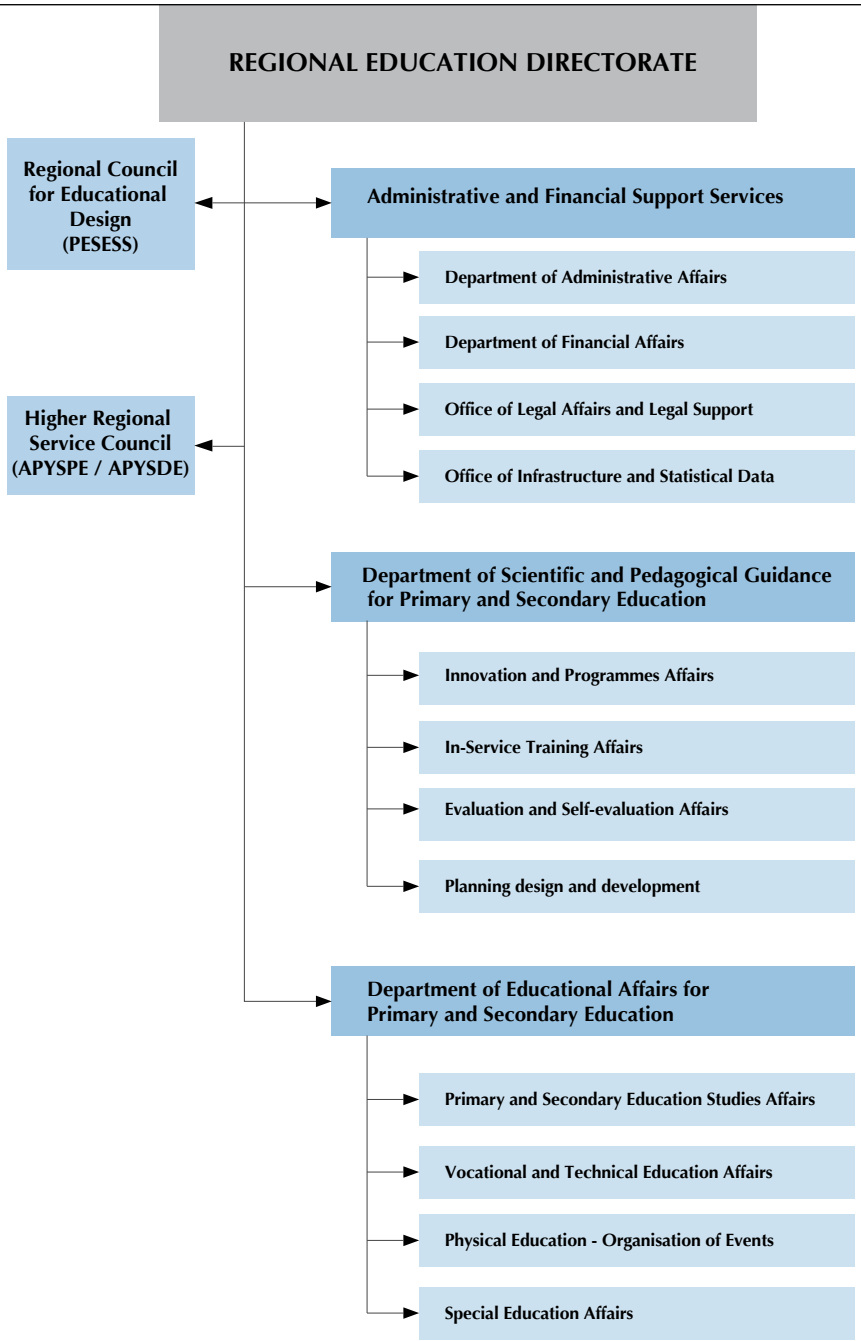
The history of education reform in Greece is one of years of passing laws and of beginning reforms but often not carrying through on implementation. The failure of Greece to make any significant progress in improving its performance compared to other EU and OECD countries is directly related to its difficulties in implementing well-intentioned reforms.

The establishment of such a unit could be highly beneficial for Greece. Under the overall policy direction of the Minister, such an entity could:

- be organised so as to have a status independent of the Minister's immediate political and policy offices, perhaps with a legal status that could insulate it from changes in political leadership;
- have a relatively small staff with an employment status not directly subject to appointment by the Minister, and selected because of credibility with a wide range of stakeholders and extensive experience with implementing large-scale reforms;
- have core analytic capacity to monitor and evaluate implementation; and
- be accountable to the Parliament through periodic reporting on the status of implementation.

▪ Figure 1.20 ▪

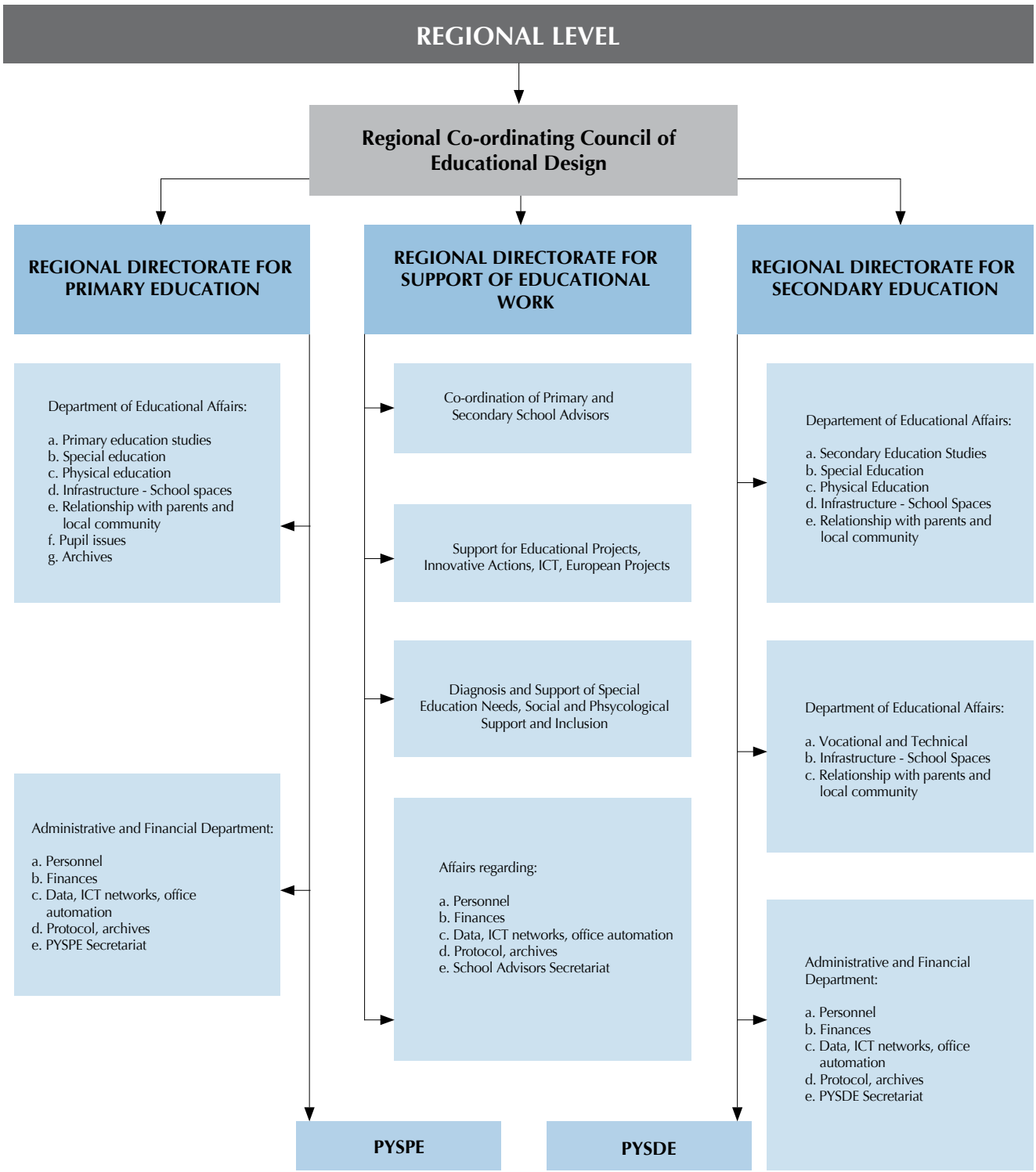
New structure of the Regional Education Directorate (2011)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 1.21 ▪

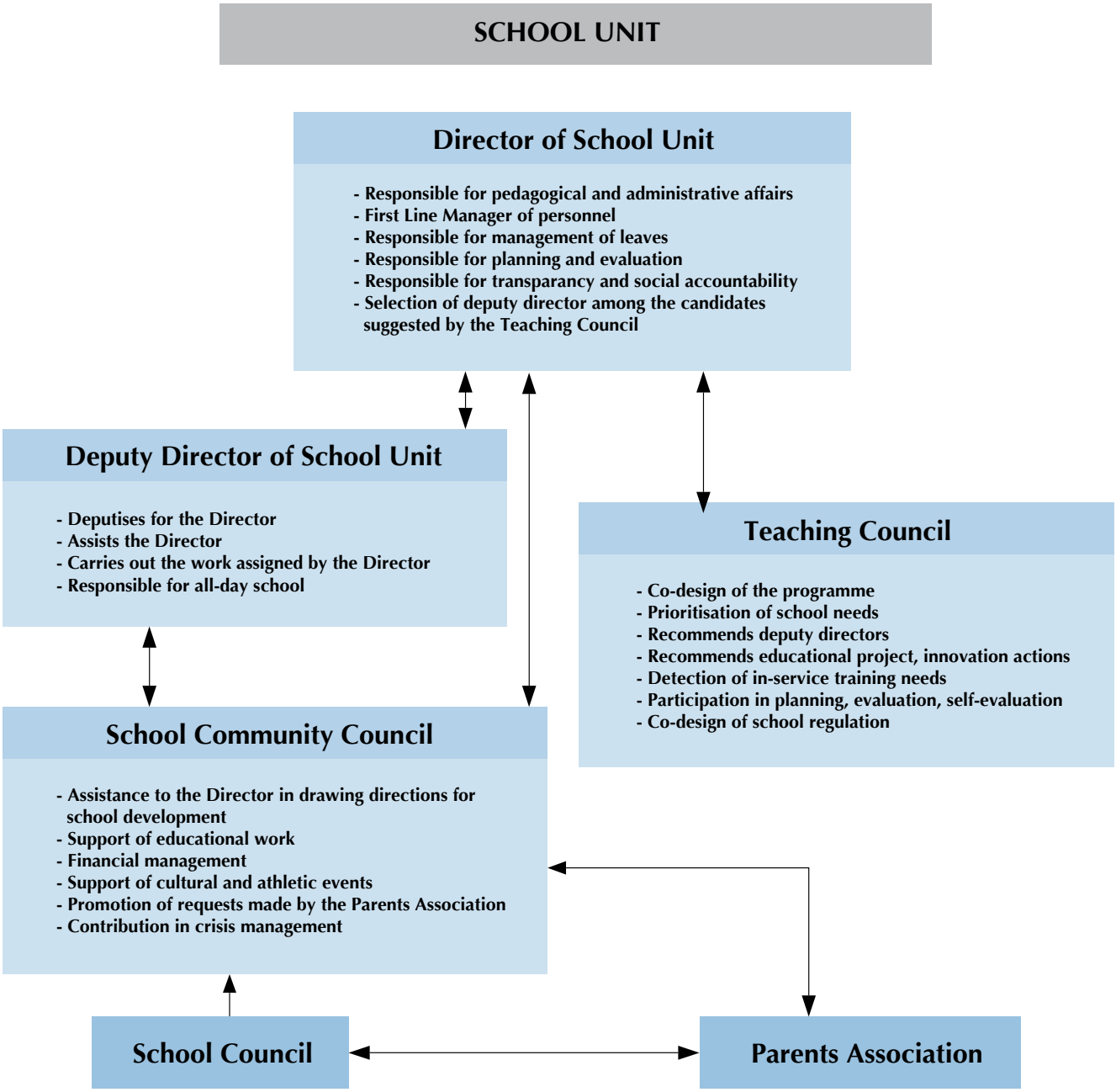
Organogramme of Regional Directorates (transitional structure 2011-15)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 1.22 ▪

Organogramme of School Unit (2011)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

Summary of recommendations

Short term

- Transform the structure and functions of the Ministry.
  - Establish an implementation unit to guide and oversee step-by-step implementation.
  - Downsize the central structures currently devoted to input, pre-audit oriented controls.
- Accelerate the timeline for implementing the recently announced administrative reforms.
- Differentiate the pace and modes of redesign across the system (trying to do everything at once will result in nothing being done or in one-size-fits-all implementation).
  - Establish negotiated performance agreements on a region-by-region basis.
  - Differentiate solutions according to significant differences among regions in problems and capacity to implement reforms:
    - urban versus rural; and
    - multigrade and school clusters versus comprehensive primary and secondary school units.

Medium term

- Within a framework of outcomes-based accountability and post-audit monitoring, decentralise responsibility for managing an integrated performance-based programme budget for human resources, current budget and investment throughout the system – from school unit to region, to the Ministry of Education. Integration of all funding related to education (including funding now through the Ministry of Interior).
  - Assign responsibility for managing budgets to line managers.
  - Hold managers accountable for significant improvement in use of human resources to achieve desired outcomes.
  - Pursue significantly more extensive redesign of school leadership than outlined in recent proposals, drawing on best practices in OECD countries (OECD, 2008a).
- Shift from current resource-allocation system to block grants allocated on a "money follows student" principle to regions, including allocation of budgeted number of positions, flexibility for regions to allocate resources within a framework of outcome, and performance-based accountability.

2

Improving Efficiency in Tertiary Education

Greece lags behind many EU and OECD countries in making fundamental reforms to improve the global competitiveness of its tertiary education system. Over the past decade, Greece has taken only limited actions while other countries are moving ahead to:

- Set forth long-term strategies with goals and benchmarks to improve the quality and efficiency of their tertiary education systems. In Europe these changes are being driven by the Lisbon Strategy and the Modernisation Agenda for Universities: Education, Research and Innovation.
- Make far-reaching changes in governance and finance designed to bring about increased flexibility and responsiveness to national priorities and adjust to the realities of severe constraints in state funding (OECD, 2008b; European Commission, 2008a).

Greece also remains behind many OECD and EU counties in important innovation assets such as the proportion of the population that has achieved a tertiary education degree and the competitiveness of research. In the long-term, the most important path to economic recovery is the development of these core assets. Making more efficient use of existing resources, including the use of human resources, is a critical means to improving Greece's global competitiveness.

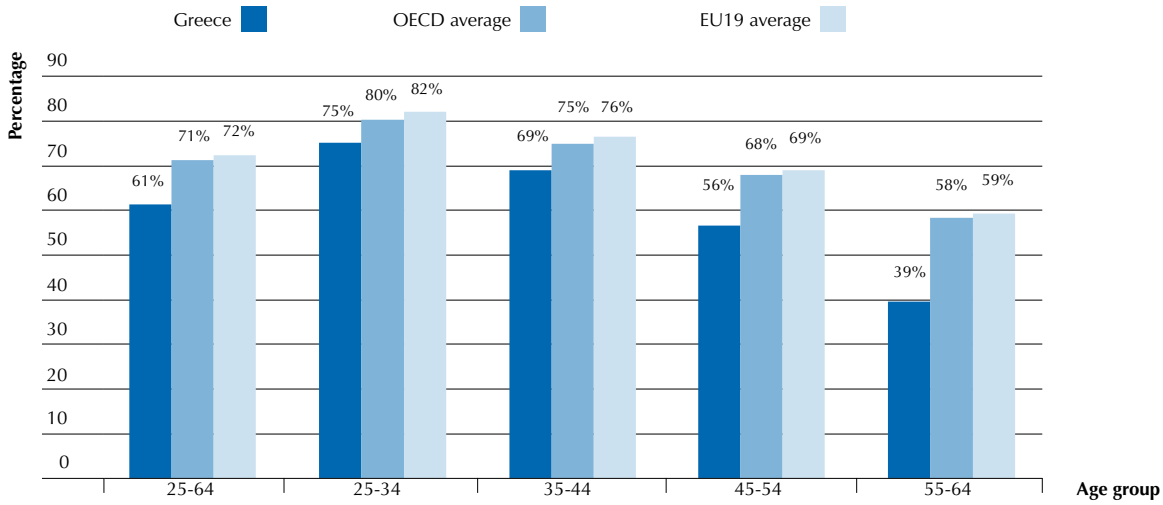
COMPETITIVENESS OF TERTIARY EDUCATION

Educational attainment

The proportion of 25-34 year-olds who have completed at least upper secondary education and tertiary education is larger than among older age cohorts (Figure 2.1), but the educational attainment of the Greek population with tertiary education, an indicator highly correlated with a country's per capita income, continues to lag behind the EU19 and OECD averages (Figure 2.2).

▪ Figure 2.1 ▪

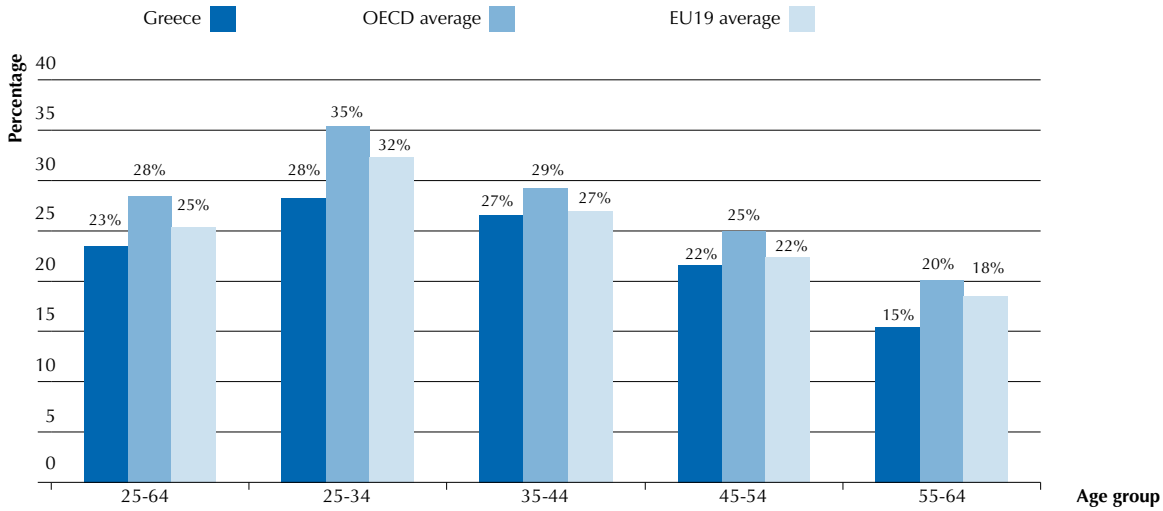
Population with at least upper secondary education (2008)



Source: OECD (2010c), Chart A1.2a.

▪ Figure 2.2 ▪

Population with tertiary education (2008)



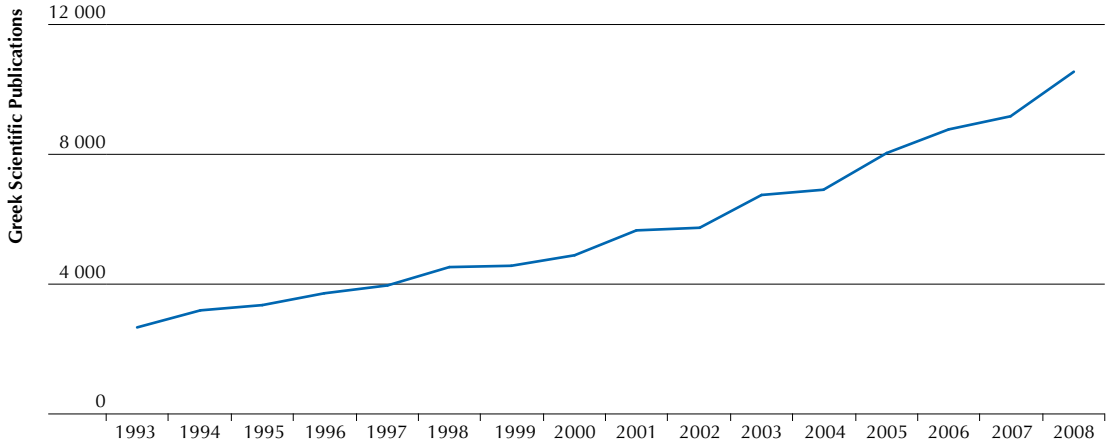
Source: OECD (2010c), Table A1.3a.

Research output

Despite considerable improvement in recent decades, the research output of most Greek tertiary education institutions remains relatively low by international standards. Greek scientific publications increased from less than 3 000 in 1993 to more than 10 000 in 2008 (Figure 2.3).

▪ Figure 2.3 ▪

Research output of Greek tertiary education, including research centres (1993-2008)



Source: Ministry of Education, Lifelong Learning and Religious Affairs,

Greek scientific publications, as a share of OECD and EU publications, increased from less than 0.5% and 1.2%, respectively, in 1993 to more than 1.2% and 2.5%, respectively, in 2008 (Sahini, E., et al., 2010).

Major issues related to efficiency

A number of issues related to the efficiency of the tertiary education system need to be addressed through short- and medium-term actions:

- a comparatively high percentage of upper secondary school graduates entering tertiary education but comparatively low completion rates and an inefficient allocation of students between the university and Technological Educational Institute (TEI) sectors and among academic departments;
- the proliferation of small departments and degree programmes, many enrolling few students and producing few graduates;
- the increasing blurring of mission distinction between the universities and the TEIs;
- misalignment of tertiary education provision (especially at the TEIs) with the needs of the labour market;
- ineffective internal governance and management of institutions resulting from both the persistence of severely out-dated centralised finance and regulatory controls, and dysfunctional internal governance and management structures;
- finance policies that provide limited incentives for improved performance and efficiency and responsiveness of institutions to national strategic priorities;
- lack of steering capacity to ensure that individual institutions as well as the overall size and shape of the system are accountable for implementing essential reforms;
- inadequate data and information systems that are essential for institutional management, accountability, for system strategic leadership and steering; and
- low levels of non-public funding, including limited cost-sharing by students within the constraints of the Constitutional mandate for free education.

Current reforms

Over the past decade, Greece has taken important steps to address some of these issues. Among the reforms were:

- The establishment of the Hellenic Quality Assurance Authority for Higher Education (Law 3374/2005).
- The enactment of a new higher-education framework law (3549/2007), making changes related to quality assurance, accountability, internal assessment processes and autonomy. The law included a potentially significant provision for a new allocation model of state funding. The law requires institutions to develop a four-year development plan that covers all the operational costs,

academic and financial matters, plans for development and investments, as well as the planning for obtaining more diverse funding sources other than the recurring state budget. The law grants the Ministry of Education authority to withhold approval of the institutional plan if the institution fails to comply with the quality assurance requirements of the Hellenic Quality Assurance Authority for Higher Education.

The current government has taken other steps to pursue further reforms. The most significant of these is a draft Higher Education Framework law that would make considerable advances in the autonomy of higher education institutions (HEIs), improve internal governance and management, and strengthen public accountability. Key provisions of the law would:

- increase institutional financial autonomy of institutions, relieving them of some of the centralised regulatory controls by the Ministry of Finance (as described in the introduction of this report);
- strengthen internal governance and management; and
- consolidate departments within larger faculties.

The government is also pursuing reforms within the current legal framework, including:

- improving the data on the higher education system including basic information on student enrolments, graduates, and institutional finances;
- developing a new funding model as authorised by the 2007 law on four-year agreements but never fully implemented; and
- making important steps to spur the closure and consolidation of small departments, especially at the TEIs, by curtailing the assignment of students to these departments for the 2011/12 academic year.

These reforms will be referred to in greater detail in the subsequent sections of this report.

Finally, two laws enacted in 2010 have important implications for tertiary education: a new law on Lifelong Learning (2879/2010) and a law establishing a National Qualifications Framework in accordance with the European Qualifications Framework (3879/2010). Both laws are in the early stages of implementation. While not within the scope of this study, both laws have the potential of contributing to more effective transition of youth to the labour market and to stronger links between tertiary education, especially the TEIs to nationwide and regional labour market training and education needs.

ISSUES RELATED TO EFFICIENCY AND EFFECTIVENESS

High entrance rates but comparatively low completion

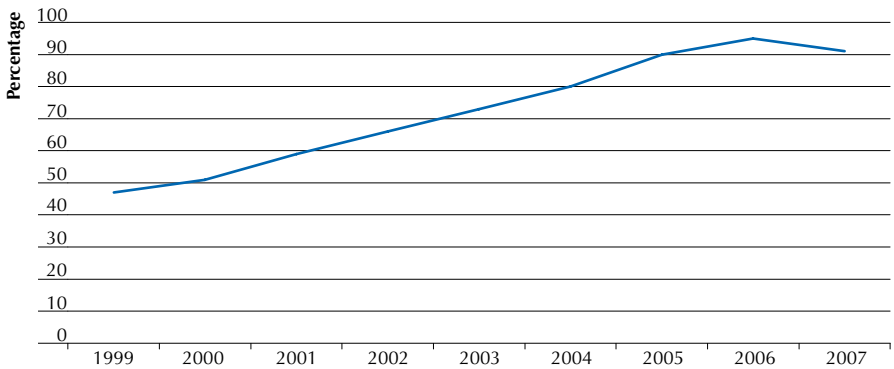
Enrolment trends

Over the past 15 years, Greece has experienced a dramatic increase in enrolment rates in tertiary education. The number of students completing upper secondary education has increased as well as the number of students taking the university entrance examinations. The demand for tertiary education has risen as reflected in the number of students taking the university entrance examinations, but the actual numbers entering the system in any year is determined by the Ministry of Education. The Ministry determines the numbers of students actually given places and the departments to which they are admitted (within *numerus clausus* set by the ministry). Therefore, the number of new entrants to the system each year is determined by Ministerial decision, not directly by student demand.

The enrolment rates increased significantly from 1999 through 2005 and have stabilised and decreased slightly since then (Figure 2.4).

▪ Figure 2.4 ▪

Gross enrolment rate, ISCED 5 and 6 (1999-2007)



Note: Gross enrolment rate is defined as total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year. For the tertiary level, the population used is that of the five-year age group following on from the secondary school leaving.
Source: UNESCO (2011), Institute for Statistics. *http://stats.vis,unesco.org.*

In 2007, the last year for which data were reported to UNESCO, Greece had one of the highest tertiary education enrolments per 100 000 persons in Europe – and, in fact, the world. Table 2.1 shows the enrolments per 100 000 persons in the population in selected EU countries. As other countries had modest increases (and some decreases) in the period from 1999 to 2007, Greece experienced a 52.5% increase.

Table 2.1 Tertiary education enrolment per 100 000 persons in the population

	1999	2007	Percent increase
Finland	5 147	5 920	15.0%
Greece	**3 591**	**5 478**	**52.5%**
Norway	4 260	4 671	9.6%
Sweden	3 818	4 577	19.9%
Ireland	4 089	4 440	8.6%
Denmark	3 617	4 315	19.3%
Spain	4 514	4 081	-9.6%
United Kingdom	3 587	3 928	9.5%
Belgium	3 498	3 781	8.1%
Netherlands	3 006	3 627	20.7%
France	3 464	3 576	3.2%
Portugal	3 545	3 481	-1.8%
Italy	3 180	3 476	9.3%
Austria	3 197	3 172	-0.8%

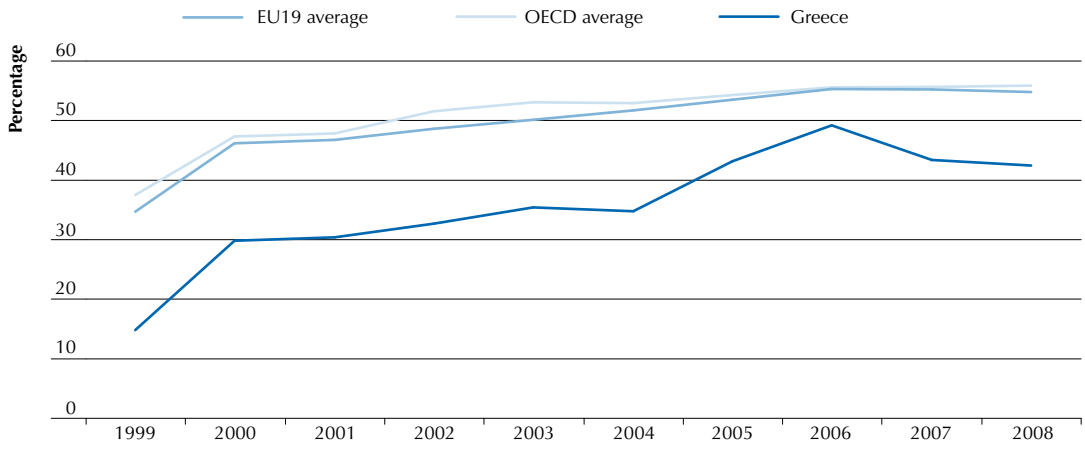
Source: UNESCO (2011), Institute for Statistics. *http://stats.vis,unesco.org.*

Tertiary education entry rates increased sharply in the late 1990s and the early 2000s followed by a levelling off in recent years (Figures 2.5 and 2.6). Again, the fluctuations most likely reflect deliberate government decisions rather than changes in demand.

The highest percentage of tertiary education enrolment is now in the TEI sector. The rate of increase was slightly higher in the university sector from 2005 through 2009, thereby narrowing the differences between the sectors (Figure 2.7). As noted later, an increased proportion of enrolments can have important cost implications.

▪ Figure 2.5 ▪

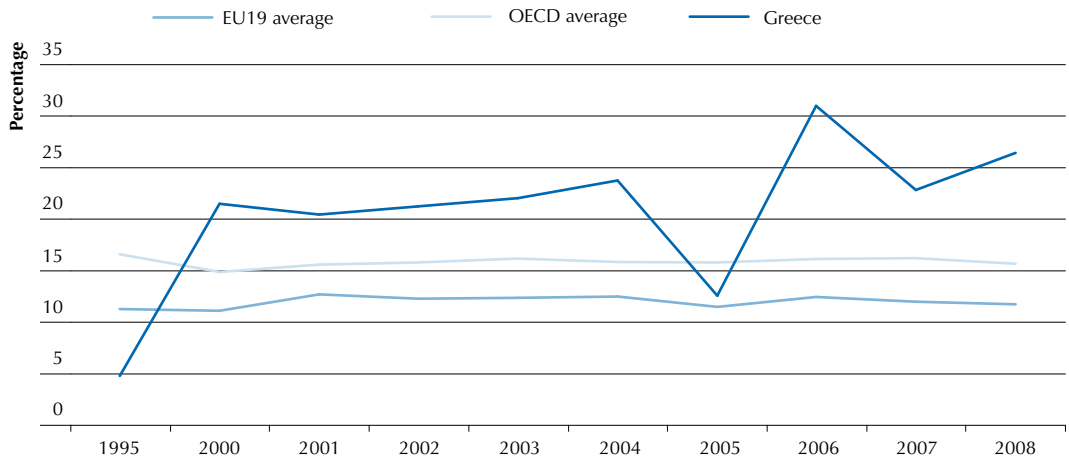
Significant increases in university entry rates



Note: Tertiary-type A programmes (ISCED 5A) are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture. They have a minimum cumulative theoretical duration (at tertiary level) of three years' full-time equivalent, although they typically last four or more years.
Source: OECD (2010c).

▪ Figure 2.6 ▪

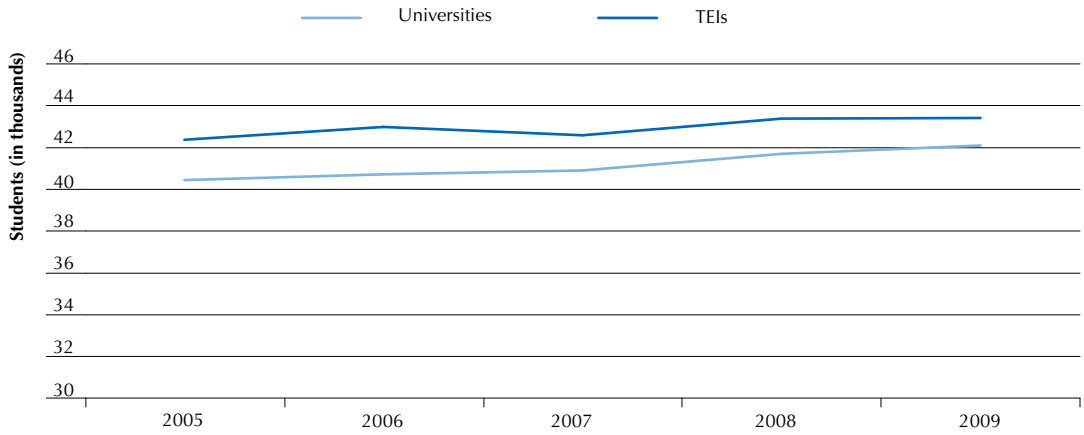
Entry rates in non-university tertiary programmes



Note: Tertiary-type B programmes (ISCED 5B) are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered in the respective programmes. They have a minimum duration of two years full-time equivalent at the tertiary level.
Source: OECD (2010c).

▪ Figure 2.7 ▪

Trends in enrolments by sector (2005-09)



Source: Ministry of Education, Lifelong Learning, and Religions Affairs, January 2011.

Lack of accurate data on tertiary education enrolments and other key dimensions of the sector is a major barrier to an analysis of the efficiency of the education system and especially for the capacity of the Ministry and the HEIs to oversee and manage the system. The Ministry has made great strides in developing a credible dataset for the system. As noted below, sustaining this system must be a central prerequisite for future policy development and accountability. One of the most important misleading data points concerns the number of students actively enrolled. Because there has been essentially no incentive for university students to complete degrees and limited – if any – requirements at universities that students actually attend lectures, or sit for examinations, thousands of students remain technically "registered" but are basically not in attendance. Attendance at TEIs is compulsory. The Ministry's analysis led to the conclusion that only approximately 240 000 students are actively enrolled in comparison to the much larger number of approximately 350 000 who are registered. The criterion for narrowing the number was the number of students who actually signed up to receive free textbooks. As noted below, the Ministry is now using these data to make a more accurate determination of the number of students enrolled in departments. This discrepancy between the number of students who are admitted to departments and those who register and are active students raises a question about the accuracy of the data reported to international organisations and used in international comparisons such as cited above on gross enrolment rates.

Student admissions, placement and transfers

The Ministry tightly controls the number of students who will be admitted in university and TEI departments (Box 2.1). The Ministry establishes the total maximum number of students who will be admitted to the system in the following academic year from those

eligible (e.g. after taking the university entrance examination and meeting other criteria). It also establishes the number of places (*numerus clausus*) available at each specific department (not institution). It is estimated that the maximum number of students admitted in the 2010/11 academic year was close to the number of upper secondary graduates in 2010. However, the number of students admitted includes students who elected to retake the university entrance examination in the hope of getting a place in a preferred university compared to the one to which they were admitted the previous year. It is estimated that 15% of 18-year-olds re-sit the university examinations every year. The Ministry decides on the actual student admissions based on the students' scores and preferences. For the first time, the Ministry did not approve places at specific departments for the 2011/12 academic year, as noted later. Also, departments may have a gap between the number of places available and the number of students who actually register.

An analysis of the scores of students placed in 2010 reveal wide variations in the level of score among departments: by sector, institution and discipline. As one might expect, students placed in departments of the most prestigious universities in Athens have the highest scores. Within a discipline, the average scores vary widely from one university or TEI to another: some attract students who have high scores, while many departments have students with significantly lower scores (and arguably, far lower levels of preparation for tertiary education-level study) (Ministry of Education, Lifelong Learning, and Religious Affairs, *http://www.ypepth.gr/efarmoges/baseis.php)*.

Box 2.1 **Admission requirements for higher education institutions**

Admission requirements to higher technological education:

Candidates for Technological Education Institutions (TEI) and the Higher School for Teachers of Technological Education (ASPAITE) must have successfully completed their secondary-education studies either in the General Lyceum (GL) or in Technical Vocational Educational Schools (TEE) or Ecclesiastic School and must have sat successfully for Pan-Hellenic admission exams, which are different in each case. The number of persons admitted to TEI complies with the principle of "numerus clausus" and is fixed each year by the Ministry of Education, Lifelong Learning and Religious Affairs.

Admission requirements to higher university education:

Admission in the Schools and Departments of Higher Education takes place through the system of the Pan-Hellenic exams. The main feature of this system is that, with regard to the selection criteria of accepted graduates, it is based on the grades of both oral and written exams in the courses of the last year of General Lyceum (GL). Once their final grade is announced, the holders of the attestation may submit a computerised application form where they indicate their preferences in order of precedence as regards the departments to which they want to be admitted. The success of candidates and their admission to a higher education department is determined through combination of: (1) the marks received; (2) the order of precedence in which they indicated their preferred departments; and (3) the number of places available in each department. The number of persons admitted to each university department complies with the principle of "numerus clausus" and is fixed each year by the Ministry of Education, Lifelong Learning and Religious Affairs.

Students can repeat the PanHellenic examinations in subsequent years in an effort to improve their school and the possibility of obtaining a placement in a higher ranked department.

Source: Eurydice (2009a).

Transfers

An additional complication arises from the policy that permits certain categories of students to transfer from the department to which they were initially assigned to another department in the same discipline. The most common pattern is for students assigned to departments in comparatively isolated regions to request transfers to departments in the major metropolitan areas (e.g. Athens or Thessaloniki). The special categories permitted to transfer range from theoretically logical categories of students with health issues to more unusual categories such as students from families with three or more children. The policy in effect for academic year 2010/11 had severe perverse effects, in addition to major problems of equity and transparency. In terms of efficiency, the policy undermined needed planning at both the sending and receiving departments. For example, the sending department may have planned on receiving 80 new students, but only 50 may actually have appeared because the remaining 30 had already applied for transfer before starting at the institution. The receiving department, in contrast, may have been planning to accommodate 50 students but is suddenly faced with an influx of 30 transfers, some of whom may have performed on the university entrance

examinations and in upper secondary education below the levels of the students originally admitted to the department. The Ministry announced a modification of the transfer policy for 2011-12, but the general problem of transfers remains.

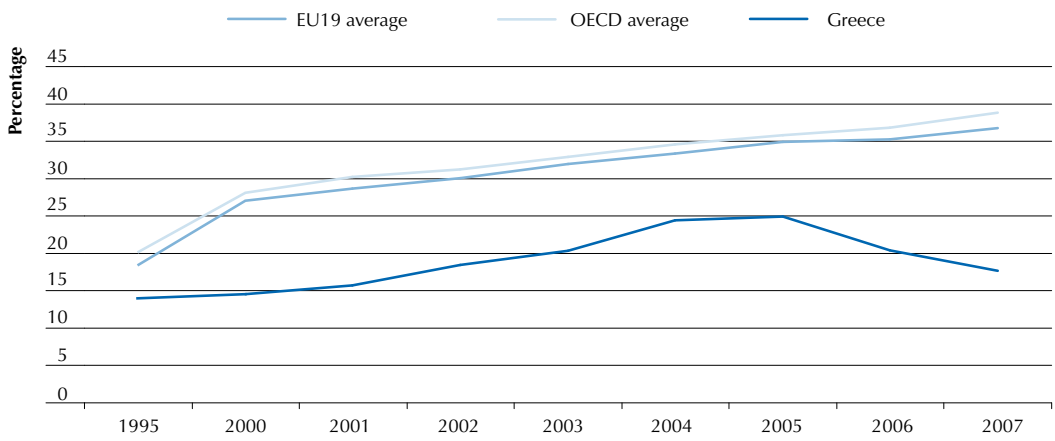
Graduation rates

Tertiary education graduation rates present a mixed picture for Greece. Rates remain below EU and OECD averages at the tertiary-type A level, including the advanced research level (ISCED level 6), but they have improved markedly at the tertiary-type B level in recent years, reaching a level exceeding the EU and OECD averages (Figures 2.8, 2.9 and 2.10). The trends at the tertiary-type B level contrast with a perception frequently noted in the course of the OECD review that the expansion of the TEI sector was leading to large number of students entering these programmes but not completing a degree.

Average graduation rates in Greece mask significant differences among institutions, variations that in other tertiary education systems are indications of differences among HEIs in (1) the level of preparation of entering students; (2) problems in institutional academic management in the structure and quality of teaching, and inadequate student support services and systems; and (3) unique student learning conditions at one institution, but not others (e.g. rural isolation leading students leave to attend an urban institution). Overall completion rates in both sectors appear to have improved (with some variation). In many institutions, dropout rates are high, completion rates are low and the average duration of studies is substantially longer than the minimum required (N=4 years in the TEIs and universities, with exception of some fields) (Figures 2.11 and 2.12).

▪ Figure 2.8 ▪

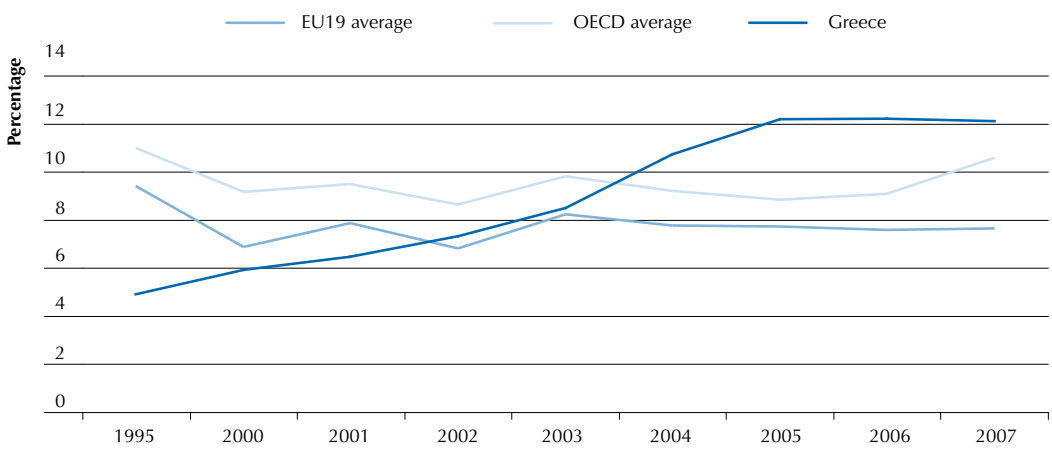
Trends in university-level graduation rates (1995-2007)



Notes: Sum of graduation rates for single year of age, by programme destination
Source: OECD (2010c), Table A3.2.

▪ Figure 2.9 ▪

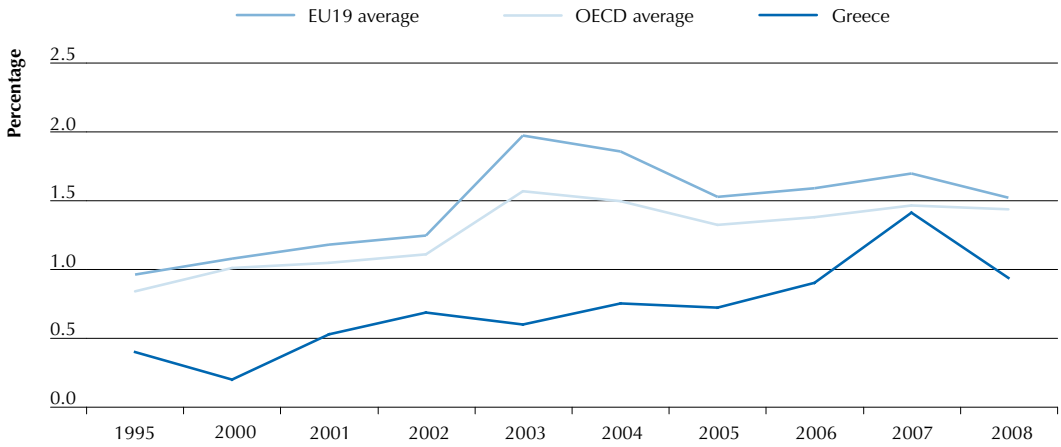
Trends in non-university tertiary graduation rates (1995-2007)



Notes: Sum of graduation rates for single year of age, by programme destination
Source: OECD (2010c), Table A3.2.

▪ Figure 2.10 ▪

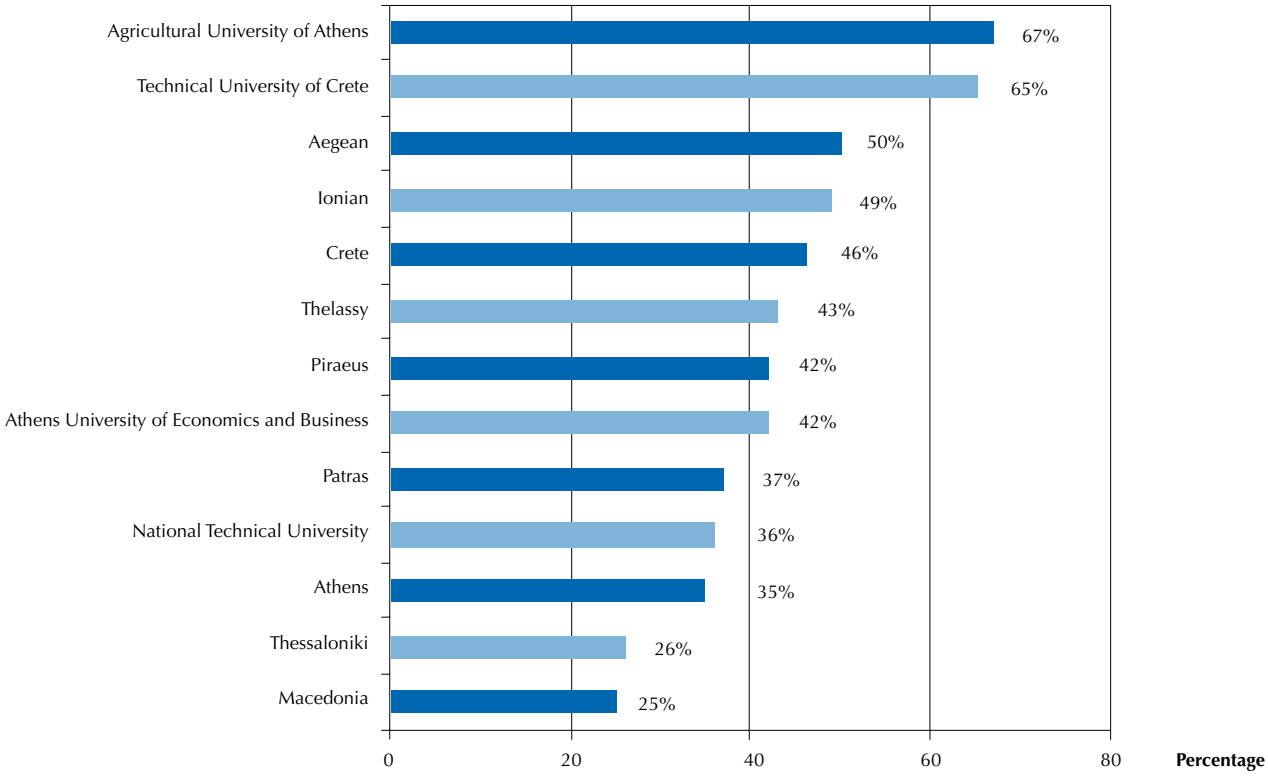
Trends in net graduation rates at advanced research qualification level (1995-2008)



Note: Sum of graduation rates for single year of age at ISCED 6 level.
Source: OECD (2010c), Table A3.7 (web only).

▪ Figure 2.11 ▪

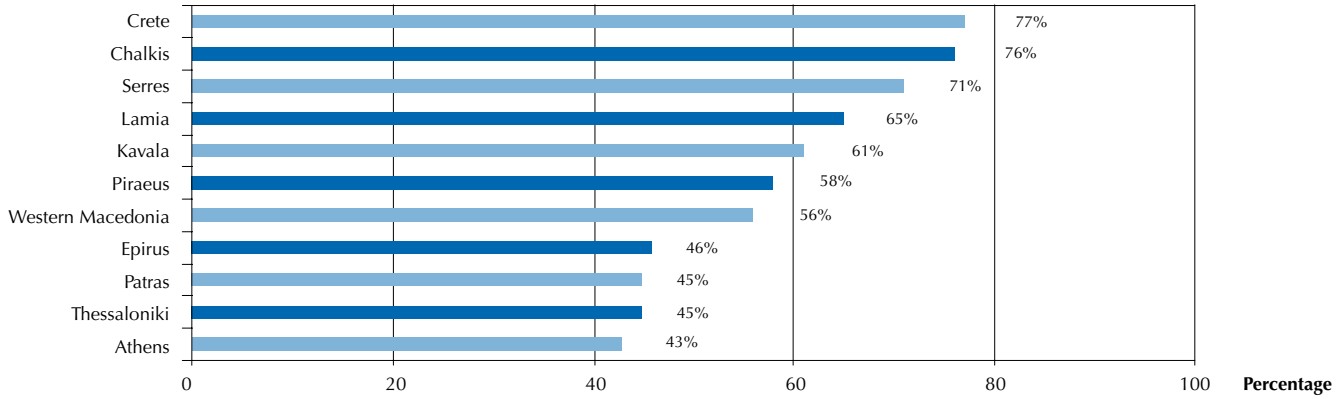
Estimated percentage of first-degree students still enrolled after N+2 years, selected universities (2009)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

▪ Figure 2.12 ▪

Estimated percentage of first-degree students still enrolled after N+2 years, selected TEIs (2009)



Source: Ministry of Education, Lifelong Learning and Religious Affairs.

Returns to further education and employment of tertiary education graduates

Despite the fact that there are no tuition fees, private returns to education in Greece are low in comparison with most EU and OECD countries (estimates vary depending on the treatment of duration of studies, spending on private tuition during secondary education, unemployment after graduation, etc., but in all cases the emerging picture is not encouraging) (Table 2.2). It is not known to what extent perceptions of rates-of-return include students' preferences among different departments; however, the data on departments with low enrolments (see below) suggest that students have a reasonably good idea of the programmes that are more likely to lead to employment.

Table 2.2 Private rates of return to an additional year of education (2004-07)

Educational Group	Male	Female
TEI		
Engineering & Electronics	7.0%	8.4%
Agricultural and Food Technologies	3.6%	1.0%
Business & Economics	5.5%	6.9%
Nursing & Paramedical	5.8%	7.8%
Other	3.7%	9.2%
Universities		
Engineering I (Structural, Architecture, etc.)	5.5%	7.9%
Engineering II (Mechanical, Electrical, Informatics, etc.)	7.1%	6.9%
Natural Sciences	7.4%	7.3%
Mathematics & Statistics	5.3%	7.0%
Medicine, Dentistry & Veterinary	7.9%	8.0%
Horticulture & Forestry	4.2%	3.9%
Law	6.2%	8.1%
Business & Economics	6.5%	6.9%
Social Sciences	3.8%	6.2%
Humanities	5.7%	8.3%
Languages	9.9%	9.8%
Natural Education & Sports	4.8%	6.8%
Education	8.9%	9.9%
Other	7.9%	7.1%
Postgraduate Studies		
MA/MSc	9.3%	11.5%
Ph.D.	8.0%	8.0%

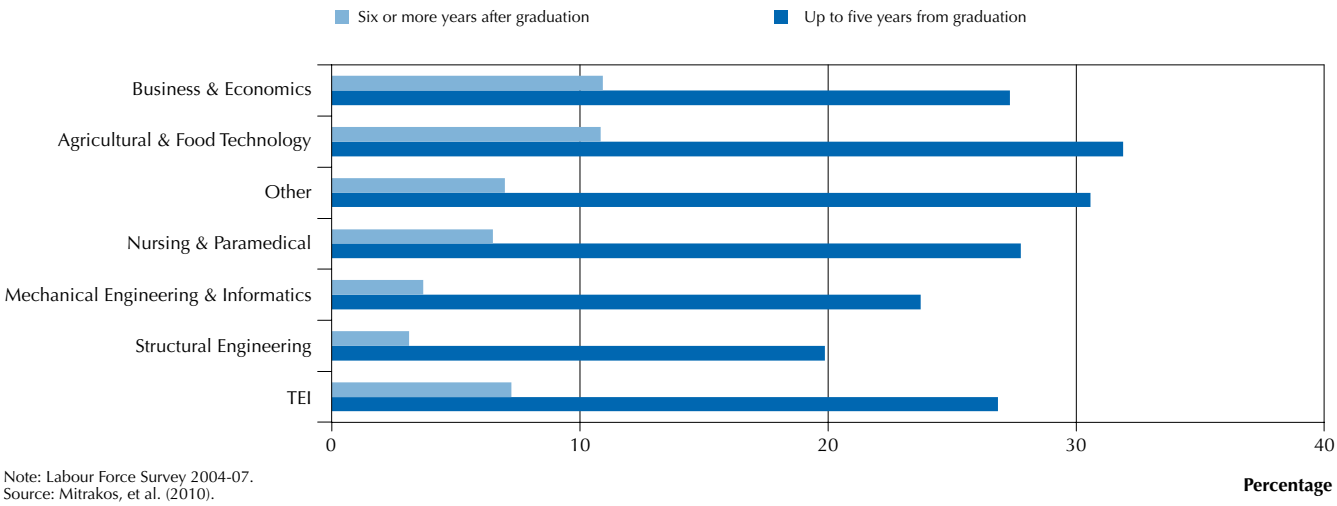
Note: Figures in italics denote estimates derived from statistically not significant coefficients. The above estimates were derived using standard Mincerian equations but should be considered as upper bounds as (a) they do not take into account private spending on tutoring and cram schools, and, (b) they are derived under the assumption that studies are completed in the minimum number of years required (and, further, in the case of TEI that the studies last for three rather than four years). As pointed out in OECD (2010b), *Jobs for the Youth: Greece*, OECD, Paris, these rates are lower in comparison with the rates reported in most OECD countries. They were derived using data covering the period 2004-07.
Source: Mitrakos, et al. (2010).

Data in Figure 2.14 show that tertiary education graduates – like most youth in Greece – have significant difficulties in finding a job for a number of years after graduation. In the long run, though, better educational qualifications act as a shield against unemployment (*vis-a-vis* lower educational qualifications). The estimates are derived using data for the period 2004-07. Unemployment figures are currently substantially higher, but the differential across educational groups has probably been affected very little.

The problems of high dropout rates, low completion rates, graduate unemployment and low returns to education appear to be acute in both the universities and TEIs (see also Figures 2.13-2.15).

▪ Figure 2.13 ▪

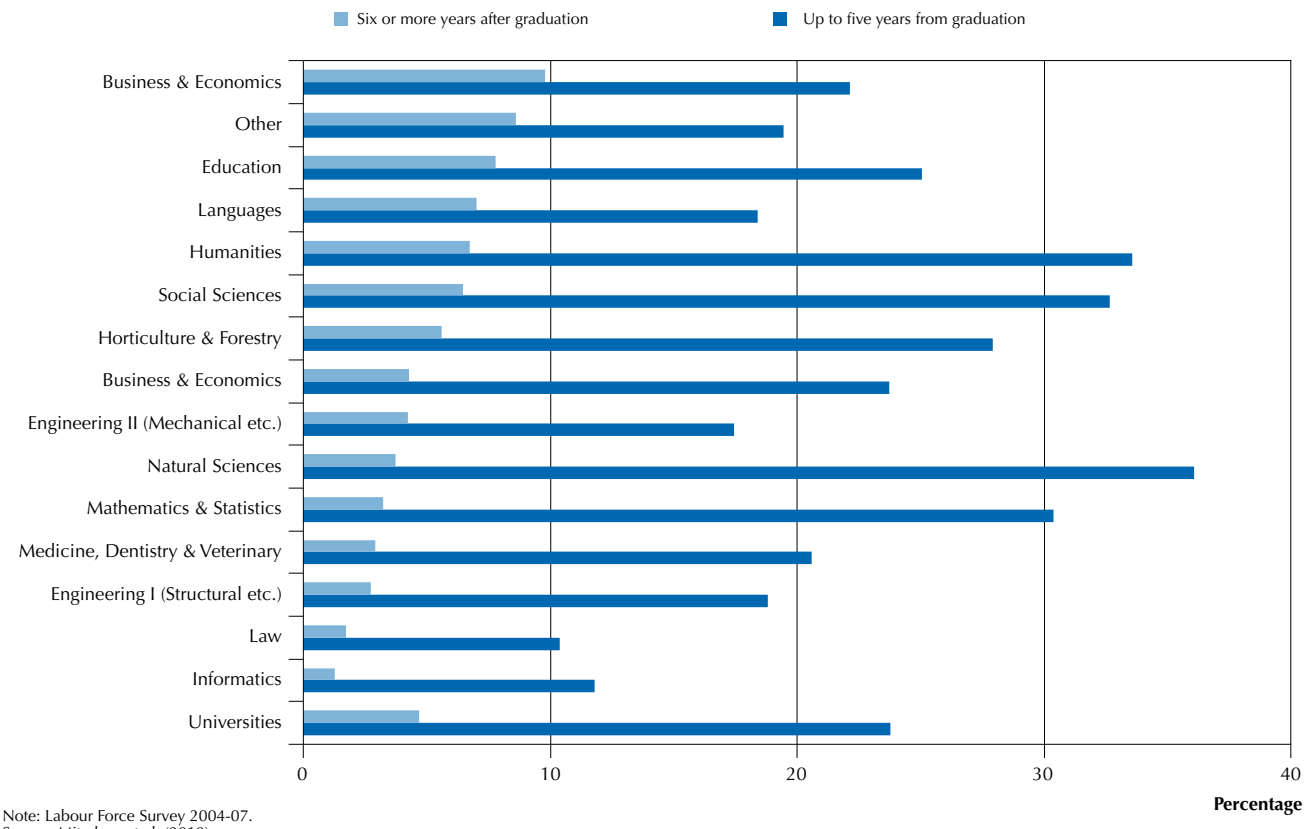
Unemployment rates for graduates of TEIs, by field of study (2004-07)



Note: Labour Force Survey 2004-07.
Source: Mitrakos, et al. (2010).

▪ Figure 2.14 ▪

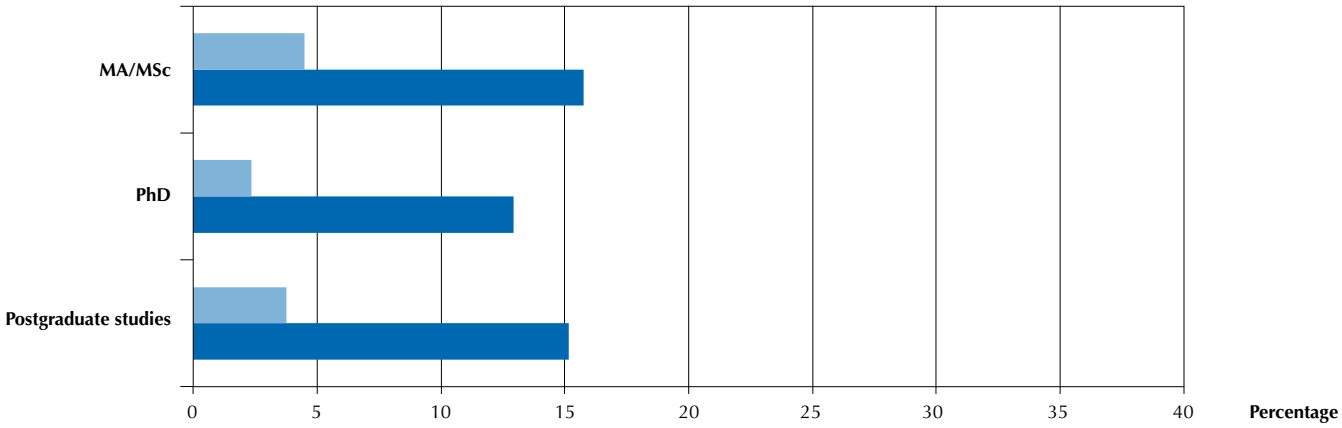
Unemployment rates for university graduates, by field of study (2004-07)



Note: Labour Force Survey 2004-07.
Source: Mitrakos, et al. (2010).

▪ Figure 2.15 ▪

Unemployment rates at the post-graduate level (2004-07)



Note: Labour Force Survey 2004-2007.
Source: Mitrakos, et al. (2010).

Lack of differentiation and dispersion of resources over many small institutions and departments

The Greek system of higher education comprises many small, highly fragmented academic departments with high levels of duplication, low economies-of-scale, a mismatch between numbers of students and numbers of academic and support staff, and widely varying levels of performance in graduating students. The proliferation of departments has occurred with limited interaction with or reference to the changing needs of the labour market. The problems are at several levels:

- Within regions: Greece has experienced an increase in institutions across the country, but even more significant in terms of efficiency, both universities and TEIs have established branches, often with only one or two departments, in small cities within their regions.
- Within institutions: The basic unit of institutions is the department: academic staff appointments, student placement, and academic policy are formed primarily at this level. Limited, if any, means exist for staff and student mobility among departments and for academic management within larger units commonly found in universities in other countries at the school, college or institutional levels.
- Within similar disciplines: degree programmes in specific disciplines and professions have splintered into smaller, only marginally differentiated programmes, perhaps in order to justify creating new departments and increased numbers of academic positions.
- Between sectors: The TEI sector is increasingly offering academic programmes with striking similar profiles as similarly named academic programmes in the university sector. Greece faces a significant problem in mission-drift of the TEI sector toward the academic profile of the university sector.

The following analysis, based on data from the Hellenic Higher Education Quality Assurance Authority, illustrates these points.

Geographic dispersion of small institutions and departments

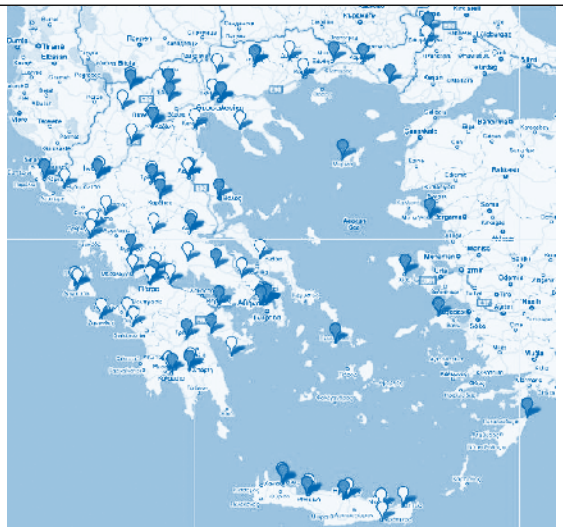
In the past decade, Greece has experienced a dispersion of small institutions and departments throughout the country (Figure 2.16). The expansion has occurred in both the university and TEI sectors.

Prior to 1960, eleven universities had been established. Between 1960 and 1992, another ten universities were established, the last being the Hellenic Open University, established in 1992. Then, from 2000 to 2009, another five universities were established (Table 2.3).

The proliferation of small departments of both universities and TEIs, many located in municipalities separated from the main campus, is an important characteristic of the current system (Tables 2.4 and 2.5). Twenty-one universities (not including the Hellenic Open University and the Hellenic International University) have 264 departments in 39 municipalities. Nine of these universities have sites in two or more municipalities and some of these sites have only a single department. The 16 TEIs have 212 departments in 46 municipalities. Thirteen of the TEIs have sites in two or more municipalities. As in the case of the multi-site universities, several of the TEI sites have only a single department.

▪ Figure 2.16 ▪

Geographic distribution of institutions (2009)



Note: Dark markers represent the location of university departments and light markers represent TEI departments.
Source: Hellenic Quality Assurance Authority for Higher Education, 2011.

Table 2.3 Universities established since 2000

2000	University of Peloponnese
2003	University of Western Macedonia
2003	University of Central Greece
2005	International Hellenic University (in Thermi near Thessaloniki)
2009	University of Western Greece

Source: Hellenic Quality Assurance Authority for Higher Education, 2011.

Table 2.4 Number of university departments and number of municipalities with sites (2009)

University	Total number of departments enrolling students	Number of municipalities
University of Thrace	20	4
Aristotle University of Thessaloniki	40	3
University of Macedonia	10	3
University of Western Macedonia	5	2
University of Ioannina	14	1
University of Thessaly	16	4
Ionian University	6	1
University of Patras	21	1
University of Western Greece	3	1
University of Central Greece	2	2
University of Peloponnese	10	5
University of Aegean	17	6
University of Crete	17	2
Technical University of Crete	5	1
National University of Athens	33	1
National Technical University, Athens	9	1
Athens University of Economics	8	1
Agricultural University of Athens	6	1
Panteion University, Athens	9	1
University Of Piraeus	9	1
Harokopion University, Athens	4	1
Total	264	39

Note: Not included are Hellenic Open University (E.P.A.) and Hellenic International University.
Source: Hellenic Quality Assurance Authority for Higher Education, 2011.

Table 2.5 Number of TEI departments and number of municipalities with sites (2009)

TEI	Total number of departments enrolling students	Number of municipalities
TEI Kavala	11	3
TEI Thessaloniki	23	4
TEI Serres	7	1
TEI West Macedonia	18	5
TEI Epirus	13	4
TEI Larissa	19	3
TEI Ionian Islands	8	4
TEI Mesologiou	8	2
TEI Patras	17	4
TEI Lamia	7	4
TEI Chalkis	7	2
TEI Kalamata	8	2
TEI Crete	18	6
TEI Athens	33	1
TEI Piraeus	10	2
Aspaite	5	1
Total	212	46

Source: Hellenic Quality Assurance Agency for Higher Education, 2011.

The pressures for expansion of the number of universities and TEIs and the departments in dispersed municipalities have not come necessarily from increased demand. The principal force for expansion, according to Greek authorities, has been from mayors and other local officials who have sought the location of a university or TEI site as a source of local economic development. The presence of students in a community is seen as a potential source of revenue for local businesses.

The development of branch or regional campuses, often in response to pressures from local political and business leaders, is a common phenomenon in many countries. This is especially a characteristic of countries with many dispersed communities. In most countries, the rationale for these campuses is the need for accessible educational and training opportunities for the regional population – both recent school-leavers and adults, for lifelong learning. But these are not the functions of most departments of either the TEIs or universities in Greece. While a small percentage of the students may come from the immediate region, most

Table 2.6 Examples of TEI departments with small number of students (2010)

TEI	Location	Department	Number of students registered in regular years	Number of students registered in regular time plus 2 years
Lamia	Amfissa	Tourism	41	271
Messolonghi	Messolonghi	Aquaculture and Fisheries	61	243
Epirus	Igoumenitsa	Aquaculture and Fisheries	62	337
Epirus	Igoumenitsa	Tourism	67	156
Kriti	Herakleion	Greenhouse Crops and Floriculture	89	277
Ionian Islands	Argostoli	Biological Agriculture and Food Technology	90	238
Kriti	Herakleion	Tourism	96	384
Larissa	Karditsa	Plant Production	100	339
Messolonghi	Messolonghi	Greenhouse Crops and Floriculture	100	282
Ionian Islands	Lixouri	Sound and Musical Instruments Technology	101	211
Larissa	Larissa	Biosystems Engineering	104	345
Epirus	Arta	Animal Production	108	328
Kriti	Herakleion	Crop Science	112	360
Epirus	Arta	Crop Science	119	423
Larissa	Larissa	Animal Production	119	514
Epirus	Arta	Floriculture and Landscape Architecture	120	256
Kriti	Chania	Natural Resources & Environment	125	287
Lamia	Karpenisi	Forestry and Natural Environment Management	127	297
Larissa	Larissa	Tourism	132	433
Ionian Islands	Zakynthos	Environmental Technology and Ecology	139	318

Note: Only Departments operating for more than seven years have been included.
Source: The table is based on data provided by the Ministry of Education, Lifelong Learning and Religious Affairs.

come from throughout Greece. As described above, student placement in Greece is on a national basis to specific departments, not to institutions. While a student may express a preference to be placed at a department geographically accessible to his or her family, the actual placement is based on other considerations, especially the student's university entrance examination score. For example, a student from Patras may express a preference to enrol in a computer science department in Athens but, because of his or her scores, the student may be placed at the University of Central Greece in Lamia located 214 kilometres north of Athens and 190 kilometres over mountainous roads east of Patras. The desire of such students to attend a university in Athens contributes significantly to the pressure for transfers, as described earlier.

Too many low-enrolment departments

The consequences of this dispersion of university and TEI departments are extremely small departments in relatively isolated locations (Table 2.6) and major problems in reaching economies of scale in numbers and qualifications of academic staff, equipment (especially for the TEIs) and essential academic, student, and administrative support services.

Data released by the Ministry of Education in announcing decision to merge or close TEI departments illustrate several of the issues: the contrast between the number of students who are technically admitted in the department based on their preferences and scores, and the number of students who actually enrol (as evidenced by applying for free textbooks); the numbers who graduate; and the graduation rates (Table 2.7). The normal time to complete a degree is four years (N=4) and a reasonable expectation would be of a graduation rate of six years (N+2). In every case, the number of students actually enrolling is a fraction of those placed in a department and technically admitted.

Table 2.7 Illustration of TEI departments with low enrolments and low graduation rates (2010)

Indicators	Departments						
	Animal Production TEI West Macedonia (Florina)	Plant Production TEI West Macedonia (Florina)	Animal Production TEI I Epirus (Arta)	Fisheries and Aquaculture TEI I Epirus (Igoumenitsa)	Fisheries and Aquaculture Technologies TEI I Thessaloniki (Moudania)	Greenhouse Crops and Horticulture TEI Kalamata (Kalamata)	Plant Production TEI Kalamata (Kalamata)
Number of first-semester students in 2010/11 fall semester textbooks procured by the service Eudoxus (The most reliable indicator of the actual number of students actively enrolled)	18	50	31	12	35	39	71
Number of students of all remaining semesters who procured textbooks by the service Eudoxus	57	53	47	10	55	77	62
Maximum number of potential entrants (i.e. numerus clausus) 2010/11	300	200	250	200	100	200	250
Number of students who qualify to register 2010/11	220	200	119	86	101	179	251
Average number of graduates per year (follow-up for 6 years, unless otherwise noted)	46	35	42	32	21	38.7	55.0
Average time of graduation (follow-up for 6 years, unless otherwise noted)	6.2	7.7	7.0	6.7	6.5	7.0	6.4

Note: The data on number of students who qualify to register for 2010/11 reflect the number of students who based on their scores in the entrance examinations and declared preferences are placed in the departments – some of them might decide not to register though. The number of first-semester students who obtained free textbooks in the fall of 2010 is the estimate of the students who actually enrolled as active students (for example, only 18 students of 300 for animal production). The number of students obtaining free textbooks for the remaining semesters is an estimate of the number of students who were actually enrolled in the 2010/11 academic year.
Source: Ministry of Education, Lifelong Learning and Religious Affairs, 28 March 2011.

Marginal differentiation among departments within disciplines

In many institutions, there are departments that are only marginally differentiated in terms of their academic disciplines and (undergraduate) programmes of study offered (Box 2.2). Consolidation of such departments may well result in large economies of scale, although care should be taken since some of these departments already have large numbers of students. In almost all universities there are separate departments of primary and pre-primary education. Where consolidation of departments may not be appropriate, it would be possible to consolidate similar departments in a larger unit, such as a school encompassing departments from several related disciplines.

Moreover, each department awards only one undergraduate degree, and there is no co-operation between departments to provide joint-honours undergraduate degrees to their students. In fact, several departments do not correspond to particular scientific disciplines and were established primarily in order to provide undergraduate programmes that could otherwise be provided jointly by two separate departments serving different but clearly delineated disciplines.

Box 2.2 **Examples of departments with similar disciplines**

- University of Thessaloniki: two separate Departments of Physical Education and Sports (one located in Thessaloniki and one in Serres).
- Athens University of Economics and Business: Department of Economics, Department of International and European Economic Studies, Department of Business Administration, and Department of Management Science and Technology.
- University of Piraeus: Department of Business Administration and Department of Industrial Management.
- University of Macedonia: separate departments of Business Administration, Marketing and Operations Management (located in Edessa) and Technology Management (located in Naousa).
- University of Crete : separate Departments of Mathematics and Applied Mathematics.
- University of Peloponnese: Departments of Telecommunications Science and Technology and Computer Science and Technology.

Many similar – and even more striking – examples can be found in TEIs.

Significant variation in staff/student ratios in departments of the same field

When considering individual disciplines, the departments of some institutions are considerably larger than similar departments of other institutions (Table 2.8). The corresponding differences cannot be justified by differences in student numbers and, in fact, some of the former departments are substantially larger than similar departments in most European countries.

Table 2.8 Example of unequal staff/student ratios in departments of the same field: physics (2009)

University	Athens	Thessaloniki	Patras	Ioannina	Crete
Undergraduate students	1022	819	631	663	497
Staff	102	89	56	51	36
Students/Staff	10.0	9.2	11.3	13.0	13.8

Source: Hellenic Quality Assurance Authority for Higher Education and Ministry of Education, Lifelong Learning, and Religious Affairs.

Blurring of mission distinction between the universities and the TEIs

There are increasing pressures to blur the distinction in mission between the universities and TEIs, a relatively common phenomenon in countries with binary systems (e.g. Ireland and the Netherlands). The pressures for these changes come from within the TEIs from both academic staff and students. The convergence is apparent in the trend of TEIs to offer academic programmes with titles that are similar to those in universities in fields such as computer science or information technology, business management, and engineering technology. Pressures come from academic staff who wish to have the added prestige and academic standing of being "university professors" with reduced teaching loads and increased opportunities for research. Pressures from students arise in part because a graduate with a university degree (for example, in a field such as information technology) can earn a higher salary (according to official wage guidelines) than a TEI graduate in a similar field.

The danger for Greece is that the TEIs will drift further away from the core mission of meeting the country's needs for skilled technicians. In terms of efficiency, there are significant cost implications of a drift of TEIs toward a university mission. An analysis of the difference between the cost per student at universities compared to TEIs found that in 2005 the annual cost per student in a university was EUR 6 339, while the corresponding TEI figure was only EUR 2 045. The study found that the cost per student at TEIs was even lower than the cost per student at the upper secondary level. The study noted that the "true" cost per student at a university may be lower since the study included research funds, while the "true" cost per student at the TEIs may be higher because the calculations included students who may have moved to universities before completing their TEI studies.

Lack of capacity to steer the system and to govern and manage institutions

Greece has limited capacity to steer and govern the higher education system in order to achieve significant improvement in the overall system and institutional efficiency and effectiveness. A central barrier to improvement is the highly centralised governmental control of key dimensions of the system and the limited capacity for more decentralised management of resources – human, financial and physical – at all levels. The long-standing issues in institutional management have been thoroughly documented by multiple international studies, including the OECD 1997 review and comparative studies of education governance in Europe (OECD, 1997; European Commission, 2008a).

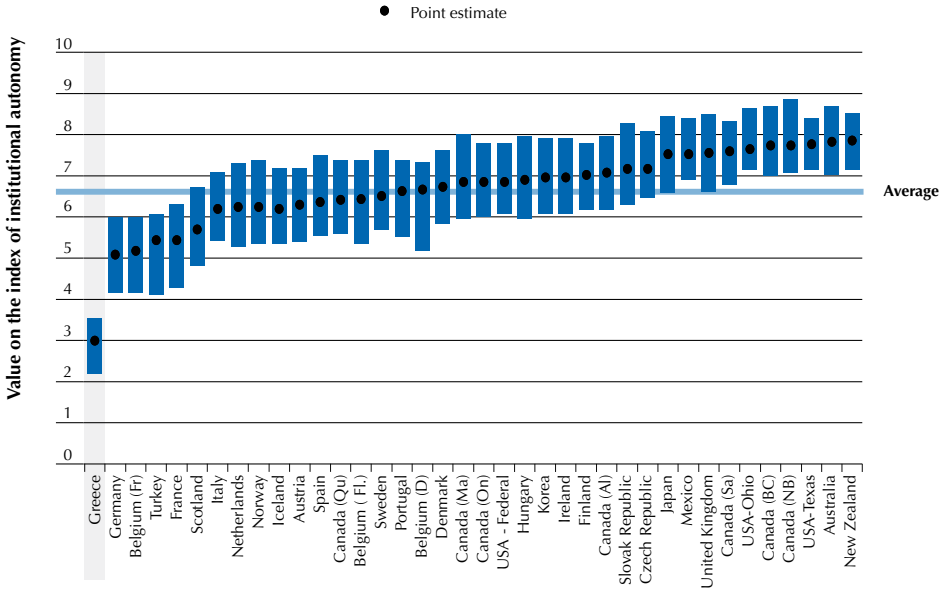
An international committee of prominent academic leaders from several countries recently examined higher education in Greece and made recommendations for immediate reforms in the governing structure to address fundamental barriers to the global competitiveness of Greek higher education. The following are excerpts from the committee's findings on the governance and management (see *http://notthemajorityopinion.blogspot.com/2011/04/report-if-international-advisory.html*):

- Greece's system of higher education suffers from a crisis of values as well as outdated policies and organisational structures. The tragedy is that leaders, scholars, students and political parties that aim to promote the public good have been trapped in a system that subverts the goals they seek, corrupts the ideals they pursue and forsakes the public they serve.
- A number of political decisions have led to governance policies within the university that provide an imbalance of power and control on academic issues and decisions. For example, students have 40% of the vote in the selection of university administrators. This imbalance of governance has led to decisions that are politically motivated and have not benefited the quality of the academic enterprise.
- Greek university campuses are not secure. While the Constitution allows university leaders to protect campuses against elements that seek political instability, rectors have been reluctant to exercise their rights and responsibilities, and to make decisions needed in order to keep faculty, staff and students safe. As a result, university leaders and faculty have not been able to be good stewards of the facilities they have been entrusted with by the public.
- The politicisation of the campuses – and specifically the politicisation of students – represents a beyond-reasonable involvement in the political process. This is contributing to an accelerated degradation of higher education.

Another study compared the governance of Greek higher education with the structures in the other 18 of the EU19 countries as well as Japan and the United States. The study developed a composite indicator "supply indicator" to show the relative differences among countries in institutional autonomy. The individual indicators included input flexibility, selection of students, budget autonomy, staff policy, output flexibility, accountability, evaluation and funding rules. As shown in Figure 2.17, the study identified Greece as a significant outlier with less autonomy (using data for 2005-06) than any other country included in the analysis (Martins, et. al., 2009).

▪ Figure 2.17 ▪

Composite supply indicator of institutional autonomy in tertiary education (2005-06)



1. The bars correspond to the 95% confidence intervals obtained through the random weight technique.
2. Belgian regions are: Fr: French Community; Fl: Flemish Community; and D: German-speaking Community. Canadian provinces are: Al: Alberta; BC: British Columbia; Ma: Manitoba; NB: New Brunswick; On: Ontario; Qu: Québec; and Sa: Saskatchewan.
3. In interpreting this value for Federal provisions concerning supply flexibility and accountability it should be taken into account that federal funds only account for a small share of total funding of US tertiary education institutions.

Source: Oliveira-Martins, et al. (2007), *The Policy Determinants of Investment in Tertiary Education*.

The main issues are in four inter-related areas:

- the lack of capacity for effective institutional governance and management;
- inefficient allocation of human and financial resources;
- limited capacity to steer the system to achieve essential efficiencies and improved performance and to sustain the momentum of reform over changes in governments; and
- limited non-public funding and cost-sharing to complement governmental subsidy.

Institutional governance and management

From the perspective of the OECD, several issues severely undermine the capacity of Greek institutions to achieve improved efficiencies:

- the highly fragmented academic structure with the department as the principal academic unit;
- weak leadership and management by elected rectors and dysfunctional university-wide governance; and
- highly fragmented external governmental policies regarding human resources and budget execution that undermine the ability of institutions to assume responsibility and be held accountable for improving internal efficiencies.

The Ministry of Education's document, "Deliberation Regarding Greek Higher Education" (Hellenic Republic, Ministry of Education, 2010) provides a succinct outline of the principal issues confirmed and reinforced in the course of the OECD review. The following are key findings in that document:

- Internal administration and management fails. The current internal administration and management of institutions, of their facilities, departments, administrative services and the services they provide for students are out-dated. The way the institutions' management bodies are elected, and the restriction of their accountability to those who are managed, create inefficient dependencies and inertia.
- The fundamental and Constitutional rights of members of the academic community are not guaranteed:
  - teachers and students are often held hostage and in deadlock;
  - violence, partisanship and favouritism are not deterred; and
  - public property is not protected.
- The institutions are unresponsive to needs and expectations of the broader society for education, production and dissemination of knowledge and qualitative research with relevance, not only locally but also internationally.
- Disagreements, disputes and conflicts among the members of the academic community or among the members and bodies of the institutions in many cases, are not effectively settled by the institution itself. Drawing the Ministry of Education into resolving these conflicts undermines the institutions' independence.

Inefficient allocation of human and financial resources

The highly centralised financial and public employment controls imposed by the Ministry of Finance and executed through the Ministry of Education, as described in the section of this report on Context, seriously undermine the effective management of HEIs and the overall efficiency of the tertiary education system. Even though they have Constitutional autonomy and a status as "public law entities" with less line-item control of the regulation operating budget than most public agencies, they are still subject to extensive reporting requirements and the oversight of the Court of Audits. Public funding is split into four major categories: salaries and related expenses for public servants, the regular operating budget (not including salaries), the investment budget, and special accounts.

The most important potential source of improved efficiency in a university lies in the use of academic staff time – in how the time of the academic and research staff is allocated to teaching and research. In Greece, however, HEIs have essentially no flexibility regarding the salary portion of the budget, the largest portion of the expenditures from the state budget (as much as 70%). The request for new positions begins at the department level and then goes through approval levels of the university and to the Ministry of Education. Once approved, universities have no flexibility to move positions between departments to adjust for changes in student numbers, the scope of research projects and other differences in workload. The approval of specific appointments, while made at the departmental level, must then be approved at each level in order to ensure compliance with relevant regulations. Whether the positions are ultimately funded may depend on decisions at the level of the Ministry of Finance. Once a position is approved, payments are made directly to the individual and not through the institutions. Institutions have flexibility regarding the expenditure of the general operating budget (approximately 30%).

The consequence of the highly fragmented finance policies is to make effective financial management of HEIs impossible. The controls undermine any possibility for delegated responsibility and accountability. There is no global or comprehensive budget for

an institution, encompassing all expenditures from all revenue sources. Hence, there is no capacity for strategic budgeting aimed at efficient use of resources and trade-offs across departments and functions. The one portion of available revenues is in special accounts (as described earlier in the Context section) for research funding and other non-state revenue. At the time of the OECD 2008 journal paper on the Greek budget processes (Hawkesworth, et. al., 2008), these revenues were basically "off budget" in state oversight and transparency was focused only on those expenditures financed by the state. While there may have been progress toward a "global" or comprehensive budget (encompassing all revenue resources) as recommended by the OECD, HEI's retain considerably more flexibility in the use of special accounts compared the general state budget.

The complex salary structure for academic staff illustrates the fragmented structure of higher education finance. For example, the formal base salary of academic staff constitutes, in many cases, less than half of the total compensation. Instead of a salary, remuneration consists to a considerable extent of special allowances for various functions and activities that, in contrast to the base salary, are not indexed. Social insurance contributions are not withheld on allowances and allowances are not pensionable. As a result, the pension replacement ratio for academics is one of the lowest in Greece.

Resource allocation and accountability measures provide limited incentives for improved performance, efficiency and responsiveness of the institutions to national strategic priorities. As previously mentioned, the budget includes three elements: operations, new positions, and investment (infrastructure). Historically, the funding was based primarily on the previous year's budget. Initially, after the law was passed in 2007 establishing four-year development plans or agreements with the institutions, no objectives were established for the agreements and the allocation model remained the same. In 2008, the rectors agreed on an algorithm for allocating only new funding for the operating portion of the budget, including 50% for the number of students enrolled for the normal study period, 25% for the number of staff, 15% for the type of study (weighted), and 10% for various other variables (e.g. multi-campus institutions, small institutions, etc.). In 2009, the formula was applied for new funding and it revealed that some institutions would get less than they got before – a "hold-harmless" provision was agreed in which no institution received less than the previous year even though the application of the funding model would have resulted in a reduction for some institutions. However, at the same time, there was a cut in salaries. In 2010, as the economic situation worsened, there was a 30% across-the-board cut in funding, and no new posts were approved.

Limited capacity to steer the system

Greece lacks the capacity for steering the nation's higher education system and for bringing about the dramatic improvements needed in the system's efficiency and performance. Change in higher education requires years of sustained, consistent and persistent efforts at every level of the system. Enactment of a new framework law for higher education is only a first step. The difficult task will be to bring about the changes imbedded in that law and then to ensure that the policies and entities that it establishes (new university councils, new rectors and presidents, new funding models) function and begin to have the intended impact on institutional and system performance. The current government has taken important steps, as summarised in the following section, to shape a national strategy for higher education and to put mechanisms in place that have the potential for long-term change. But the current structure has serious weaknesses:

- The continuation of highly centralised controls from the Ministry of Finance and other agencies puts the Ministry in the position of a bureaucratic intermediary between the institutions and the state, with staff energies focused on processing paper and making hundreds of decisions on relatively small issues. The focus on bureaucratic control drives out attention to strategy and leadership for change.
- The current structure is highly vulnerable to changes in political leadership. Leadership for long-term change must be sustained over changes in governments – with broad engagement and support from all dimensions of Greek society.
- Many of the areas for significant improvements in the efficiency and performance are between and among institutions, not only within individual institutions. Improving institutional governance and management will provide the capacity to make changes within institutions, such as consolidation of small departments, realignment of academic staff and other resources, and improved services to students. However, as illustrated above, other changes are systemic: better alignment of student demand with the needs of the labour market; increasing diversification within the system; eliminating duplication across institutions and sectors; consolidating and merging departments; and designing resource allocation and performance funding models linked to a long-term national strategy.
- Decentralisation and increased institutional autonomy must be balanced by accountability. Greece needs an entity focused on the needs of the public: on the educational needs of current and future generations of students and the link between higher education and the future of Greece's economy and quality of life. While it is critical that Greece develops strong, globally competitive institutions, the aggregation of the interests and aspirations of these individual institutions will not necessary lead to an effective and efficient system acting in the public interest.
- Greece needs an entity with the expertise and credibility to gather, maintain, analyse and report data on the higher education system. The lack of a comprehensive information system is one of the most serious problems facing Greek higher education.

Without accurate and timely data, the implementation of new management structures will not be possible. The Ministry has made great strides in addressing this gap, and for the first time can provide basic information about students, staff, and other dimensions of the system. In the past, the extreme autonomy of the institutions often used to bar access from the Ministry to essential information, and the highly fragmented state budget and other structures described earlier, have hindered development of reliable and timely data. That Greece has not reported data on expenditures to the OECD and other international statistical agencies since 2005 is just one indicator of a severely dysfunctional data collection, analysis and reporting capacity.

In addition to weak capacity to steer the system and hold institutions accountable, the development of an effective quality assurance system has been slower to develop in Greece compared to many other EU countries. As noted earlier, the establishment of the Hellenic Quality Assurance Authority (HQAA) was one of the most important reforms of the past decade.

According to the data provided by the HQAA, by the end of 2010 (i.e. during the period 2009-10) 274 of the 507 departments of universities and TEIs had submitted internal evaluation reports (54%) and 90 of them had also completed their external evaluations (18% of the total or 33% of those that submitted internal evaluation reports). It is important to recognise that departments operating for less than six years are not required to go through the evaluation process.

Table 2.9 Public and private spending for tertiary education, percent by source (2005)

	Public sources	Private sources		
		Household expenditure	Expenditure of other private entities	All private sources
Greece	94.0	5.0	1.0	6.0
OECD average	85.5	~	~	14.5
EU19 average	90.5	~	~	9.5

Source: OECD (2008c), Table B3.1.

Limited non-public funding and cost-sharing to complement governmental subsidy

The share of private spending on tertiary education is among the lowest in the EU and among OECD countries (Table 2.9).

The low level of private spending is partly the result of the absence of student fees as mandated by the Greek Constitution, which explicitly states that tertiary education is to be provided free of charge and exclusively by the public sector. It also results from weak links between tertiary education institutions and the private sector of the economy, particularly as regards joint research projects.

CURRENT AND PROPOSED REFORMS

The government is acting within its current authority to address some of the issues outlined in the previous section.

Proposed framework law

The most far-reaching action lies in the development of a draft higher education framework law that would make significant improvements in the governance and management of institutions, increase the authority and flexibility of institutions to manage resources within an accountability framework of performance agreements, and establish strong steering capacity at the national level (Hellenic Republic, Ministry of Education, 2010). Several provisions are essential to establish the capacity needed to improve the efficiency of the Greek higher education system. These provisions are described below.

Institutional independence and institutional governance and management

The most far-reaching changes related to governance and management would:

- Devolve responsibilities from the Ministry to institutional governing bodies.
- Establish a governing board – the Council – and a senate for universities, and an assembly for the TEIs.
  - The Council would include external members as well as student and faculty representatives. Because of the Constitutional autonomy of institutions, the universities, and not the Ministry, would necessarily have responsibility for appointing external members of the Council. At the time of the OECD review, the proposal under consideration was for a council of nine to 15 members. A possible configuration based on 15 members would include eight internal representatives, including seven elected according to objective criteria from the tenured faculty, one student elected by student bodies, and seven external members. There is an on-going debate as to whether the external members should be distinguished from academics or business and civic leaders (or a combination of both). The Council chair would be from among the external members.

- The Council would be responsible for establishing overall policies for the institution, including the allocation of human resources and funding within the institution. A key responsibility of the Council would be the appointment of the rector (for universities) or president (TEI).
- The rector or president would be responsible for the academic management of the institution along with the senate/assembly. The government's proposal is that the rector be selected after an international call for candidates who should be "highly qualified academically" and could be from a foreign university. Before making the final appointment, the Council would seek the advice of the institution's faculty.

- Increase institutional autonomy in defining responsibilities and the characteristics of teaching and non-teaching staff. The Ministry would retain some central responsibility for defining the parameters for staff, including different grades (e.g. assistant, associate and full professor). The Ministry would continue to establish minimum and maximum salaries and the state would finance staff according to the mutually binding programme agreements memorandum.
- Strengthen the programme agreement memorandum, as established in the 2007 law, through which the state finances the institutions on the basis of a mutually binding agreement. Under the framework, the following would be specified:
  - the special identity of the institution and its mission and vision;
  - the institution's objectives and the way targets are met;
  - the educational and research profile of the institution, including the number of entering students; and
  - the institution's development strategy under the framework of the national and European strategy for higher education and research.
- Require a portion of the institution's funding to be allocated on the basis of quality indicators and performance. These indicators would take into consideration the differences in the mission and character of institutions, and be changed periodically to reflect evolving objectives and priorities of the national strategy for higher education.
- Establish the basic unit of the institution as the school, encompassing a broad disciplinary or professional scope, and require the consolidation of individual departments within these schools.

A new steering entity for the higher education system

The framework law would establish an entity to be responsible for overall steering of higher education in Greece. Among the functions of this entity would be to:

- support the Ministry of Education in the development of a national strategy for higher education and oversee implementation of that strategy;
- negotiate and sign programme agreements with the institutions;
- manage and allocate public funding to the institutions;
- estimate the cost of services; and
- evaluate certain relevant indicators and benchmarks and collect the necessary data from individual institutions.

At the time of the OECD review, several alternatives were under consideration for this steering entity:

- a new independent body to be responsible for funding higher education;
- redevelopment of the Independent Committee for the Quality Assurance in Higher Education (ICQAA) into an Independent Authority for the Assessment, Accreditation and Funding of Higher Education; and
- management of funds to be undertaken by a special department of the Ministry of Education.

A regional strategy linking higher education to the regional development and innovation

The framework law provides for a strategy for each region focused on the effective contribution of the higher education institutions to the local and regional development, innovation, prosperity and social cohesion. The law would establish district councils which would have an advisory role in formulating the national strategy for higher education, research, technological development, innovation, and lifelong learning, and a co-ordinating role in the strategic development of higher education institutions and research centres at a local and regional level.

Other ongoing reforms

Development of the funding model

The Ministry of Education has made progress in developing and implementing a new methodology for allocating funding to institutions. In 2011, the Ministry presented universities with a total budget including the posts (even though they did not actually receive the funding for salaries because these are paid directly), to provide a complete picture of the budget as it would appear when the new higher education framework law is enacted. The application of the funding formula revealed significant differences

among institutions in the proposed budget and the funding that they were currently receiving. If a 20% across-the-board cut was applied to the total budget generated by the formula, some institutions would receive significantly less than their current funding while others would not. The proposal under consideration at the time of the OECD review was to reduce each institution's funding based on the funding it retained at the end of the previous year. HEIs are allowed to retain funds at the end of the year and carry over to next year. Depending on how much remaining, the institution would receive from 5% to 20% less in their total.

Reduced number of admissions for 2011/12

The Ministry of Education announced on 10 May 2011 that the number of students who will be admitted to higher education for the academic year 2011/12 would be reduced by 10 250, a cut from 84 690 in 2010/11 to 74 440 for the coming academic year.

Most of the cuts are in the TEI sector. As described earlier in this report, the Ministry analysed the difference between the number of student places at TEIs in 2010 compared to the number of students who actually registered and actively enrolled in courses, as evidenced by the number of students requesting free textbooks. The number of open places was therefore reduced to reflect a realistic estimate of student demand. In several cases of TEI departments with low actual enrolments and low graduation rates, the Ministry decided not to assign students for the 2011/12 academic year.

The Ministry gave as the principal reason for the reduced number of students for the 2011/12 academic year the need to maintain the same basic levels of number of students in the central universities and the TEIs for the coming year as for the previous.

Tightened regulation on student transfers

On 10 May 2011, the Ministry announced new regulations tightening the conditions under which special categories of students (for example, students from large families, students with health conditions, etc.) could transfer from an institution to another, and established the maximum number of transfer that can be accepted at each receiving university.

Closure or merger of low-performing departments and institutions

On 28 March 2011, the Ministry of Education announced the first steps in spatial planning for higher education that would include closing some TEIs, merging small TEI and university departments with schools at other larger institutions, and merging smaller universities with other larger universities with similar profiles. High on the list for closure are 60 low-demand TEIs with low graduation rates. The objective of the new spatial planning is to complete closures and mergers or departments of TEIs and universities across the country by the end of 2012.

SUMMARY OF RECOMMENDATIONS

Enact the proposed higher education framework law to establish a new foundation for improved efficiency and performance

Greece needs to act swiftly to establish a new legal, governance, finance and accountability framework for the system in order to establish a new foundation for dramatic improvements in the efficiency and performance of its tertiary education. Efforts to improve efficiency and performance cannot succeed within the current structure of highly centralised outdated governmental controls and the highly fragmented network of loosely governed and poorly managed institutions.

Enactment of the proposed framework law for higher education is the most important first step that Greece must take to improve the efficiency and performance of the system. Change will take time. But without the basic structure for change, the reforms needed will not happen – especially not at a pace required in the current economic crisis.

The proposed framework law is consistent with the modernisation of the Lisbon strategy for higher education and reflects the best practices of the best performing countries in the EU and the OECD (Box 2.3). From the perspectives of this OECD review, the key provisions that must be in place for Greece to move forward include:

- strengthening of the governance and management capacity of institutions to permit substantially increased devolution of authority and responsibility from the Ministry of Education;
- establishing a new independent steering entity, the Higher Education Authority, to provide overall co-ordination of the system and to lead the step-by-step implementation of the reforms; and
- undertaking fundamental reform of financial management and the mechanisms for resource allocation and oversight.

Strengthen institutional governance management

The Framework Law is intended to create governing boards (Councils), reform the election of rectors or presidents to be an appointed post, introduce schools as a way of reducing the independence of departments, and create an appointment procedure rather than election for deans. These are all admirable objectives and should be supported; but in governance matters, the devil

is in the details. The OECD urges attention to several critical points, based on the experience of implementing similar reforms in other countries.

Box 2.3 **Higher education reform in Denmark**

The University Act of 2003 specifies the decision-making power of the universities. Each Danish university is run by a rector in collaboration with a certain number of collegiate bodies. The board of directors is the highest authority of the university and its main task is to represent and manage the university's interests as an educational and research institution. The board sets up guidelines for the university as an organisation and defines its long-term activities and strategies. The board manages the university funds and enters into a development contract with the Ministry of Science, Technology and Innovation. The board approves the university's budget and employs and dismisses the rector. On the recommendation of the rector, the board employs and dismisses also the university's executive management (Deans, Heads of Department and Directors of Studies) (Eurydice 2006, 2-3). The board has a majority of external members and includes representatives from the academic staff, PhD students with university contracts and technical and administrative staff (Eurydice, 2006, 3).

The University Act from 2003 can be considered an essential governance reform which aims to further increase the universities' autonomy and self-governance; most notably by the introduction of a board with an external majority as the superior authority of a university, employed academic leaders instead of elected academic leaders, and an explicit demand for improved interaction with the society at large (Schmidt, et al., 2007b). In the view of the informants, this reform contributes to professionalisation of the management of the higher education institutions and improves the conditions for committing to long term strategies. Also the new boards which have a majority of external members facilitate society's contact with the higher education institutions.

Source: OECD, (2006a), European Commission (2008a).

Governing boards (Councils): membership and structure

- Governing boards (Councils) must be of sufficient size to accommodate the necessary range of interests and allow for the creation of specialist committees, such as a subcommittee on finance. There is no golden rule about the size of governing boards. Small governing boards (for example, a board of only nine members), can lead to arbitrary decision making without full engagement of key stakeholders. Large boards can become unwieldy. A board of 21 to 23 members would be a good middle range that would allow an appropriate balance between the need for effective decision making and necessary representation.
- External members should constitute a majority of the governing board. Ideally they should be drawn from industry and the professions, not from the ranks of retired academics. The latter will simply perpetuate the current organisational culture. HEIs need to involve external public interests and, with the prospect of financial autonomy, these need to include financial expertise. The academic community should welcome the creation of governing boards. The terms of membership of external members should be sequenced to ensure continuity over time. Boards with frequent turnover of membership have difficulty in maintaining the needed group cohesiveness for effective governance and the core knowledge essential for addressing complex policy issues. The Ministry or the new steering entity (see below) should create a list of potential external members of governing boards.
- Academic staff should constitute the remaining membership, with the exception of one student for boards with membership of 15 or fewer and a maximum of two students for boards with membership in the 16 to 23 range.
- The chair of the governing board should be drawn from the external members but should be elected from the whole board.
- The rector or president should be an *ex officio* member of the governing board. This would be consistent with practices throughout Europe.
- Governing boards need to learn their functions and how best to carry them out. Chairs should be encouraged to set up an association and the association should establish "development" programmes for members. Each board should provide an induction programme for new members.
- The functions of governing boards should be spelled out with care to include responsibility for finance, solvency and the approval of the institutional budget, for the approval of strategic plans and mission, and for the appointment of the rectors, the senior officers and the deans. They should have the particular task of monitoring the executive team. They must resist becoming involved in management and should regard the senate as the prime authority in academic decision making. A programme memorandum, as included in the proposed framework law, between the Ministry or the steering entity (see below) and the institution, to be signed by the chair and by the rector, is an effective way of ensuring that the governing board is aware of its responsibilities.

Rector or president

The rector or president should be appointed by the Council. There should be a public appointing process to appoint the rector, with a search committee, public advertisement and formal interviews. The search committee should be appointed by the Council but should contain appropriate academic representation. A case could be made that the rector or president should continue to be elected. However, given the history of a highly politicised process for election of rectors in Greece, it is strongly recommended that the rector be appointed by the Council in an open and transparent process. Seeking advice from the institution's academic staff is important, but the final decision and appointment must be made by the Council.

School and departmental structure

The proposed schools will be ineffective unless the deans become budget-holders for the collection of departments they control. The deans, as budget-holders, must also be given qualified financial/administrative support. It must not be imagined that by a stroke of the pen departments will disappear. Because they cluster round disciplines, departments always survive in some form after departmental mergers. Over time it must be hoped that academic programmes become increasingly interdisciplinary, but there will be academic and financial pressures to resist this and the issues will only be resolved in discussions at the school level. Mandating or micromanaging such decisions from institutional levels higher than the individual school will be counterproductive.

Executive committee

Every institution should be encouraged to form an executive committee, to be chaired by the rector, comprising pro rectors, senior administrators and the deans. The function of the committee should be to steer and direct the day-to-day business of the institution. It should report and make recommendations to the Council and the senate.

Box 2.4 **Steering tertiary education**

- **Develop a coherent strategic vision:**
  - Undertake a systematic national strategic review of tertiary education and produce a clear statement of its strategic aims.
  - Communicate vision for tertiary education clearly and effectively so that all relevant parties see the role that they should play within the broader policy framework.
  - Draw on a comprehensive advisory body to establish strategic aims for tertiary education.
  - Create a body, e.g. a National Council or Forum of Tertiary Education, to assist with the integration of strategic leadership, policy planning and co-ordination among the main actors.
  - Strengthen this body by involving international experts to provide a wider perspective on problems faced by tertiary education and examine ways of addressing them.
- **Establish sound instruments:**
  - Ensure that the capabilities of tertiary education authorities keep pace with changing responsibilities.
  - Strengthen tertiary education authorities' capacities in data collection and analysis, policy experimentation and policy analysis.
  - Reinforce the steering capacity of tertiary education authorities through the development and administration of financing instruments and the review and monitoring of outcomes.
  - Develop steering instruments to establish a balance between institutional autonomy and public accountability.
  - Possible ways are performance contracts, performance-related funding or targeted funding.
  - Avoid detailed annual reporting requirements in favour of tailor-made strategic forms of accountability.
  - Use institutional competition and student choice to help improve quality and efficiency and to achieve stronger performance from the tertiary system.

Note: See OECD reviews of Ireland (OECD, 2006b), Portugal (OECD, 2007), and Egypt (OECD, 2010d) for recommendations to strengthen or establish new higher education co-ordinating/steering entities comparable to what OECD is recommending for Greece.
Source: OECD (2008e).

Establish an independent steering entity, the Hellenic Higher Education Authority, by expanding the role of the Independent Committee for the Quality Assurance in Higher Education (ICQAA)

- Establish the authority as the Independent Hellenic Higher Education Authority. The creation of this independent steering entity represents a crucial element in the machinery for implementation because it distances the Ministry from day-to-day engagement with the micro management of the system. The Authority will require the strong support of the Minister because reforms will inevitably be opposed by some interests.
- Transfer the functions now assigned to the Special Secretary for Higher Education to this redeveloped authority.
- Define the key responsibilities as (Box 2.4):
  - developing and recommending to the government and the higher education institutions a national strategy for higher education aligned with EU goals, targets and priorities;
  - carrying out the responsibilities related to quality assurance and accountability currently assigned to the Hellenic Quality Assurance Authority for Higher Education;
  - negotiating programme agreements with each of the institutions;
  - developing and overseeing the implementation of new funding models for both operate and performance funding;
  - developing and maintaining a comprehensive information system for planning, budgeting and evaluation at the institutional and system levels;
  - overseeing implementation of new framework law;
  - overseeing consolidation and mergers of departments and institutions throughout the country; and
  - implementing a region-by-region strategy linking higher education to regional priorities for economic and social development.

Organise a special service of the new entity to provide technical assistance to institutions in their implementation of the governance and management structures mandated by the new higher education framework law

Full delegation of management responsibility to institutional governing boards will require significant improvements in institutional capacity. It is unrealistic to expect all institutions to be able to move at the same pace, on a tight timeline to establish new governing boards, appoint new rectors or presidents, organise new senates or assemblies, organise all departments within schools, and implement other mandated reforms. The new Authority should have the power and responsibility to:

- Link eligibility for the initial phases of performance funding to evidence of implementation of required governance changes according to criteria specified by the Authority.
- Group institutions according to their stages of implementation and capacity to accept additional delegated authority and responsibility. For example, some institutions might be granted full autonomy in all dimensions specified in the new framework law while other could be granted partial delegated authority, subject to evidence of further progress.
- Organise a special service, perhaps in collaboration with the Rectors' Conference and the TEI Presidents' Conference, to provide training for new governing board members, rectors, senior institutional managers responsible for budgeting and management, and deans of newly formed colleges. In time, the chairs of the governing boards should organise a non-governmental entity to provide support and training for board members similar to the Council of University Chairs (CUC) in the UK and the Association of Governing Boards for Universities and Colleges in the United States (AGB).

Devolve responsibility for financial and human resource management to the institutions and redesign the funding models within an accountability framework

The proposed framework law includes the critical elements of increased institutional responsibility and accountability for financial and human resource management to the institutions. The change to block grants is a fundamental change consistent with best practice across EU and OECD countries. The challenge will be to implement these in a manner that, for the purposes of this report, leads to significant improvements in efficiency across the system. As indicated above, the new steering entity should be charged with overseeing this implementation.

The Ministry of Education has already made progress in developing a new funding model and implementing programme agreements, as described earlier in this report. Greece should consider several points from the experience of other counties that have implemented similar reforms.

Shift from *ex ante* controls of staff appointments and salary conditions to *ex post* enforcement, holding institutional governing boards accountable for compliance with government policies and regulations

Human resources constitute the largest portion of institutional budgets and therefore the area in which the most significant efficiencies, consistent with standards of quality, must be made. The framework provides for block grants to institutions, including the salary component of the budget, which currently is budgeted separately and centrally controlled. It provides for a phased transition of staff from the status as public servants employed directly by the government to staff appointed and employed by the institutions. At the same time, the law provides for the Ministry to establish the structure of academic ranks and minimum and maximum salaries for each rank. In a sense, the law grants flexibility and then takes it away. Many countries with historically strong central control of basic employment conditions for public servants and transitions of social equity retain a role in defining the conditions of employment. Nevertheless, they shift from detailed *ex ante* controls and approval processes to clear statements of policy and enforce these policies by holding line executives or entities such as the institutional government boards accountable for upholding these policies (Hawkesworth, et al., 2008).

Reform the basic compensation package for academic staff to encompass all sources of payment and provide for a major portion of the salary to count for contributions to social benefits and pensions

Only a portion of salaries is currently paid by state funding, as described earlier in this report. The remainder of salaries is paid by a complex set of allowances. Clarity in the terms of employment and compensation are essential for attracting, rewarding and retaining highly qualified academic and other staff. Institutions must have flexibility, with the parameters of basic policy and regulations, to shape staff compensation packages.

Develop different criteria and methodologies for allocations of the general (recurring) operating budget, including funding for salaries, and for the budget component for performance, drawing on best practice in the EU and OECD countries (Box 2.5)

Table 2.10 provides a simplified conceptual framework for the allocation of state funding for institutions, not including new investment/infrastructure (Jones, 2003).

The funding model currently under development by the Ministry of Education, and the framework envisioned in the proposed framework law are generally similar in structure to that shown in Table 2.10. In designing and implementing the new funding model, Greece should consider these points from the experience of other countries (see text box from the OECD Thematic Review of Tertiary Education for key policy points).

Table 2.10 Components of finance policy

Component of State Allocation	Purpose	Model
Operating (Recurring) Budget (including salary expense and funding for renewal and maintenance of assets)	Develop and sustain core capacity	Formula based on characteristics of different institutional missions (research, level of degree, etc.)
Performance Component	Leverage change in core capacity to improve performance and capacity	Allocation based on indicators of performance related to: Institutional development plans unique to each institution Indicators related to national strategy for higher education

Source: Jones (2003).

Operating budget allocations

Including in the allocation algorithm factors related to the *current* cost structure (for example, the numbers of academic staff and staff salaries) and the cost per student can have the effect of perpetuating current inefficiencies. Many of the early higher education-funding formulas, especially in the United States, were – and continue to be – "cost-reimbursement" formulas (McKeown-Moak, 1999). In the United States, it is also possible to benchmark institutional costs in comparison with institutions with similar missions based on long-developed methodologies and extensive, reliable national databases (Brinkman, 1987; Wellman, 2010). A similar capability exists through the Higher Education Funding Council of England and other countries with long histories of formula funding. Given the early stages of development of the funding model in Greece, it is important to:

- focus on a limited number of understood and trusted variables for which data are readily available that are stable over time instead of attempting to develop a complex, cost-based funding formula;
- apply the funding formula to the total budget, not only to new funding. In the initial implementation of a new funding model in Greece, the formula was applied only to new funding, as described earlier in this report; and

- consider using a variable other than full-time equivalent students. Enrolment-driving formulas tend to drive up enrolments – exactly what Greece does not want to do at this time.
- an alternative would be the numbers of students within the normal period plus two years (N + 2) who are enrolled at the *end* of the academic year and who have made satisfactory progress (attended lectures and taken examinations) (Box 2.6 on the Tennessee funding model);
- include a significant "efficiency" variable (for example, an assumption that the institutions should be able to achieve X% in cost-savings);
- rely on face-to-face negotiations between the funding agency (the new steering entity) and the institutions regarding the precise allocations;
- do not agree to "hold-harmless" provisions to protect institutions from cuts in allocations based on the objective criteria in the funding formula. Instead, use a "stop-loss" methodology that limits the reductions in any single year to a maximum percent each year over four years but with the full 100% reduction at the end of that period (Box 2.7); and
- avoid across-the-board cuts or "one-size-fits-all" applications of policy changes. The effect of such changes is to totally undermine the intended differential impact of a funding formula.

Box 2.5 **Public subsidies for tertiary programmes in relation to the benefits to society**

- **Establish broad principles to differentiate levels of public subsidies across programmes including:**
  - Providing high levels of public subsidies to priority fields of high relevance (e.g. when graduate numbers fall short of demand) and less subsidies to popular programmes with high private returns to graduates.
  - New programmes should be assessed for relevance (e.g. whether they respond to labour market needs, foster innovation or serve communities' aspirations) before approval.
  - Ensuring relevance to society requires a robust system of quality assurance since low-quality programmes are, for example, unlikely to be relevant to the labour market.
- **Make institutional funding for instruction formula-driven, using both input and output indicators and including strategically targeted components:**
  - Base institutional block grants on transparent formulas with a balanced array of input and output indicators.
  - Consider allocating institutional funding by performance agreements or contracts negotiated between the state and individual institutions.
  - Include targeted development programmes to help align the mission of institutions with the overall strategy for tertiary education. But a multitude of targeted funds risks reducing transparency and increasing transaction costs.
  - Allocating funds to institutions should follow a tailored approach recognising the diversity of roles and missions of institutions.
  - Give institutions autonomy in the use of their block grants.
  - Provide stability in institutional funding to promote long-term development.
  - Allow institutions to diversify sources of funding.
  - Fund capital infrastructure with a number of different streams.
- **Improve cost-effectiveness by steps to reduce inefficiencies throughout tertiary education systems through:**
  - linking funding more closely to graduation rates
  - creating incentives to reduce non-completion rates and the length of study time
  - reducing public subsidies of students who remain too long in the system
  - eliminating duplicated programmes
  - rationalising low-enrolment programmes with possible redeployment of academics across programmes
  - downsizing faculty to respond to falling student enrolments
  - increasing use of shared facilities
  - expanding student mobility between institutions

Source: OECD (2008d).

Box 2.6 **Tennessee funding model**

The Complete College Tennessee Act of 2010 includes a provision for an outcomes formula model. The act directs the Tennessee Higher Education Commission (THEC), in conjunction with the University of Tennessee, the Tennessee Board of Regents, and state government, to develop a new model to be used for the 2011–12 budget cycle. The formula funding design is intended to promote outcomes important to the state, such as degree attainment, transfer activity, student retention, etc. The law requires Tennessee to compile a "fact book" related to actual data on these outcomes. "Award points" for these outcomes are provided through the funding formula; assignment of points is based on the institution's mission. Tennessee officials hope the formula will strengthen links to the state's master plan for higher education, which identifies specific educational attainment goals, etc.; will enhance institutional incentives to focus on student retention; and will introduce a focus on productivity (defined as degree production, transfer activity, student access, education for adult students, etc.). The new formula will, officials expect, spread the financial incentives to a larger, more appropriate set of variables — not just student enrolment — and calibrate it specifically to an institution's mission by utilizing the Carnegie Classifications. Currently, the existing funding formula is approximately 60% enrolment driven with incentives heavily focused on student inputs.

Source: *www. state.tn.us/thec*

Box 2.7 **Stop loss in Ohio**

The state recognises the primary need of institutions to ensure their own financial stability and that it may take some time for individual schools to create or modify policies that will lead to success under the new funding formula. To alleviate any concern that under-prepared schools will be heavily penalised when the new formula is implemented in FY2010, the state has guaranteed that an institution cannot lose more than 1% of its funding per year.

Source: Ohio Board of Regents, Columbus, Ohio, *http://regents.ohio.gov*

Performance component

Performance funding must be carefully designed to have the intended impact. The experience with performance funding in the United States and other countries is mixed (Burke, 2002; Salmi and Hauptman, 2006). Several points from international experience should be emphasised:

- Link performance funding criteria *both* to indicators related to institutions' development plan (each institution's strategic plan, goals, and indicators) *and* clearly defined national goals (National Strategy and EU Goals) and related performance indicators. Criteria must differentiated by sector.
- Maintain the performance-funding component, even in periods of severe budget reductions such as Greece is now experiencing. The tendency in difficult economic times is for governments to postpone or eliminate performance components (Burke, 2002).
- Limit the number of performance indicators used to allocate performance funding to only a few key performance indicators, perhaps no more than 6 to 12. The indicators must be mutually reinforcing, not contradictory. The more complex and extensive the set of valuables, the weaker will be the signals conveyed to institutions regarding the intended changes in performance. Leaders serving on governing bodies and senates and assemblies must understand clearly the changes in performance that will lead to changes in performance funding. Higher education institutions, by definition, are led by exceptionally bright people. If they do not understand – and buy into – the key measures, institutions will "game" a complex funding system and ignore the intended performance objectives.
- Consider what percentage of the budget is necessary to get the attention of institutional leaders and leverage necessary change. The lesson from the United States is that only a small percent of the total budget (for example, one to a maximum of 5%) can have a significant impact, especially in times when budget are being cut (Burke, 2002). The intent of performance funding is to leverage change in the core budget, not to provide core recurring funding. In contrast, the formula for the operating (recurring budget) may indeed result in significant changes in an institution's allocation over a short time period (see comment above on "hold-harmless" and "stop-loss" provisions).
- Recognise that a degree of stability in performance funding is essential to leverage change. A four-year cycle, with only minor adjustments in between, would provide sufficient time to see results that can be clearly evaluated to assist in shaping the next generation of incentives.

- Complement performance funding with face-to-face deliberations between the funding agency (the new steering entity) and the institutions about the alignment between institutional goals and national strategy, and the specific steps the institution must take to improve efficiency and performance.
- In the short term, link institutional eligibility for performance funding to progress, as specified in the institution's programme agreement on:
  - achieving significant economies-of-scale through consolidation of departments into schools and other actions consistent with the mandate to rationalise the system; and
  - implementing requirements for establishment of governing boards, appointment of rectors or presidents and other governance and management improvements.

Reduce admissions to the higher education system to entry rates comparable to the average of EU countries and more clearly differentiate admissions requirements between the universities and the TEIs

- Limit the total number of entrants to tertiary education to a number more comparable to the average entry rates in the EU; increase the percentage of entrance to the TEIs compared to the universities. Consider further reductions for 2011-12, followed by more closures of small departments.
- Make clear to students, families and the general public the definition and related standards regarding the knowledge, skills and competencies necessary to be prepared for tertiary-level study and employment in the labour market.
  - Align the statements of competencies with the new National Qualifications Framework.
  - Ensure that the recently announced reforms of upper secondary general and technical education and the redesigned university entrance examination align with these standards.
  - Undertake a comprehensive media campaign and as well as training of counsellors to communicate to students, parents, and the general public both the rationale and standards for admission to higher education.
- Increase the requirements for admission to universities to distinguish more clearly from the TEIs.
- Establish basic requirements related to university student attendance and satisfactory academic progress. For example, require that students show a consistent pattern of attending lectures, sitting for examinations, and making satisfactory academic progress throughout their academic careers, in order to be eligible for a first degree. Discontinue all student-related benefits for any student who fails to maintain a specific minimum level of attendance.

Establish new rules for transfers

- Establish a more objective, equitable and merit-based system for transfers.
- Require that students transferring to a department have a university entrance examination score equal to or above the average of the students admitted directly to the department. Provide opportunities for students wishing to transfer to retake the university entrance examination.
- In the medium term, in the context of increased institutional autonomy, devolve responsibility to each university to determine the number of transfers to be admitted and, to determine which students will be admitted for transfer.

Box 2.8. Coherence of the tertiary education system with extensive diversification

- **Grasp the benefits of wider and more flexible diversification among tertiary institutions.**
  - Clearly define the mission and profile of individual institutions in accordance with this diversification strategy.
  - Establish a clear and positive vision of professional/vocational tertiary education either as a distinct sector or as a specialisation of some institutions within a unitary system.
  - Establish a set of supporting changes to accreditation, quality assurance, human resource management and governance structures and policies to reflect the distinct mission of individual institutions.
- **Avoid the fragmentation of the tertiary education system.**
  - Ensure co-ordination mechanisms between tertiary education institutions.
  - Improve the ways in which institutions collaborate to create a more coherent system.
- **In systems with vocationally-oriented sectors, ensure that mechanisms exist to discourage academic drift.**
  - Ensure sufficient rewards to discourage academic drift.
  - Ensure that vocational institutions understand that they are expected to stick to their vocational mission.
  - Grant accreditation to award degrees when education provision meets labour market demand.

Source: OECD (2008e).

Establish a more clearly differentiated binary system, including a university sector and a non-university sector

- Realign the mission of TEIs to strengthen alignment with the Lifelong Learning Strategy.
- Cease placing students in any TEI department or academic programme that, after objective analysis, duplicates or seeks to duplicate, a comparable university programme.
- Increase the emphasis of TEIs in providing short-cycle education and training programmes to meet regional needs of employers and the labour market.
- Authorise the Higher Education Authority to use programme agreements and finance policy to reorient the missions of TEIs toward links with Lifelong Learning and short-cycle education and training programmes.
- Co-locate the entity with the newly former steering entity.

Consolidate or merge small departments with low enrolments, low graduation rates

Accelerate the current initiative to consolidate, merge or close small, low-enrolment, low-performing departments and institutions throughout the country

Under the leadership and direction of the Higher Education Authority, alternatives could include:

- Establish regional multi-campus systems in which all branches or departments are integral to the colleges/faculties of the main campus.
- Require that all departments located in a municipality separated from the main university or TEI campus to be an integral part of a larger school on the main campus.
- Use web-based technology and other means to link the main campus and the geographically separate department for:
  - instruction;
  - support services; and
  - administrative functions.
- Use the facilities of discontinued departments as learning centres to meet regional needs for lifelong learning and professional development (e.g. for school leaders and teachers) and other purposes. Provide at each site the capacity to:
  - provide access to technology (computers, broad-band access, etc.);
  - provide support services for organising training and conferences;
  - contract with providers (universities, TEIs, other providers) to offer distance learning and short-term education and training programmes at the site; and
  - link centres either to a university or TEI within the region or perhaps to the Hellenic Open University to serve as a learning site.
- Use programme agreements negotiated between the Higher Education Authority and individual institutions to establish goals for increased economies-of-scale through closer, merger or consolidation of small departments, consolidation of departments into schools, and other actions. Link eligibility for performance funding and other incentives and penalties to expedite the consolidation process.

Increase cost-sharing by students in a manner consistent with the Constitutional requirement for free education

- Replace the current free textbooks for students with a textbook voucher given to each student each year with a value substantially lower than the cost of the textbooks he/she would need. This will promote competition among publishers and will facilitate the development of a healthy second-hand market for such textbooks with substantial savings for the state.
- Initiate a dialogue with student unions and other stakeholders about longer-term alternatives for cost-sharing (Box 2.9).
- Expand availability of student loans, as proposed in the new framework law, to assist students and families with the non-educational costs of higher education (housing, instructional materials not provided free, etc.).

Box 2.9 **Cost-sharing**

In countries with little tradition of tuition fees, launch a public debate to help clarify whether:

- heavy reliance on public money is sustainable
- private benefits are so low as to justify low fees, especially of the more affluent students
- higher fees for more affluent students could consolidate the student support system

Source: OECD (2008d).

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Annex: Comparative Performance of the Greek School System

LEARNING OUTCOMES

Mean performance among 15-year-olds: Below the OECD average and stable over time in reading and science, while some improvement in mathematics

In the PISA 2009 assessment of 15-year-olds, Greece showed below-average performance in reading (rank 25[1]), mathematics (rank 30[2]) and science (rank 30[3]) (Figures I.2.15, I.3.10 and I.3.21)*. The results remain below the average even after accounting for spending per student and the socio-economic context of students. In reading, Portugal, Italy, Slovenia, Spain, the Czech Republic, the Slovak Republic, Slovenia and Israel and the partner countries and economies Macao-China, Latvia and Croatia perform at the same level as Greece; in mathematics, the partner countries Croatia and the Russian Federation show performance levels similar to that of Greece; and in science, the partner country and economy the Russian Federation and Dubai (UAE) perform at the same level as Greece.

While the PISA results show that Greece has maintained its performance in reading since 2000 and in science since 2006 when PISA began to measure these trends (Tables V.2.1 and V.3.3), student performance in mathematics has improved by 21 score points since 2003 (Table V.3.1).

Girls outperform boys in reading by an average of 47 points, an advantage that is greater than on average across OECD countries (Tables I.2.3 and V.2.4). In Greece, girls also outperform boys in science by an average of 10 points, while there is no gender difference on average across OECD countries (Table I.3.6). However, in Greece, boys outperform girls by 14 points in mathematics, which is comparable to the OECD average advantage of 12 points (Table I.3.3).

Relative shares of poor-performing students: Above the OECD average but improvements in mathematics

In Greece, 21% of 15-year-olds do not reach the PISA baseline Level 2 of reading proficiency, less than the OECD average of 19%. This proportion, which has remained unchanged since 2000 (Tables I.2.1 and V.2.2), is larger than in most OECD countries (Table I.2.1).

Level 2 on the PISA reading scale can be considered a baseline level of proficiency, at which students begin to demonstrate the reading competencies that will enable them to participate effectively and productively in life. Students proficient at Level 2 are capable of very basic tasks, such as locating information that meets several conditions, making comparisons or contrasts around a single feature, working out what a well-defined part of a text means even when the information is not prominent, and making connections between the text and personal experience. Some tasks at this level require students to locate one or more pieces of information, which may need to be inferred and may need to meet several conditions. Others require recognising the main idea in a text, understanding relationships, or construing meaning within a limited part of the text when the information is not prominent and the reader must make low-level inferences. Tasks at this level may involve comparisons or contrasts based on a single feature in the text. Typical reflective tasks at this level require students to make a comparison or several connections between the text and outside knowledge by drawing on personal experience and attitudes.

A follow-up of students who were assessed by PISA in 2000 as part of the Canadian Youth in Transitions Survey shows that students scoring below Level 2 face a disproportionately higher risk of poor post-secondary participation or low labour-market outcomes at age 19, and even more so at age 21, the latest age for which data are currently available. For example, the odds of Canadian students who had reached PISA Level 5 in reading at age 15 to achieve a successful transition to post-secondary education by age 21 were 20 times higher than for those who had not achieved the baseline Level 2, even after adjustments for socio-economic differences are made (OECD, 2010f, *Pathways to Success*).[4] Similarly, of the Canadian students who performed below Level 2 in 2000, over 60% had not gone on to any post-school education by the age of 21; by contrast, more than half of the students (55%) who had performed at Level 2 as their highest level were at college or university.

In mathematics, 30% of students perform below Level 2 on the PISA mathematics, which represents a decrease by 9 percentage points since 2003 (Tables I.3.1 and Table V.3.2). Students proficient at Level 2 in mathematics can employ basic algorithms, formulae, procedures or conventions. They can interpret and recognise mathematical situations in contexts that require no more than direct inference and extract relevant information from a single source and make use of a single representational mode. They are capable of direct reasoning and making literal interpretations of the results.

In science, 25% of students perform below Level 2 on the PISA science scale and this proportion has remained unchanged since 2006 (Tables I.3.4 and V.3.5). Students proficient at Level 2 can identify key features of a scientific investigation, recall single scientific concepts and information relating to a situation, and use results of a scientific experiment represented in a data table as they support a personal decision. In contrast, students who do not reach Level 2 in science often confuse key features of an investigation, apply incorrect scientific information, and mix personal beliefs with scientific facts in support of a decision.

*The tables and figures referred to in this annex may be found in: OECD (2010a), PISA 2009 Results, Volumes I-VI, OECD, Paris.

Relative shares of top-performing students: Below the OECD average and, in mathematics, an increase over time

At the other end of the performance scale, the share of students in Greece at the very highest levels of reading proficiency (Levels 5 and 6) is below the OECD average. Some 6% are top performers in reading (OECD average is 8%), 6% are top performers in mathematics (OECD average is 13%) and 3% are top performers in science (OECD average is 9%) (Tables I.2.1, I.3.1 and I.3.4)*.

The proportion of top performers in reading has remained unchanged since 2000 (Table V.2.2). Students proficient at Level 6 on the PISA reading scale are capable of conducting fine-grained analysis of texts, which requires detailed comprehension of both explicit information and unstated implications, and are capable of reflecting on and evaluating what they read at a more general level. They can overcome preconceptions in the face of new information, even when that information is contrary to expectations. They are capable of recognising what is provided in a text, both conspicuously and more subtly, while at the same time being able to apply a critical perspective to it, drawing on sophisticated understandings from beyond the text. This combination of a capacity to absorb the new and to evaluate it is greatly valued in knowledge economies, which depend on innovation and nuanced decision-making that draw on all the available evidence. Greece's share of the highest-performing readers is 0.6%, while the OECD average is 0.8%. In 13 OECD countries and most of the partner countries and economies, the share is smaller than 0.5%. However, in Australia, New Zealand, the partner economy Shanghai-China and the partner country Singapore, the corresponding percentages are even higher – over 2.0%.

At the next highest level, Level 5 on the PISA reading literacy scale, students can still handle texts that are unfamiliar in either form or content. They can find information in such texts, demonstrate detailed understanding, and infer which information is relevant to the task. Using such texts, they are also able to evaluate critically and build hypotheses, draw on specialised knowledge and accommodate concepts that may be contrary to expectations. Some 5% of students in Greece perform at Level 5 or above, while the OECD average is 8%.

In mathematics, 0.8% of students in Greece reach the highest level of performance, compared with an OECD average of 3% (Table I.3.1). Students proficient at Level 6 on the mathematics scale are capable of advanced mathematical thinking and reasoning. These students can apply insight and understanding, along with a mastery of symbolic and formal mathematical operations and relationships, to develop new approaches and strategies for addressing novel situations. They can formulate and accurately communicate their actions and reflections regarding their findings, interpretations, arguments, and the appropriateness of these to the given situations.

At the next highest level, Level 5 on the PISA mathematics scale, students can still develop and work with models in complex situations, identifying constraints and specifying assumptions. They can select, compare, and evaluate appropriate problem-solving strategies for dealing with complex problems related to these models. Students at this level can work strategically using broad, well-developed thinking and reasoning skills, appropriate linked representations, symbolic and formal characterisations, and insight pertaining to these situations. In Greece, 6% of students reach the PISA mathematics Level 5 or above, compared with 13% on average across OECD countries. In Shanghai-China, half of the students reach Level 5, in Singapore and Hong Kong-China more than 30% do, and in Chinese Taipei, Korea, Switzerland and Finland more than 21% do.

Students proficient at Level 6 in science can consistently identify, explain and apply scientific knowledge and knowledge about science in a variety of complex life situations. They can link different information sources and explanations and use evidence from those sources to justify decisions. They clearly and consistently demonstrate advanced scientific thinking and reasoning, and they use their scientific understanding to solve unfamiliar scientific and technological problems. Students at this level can use scientific knowledge and develop arguments in support of recommendations and decisions that centre on personal, social, or global situations. Some 0.3% of students in Greece reach Level 6 in science, below the OECD average of 1.1% (Table I.3.4). In comparison, in Singapore, 4.6% of students attain this level, in Shanghai-China, 3.9% do, in New Zealand, 3.6% do, in Finland, 3.3% do, and in Australia, 3.1% of students do.

Students proficient at the PISA science Level 5 can identify the scientific components of many complex life situations, apply both scientific concepts and knowledge about science to these situations, and can compare, select and evaluate appropriate scientific evidence for responding to life situations. Students at this level can use well-developed inquiry abilities, link knowledge appropriately and bring critical insights to situations. They can construct explanations based on evidence and arguments that emerge from their critical analysis. In Greece, 2.8% of students reach this level, which is below the OECD average of 9%. In comparison, 24% of students in Shanghai-China attain this level, 20% of students in Singapore do so, 19% in Finland do, and 18% of students in New Zealand attain this level.

The proportion of top performers in mathematics has increased by 2 percentage points since 2003 (Table VI.3.2). The proportion of top performers has remained unchanged in science since 2006 (Table V.3.5).

Context for student achievement in Greece

Countries vary in their demographic, social and economic contexts. These differences need to be taken into account when interpreting differences in student performance.

- In terms of national income level, ***Greece ranks 21st among 34 OECD countries on GDP per capita*** (Table I.2.20 and Figure I.2.1). Greece performs lower in reading than would be expected from its level of GDP per capita. While GDP per capita reflects the potential resources available for education in each country, it does not directly measure the financial resources actually invested in education. ***In a comparison of countries' average actual spending per student from the age of 6 to the age of 15, Greece ranks 26th among 34 OECD countries***. Across OECD countries, expenditure per student explains 9% of the variation in PISA mean performance between countries (Figure I.2.2). Greece's deviation downwards from the trend line suggests that Greece performs worse than would be expected from its spending on education per student. New Zealand spends a similar amount per student but performs 38 score points higher than Greece (Table I.2.20).
- It is not just the volume of resources that matters but how those resources are invested, and how well countries succeed in directing the money where it can make the most difference. Greece is one of 16 OECD countries in which socio-economically disadvantaged schools have more favourable student-teacher ratios than socio-economically advantaged schools, which implies that students from disadvantaged backgrounds may benefit from considerably more spending per student than the Greek average (Table II.2.3).
- Given the close interrelationship between a student's performance and his or her parents' level of education (see Volume II of *PISA 2009 Results*), it is also important to bear in mind the educational attainment of adult populations when comparing the performance of OECD countries, since countries with more highly educated adults are at an advantage over countries in which parents have less education. The percentage of 35-to-44-year-olds who have attained tertiary levels of education, which roughly corresponds to the age group of parents of the 15-year-olds assessed in PISA, is 27% in Greece, which ranks 23rd among the 34 OECD countries (Table I.2.20).
- ***The socio-economic difference between advantaged and disadvantaged students in Greece is larger than typically in OECD countries.*** Socio-economic disadvantage and heterogeneity in student populations pose other challenges for teachers and education systems. As shown in Volume II of *PISA 2009 Results*, teachers instructing socio-economically disadvantaged children are likely to face greater challenges than those with students from more privileged socio-economic backgrounds. A comparison of the socio-economic background of the most disadvantaged quarter of students puts Greece below the OECD average and that of the most advantaged quarter of students puts Greece above the OECD average, while the socio-economic background of the student population as a whole ranks around the OECD average (Table II.3.1).[5] In other words, while the overall socio-economic context of students in Greece is that of a typical OECD country, the proportion of disadvantaged students in Greece is above that of OECD countries (Table I.2.20). The socio-economic difference between advantaged and disadvantaged students are greater in Greece than in many other OECD countries (Table II.3.2).
- ***Among OECD countries, Greece has the 19th smallest proportion of students with an immigrant background***. On average across OECD countries, 10% of students are from an immigrant background, while in Greece 9% of students are from an immigrant background (Table II.4.1). However, the share of students with an immigrant background explains just 1% of the performance variation between countries (Figure I.2.5). The performance of these students in PISA can only be partially attributed to the education system of their host country. Much of the performance difference between these students and native students stems from socio-economic background, the language spoken at home and prior education in their country of origin.

Even after accounting for the demographic, economic and social context of education systems, the question remains: to what extent is an international test meaningful when differences in languages and cultures lead to very different ways in which subjects such as language, mathematics or science are taught and learned across countries? It is inevitable that not all tasks on the PISA assessments are equally appropriate in different cultural contexts and equally relevant in different curricular and instructional contexts. To gauge this, PISA asked every country to identify those tasks from the PISA tests that it considered most appropriate for an international test. Countries were advised to give an on-balance rating for each task with regard to its relevance to "preparedness for life", authenticity and interest for 15-year-olds. Tasks given a high rating by each country are referred to as that country's most preferred questions for PISA. PISA then scored every country on its own most preferred questions and compared the resulting performance with the performance on the entire set of PISA tasks. For Greece, its relative standing remains the same, irrespective of whether all PISA items or the items 'preferred' by Greece are used as a basis for comparisons.

EQUITY IN THE DISTRIBUTION OF LEARNING OPPORTUNITIES

PISA explores equity in education from three perspectives: first, it examines differences in the distribution of learning outcomes of students and schools; second, it studies the extent to which students and schools of different socio-economic backgrounds have access to similar educational resources, both in terms of quantity and quality; and third, it looks at the impact of students' family background and school location on learning outcomes.

Above-average differences in performance between schools

The difference between high and low performers in reading (i.e. variation in students' performance in reading) is slightly greater in Greece than the OECD average, and 46% of this performance variation is attributable to the performance difference between schools (Table II.5.1). In Greece, this difference is greater than the OECD average of 39%.

The difference between high and low performers in reading has remained the same since 2000 between schools, but has increased within schools (Table V.4.1).

Equal access to some resources

A first potential source of inequities in learning opportunities lies in the distribution of resources across students and schools. In a school system characterised by an equitable distribution of educational resources, the quality or quantity of school resources would not be related to a school's average socio-economic background, as all schools would enjoy similar resources. Therefore, if there is a positive relationship between the socio-economic background of students and schools and the quantity or quality of resources, this signals that more advantaged schools enjoy more or better resources. A negative relationship implies that more or better resources are devoted to disadvantaged schools. No relationship implies that resources are distributed similarly among schools attended by socio-economically advantaged and disadvantaged students.

In around half of OECD countries, the student-teacher ratio relates positively to the socio-economic background of schools, in other words, disadvantaged schools tend to have more teachers per student. Greece is one of these countries (Table II.2.3). This positive relationship is also particularly pronounced in Belgium, Italy, Ireland, Spain, Estonia Portugal and the Netherlands. This important measure of resource allocation indicates that these countries use the student-teacher ratio to reduce disadvantage. Among OECD countries, only Turkey, Slovenia, Israel and Austria favour socio-economically advantaged students and schools with access to more teachers.

In the majority of OECD countries, more advantaged students also enjoy a higher proportion of better-qualified full-time teachers (Table II.2.2). The picture is similar when examining schools whose principals reported the quality of schools' educational resources. In Greece, disadvantaged students enjoy qualified teachers and educational resources at the same level as advantaged students, but the principals of schools that disadvantaged students attend tend to report more teacher shortage than those that advantaged students attend. All of these findings suggest that Greece ensures an equitable distribution of human resources, both in the quantity of resources and in their quality.

Average impact of students' socio-economic background on learning outcomes

Socio-economic disadvantage does not have a particularly strong impact on student performance in Greece (Table II.1.2): some 13% of the variation in student performance in Greece is explained by students' socio-economic background while the OECD average is 14%. In Iceland, Estonia, Finland, Norway, Canada, Japan, Korea and Italy, students' socio-economic background has a below-average impact on performance. In contrast, Hungary, Belgium, Turkey, Chile, Luxembourg, Germany, the United States, France and New Zealand all show an above-average impact of socio-economic background on reading performance. In other words, in these countries two students from different socio-economic backgrounds vary much more in their learning outcomes than is normally the case in OECD countries. It is important to emphasise that these countries, do not necessarily have a greater proportion of socio-economically disadvantaged students than other countries, but that socio-economic differences among students in these countries have a particularly strong impact on learning outcomes.

If inequalities in societies were always closely linked to the impact of socio-economic disadvantage on learning outcomes, the ability of public policy to improve equity in access to learning opportunities would be limited, at least in the short term. However, there is almost no relationship between income inequalities in countries and the impact of socio-economic background on learning outcomes (Figure II.1.3), that is, some countries succeed even under difficult conditions to mitigate the impact of socio-economic background on educational success.

In general, the accuracy with which socio-economic background predicts student performance varies considerably across countries. Most of the students who perform poorly in PISA come from challenging socio-economic backgrounds, and yet some of their disadvantaged peers excel in PISA and beat the odds against them. These students show that overcoming socio-economic barriers to achievement is possible. While the prevalence of resilience is not the same across educational systems, it is possible to identify substantial numbers of resilient students in practically all OECD countries.[6] In Greece, 7% of students can be considered resilient, in that they are among the 25% most socio-economically disadvantaged students in the country yet perform much better than what would be predicted based on their background (Table II.3.3). Across the OECD, an average of 8% of students are resilient, while the share of resilient students is over 11% in Korea, Finland and the partner country and economies Shanghai-China, Hong Kong-China, Macao-China and Singapore. These results confirm that, in Greece, policies to improve performance should not just focus on disadvantaged students, but also on those who perform poorly because of other factors, such as those discussed below.

Some other contexts related to poor performance

It is useful to examine three other aspects of socio-economic background and their relationship to student performance in greater detail.

- *Family composition*: In Greece, single-parent families are less prevalent than the OECD average (11% of 15-year-olds come from single-parent families compared with an average of 17%). ***Greek students from these families face an average risk of low performance as is the case across OECD countries*** (Table II.2.5). The performance difference between students coming from single-parent families and other type of families is 19 points in Greece, while it is 18 points across OECD countries.
- *Concentration of socio-economic disadvantage in schools*: Some 25% of students in Greece attend schools with a socio-economically disadvantaged intake, where 50% of students are disadvantaged themselves (i.e. they are grossly overrepresented); 27% of students are in socio-economically privileged schools, where only 7% of students are disadvantaged themselves. Disadvantaged students tend to perform worse than expected when they attend disadvantaged schools, and by a larger margin than in many other OECD countries. Advantaged students also tend to perform worse than expected when enrolled in disadvantaged schools, by an even larger margin. In contrast, disadvantaged students tend to perform better than expected when attending advantaged schools, but by a smaller margin than in many other OECD countries, while advantaged students tend to perform at the expected level in these schools. In schools with a mixed socio-economic intake, disadvantaged students tend to do better than expected and advantaged students tend to do as expected (Table II.5.10). This suggests that ***efforts to improve performance should mainly be directed towards schools with disadvantaged intake rather than towards individual students from disadvantaged backgrounds.***

THE LEARNING ENVIRONMENT IN THE CLASSROOM AND AT SCHOOL

Education policies and practices will only nurture student achievement if they result in more effective teaching and learning in the classroom. Results from PISA suggest that schools and countries where students work in a climate characterised by expectations of high performance and the will to work, good teacher-student relations, and high teacher morale tend to achieve better results, on average across countries. Even after accounting for socio-economic background and other aspects of the learning environment measured by PISA, the results show that reading performance is positively related to higher values, at the school level, on the *index of disciplinary climate* in 16 OECD countries, including Greece; on the *index of teacher-student relations* in 10 OECD countries, including Greece; and on the *index of teacher-related factors affecting school climate* in 14 OECD countries, including Greece (Table IV.2.13c). ***In Greece, the difference in reading performance between schools that show higher or lower levels of these three aspects is greater than in most OECD countries***.

The learning environment is also shaped by parents and school principals. Parents who are interested in their children's education are more likely to support their school's efforts and participate in school activities, thus adding to available resources, and school principals can define their schools' educational objectives and guide their schools towards them. These parents also tend to have an advantaged socio-economic background. PISA shows that school principals' perceptions of parents' pressure to adopt high academic standards and raise student achievement tend to be positively related to higher school performance in 19 OECD countries, including Greece, but it is positively related to performance in only 4 OECD countries, not including Greece, after accounting for students' and schools' socio-economic backgrounds (Tables IV.2.13b and IV.2.13c).

PISA also shows that the socio-economic backgrounds of students and schools and key features of the learning environment are closely interrelated, and that both are linked to performance in important ways. This is perhaps because students from socio-economically advantaged backgrounds bring with them a higher level of discipline and more positive perceptions of school values, or perhaps because parental expectations of good classroom discipline and strong teacher commitment are higher in schools with socio-economically advantaged intake. Conversely, disadvantaged schools may be subject to less parental pressure to reinforce effective disciplinary practices or ensure that absent or unmotivated teachers are replaced. In summary, students perform better in schools with a more favourable climate, partly because such schools tend to have more students from advantaged backgrounds who generally perform well, partly because those students reinforce the favourable climate, and partly for reasons unrelated to socio-economic variables. The effect of parental pressure is particularly closely related to socio-economic background, with little independent effect on performance and, in many countries, aspects related to the climate within the school, such as discipline and student-teacher relationships, are also related to performance independently of socio-economic and demographic factors.

These analyses are examined in greater detail in the following sections.

Below-average teacher-student relations

Positive teacher-student relations can help to establish an environment that is conducive to learning. Research finds that students, particularly disadvantaged students, tend to learn more and have fewer disciplinary problems when they feel that their teachers take them seriously. One explanation is that positive teacher-student relations help foster social relationships, create communal learning environments and promote and strengthen adherence to norms conducive to learning. PISA asked students to agree

or disagree with several statements regarding their relationships with the teachers in school. These statements include whether students get along with the teachers and whether teachers are interested in their personal well-being, whether teachers take the student seriously, whether teachers are a source of support if students need extra help, and whether teachers treat the student fairly.

Students in Greece reported weaker teacher-student relations than many of the OECD countries (Figure IV.4.1). For example, 62% of students in Greece agree or strongly agree that most teachers really listen to what the student has to say (the OECD average is 67%), 63% agree or strongly agree that teachers are a source of support if students need extra help (the OECD average is 79%), 65% agree or strongly agree that teachers treat the student fairly (the OECD average is 79%), 66% agree or strongly agree that their teachers are interested in their well-being (the OECD average is 66%), and 87% agree or strongly agree that they get along with their teachers (the OECD average is 85%). There is a positive relationship between teacher-student relations and student performance in Greece. For example, the quarter of students in Greece reporting the poorest student-teacher relations are 1.4 times more likely to also be among the quarter of the poorest performing students, which is the similar level as the OECD average (Table IV.4.1).[7]

In PISA 2000, students were asked some similar questions. For example, in 2000, 65% of students agreed or strongly agreed that most of their teachers really listen to what the student has to say, but that percentage dropped by 3 points in 2009 (Table V.5.11).

Below-average disciplinary climate

The disciplinary climate in the classroom and school can also affect learning. Classrooms and schools with more disciplinary problems are less conducive to learning, since teachers have to spend more time creating an orderly environment before instruction can begin. More interruptions within the classroom disrupt students' engagement in and concentration on their lessons. PISA asked students to describe the frequency with which interruptions occur in reading lessons. The disciplinary climate is indicated in PISA by the frequency of certain events: students don't listen to the teacher in language-of-instruction class; there is noise and disorder; the teacher has to wait a long time for students to quieten down; students cannot work well; and students don't start working for a long time after the lesson begins.

The majority of students in OECD countries enjoy orderly classrooms in their language-of-instruction classes, but this is not the case in Greece. Greek students reported the worst disciplinary climate among students in all other OECD countries (Table IV.4.2). Some 62% of Greek students reported that their teacher never or only in some lessons has to wait a long time before students settle down (the OECD average is 72%), 55% reported that they never or only in some lessons feel that students don't listen (the OECD average is 71%), 65% reported that they never or only in some lessons feel that students don't start working for a long time after the lesson begins (the OECD average is 75%), 58% reported that noise or disorder never or only in some lessons affects learning (the OECD average is 68%), and 56% of students reported that they can work well practically most of the time (the OECD average is 81%) (Figure IV.4.2). Since 2000, the disciplinary climate slightly improved in some aspects but worsened in others aspects in Greece.

The percentage of students who reported that they never or only in some lessons feel that students don't start working for a long time after the lesson begins and that noise or disorder never or only in some lessons affects learning increased by around five percentage points or more since 2000. In contrast, the percentage of students who reported that they never or only in some lessons feel that students don't listen to what the teacher says decreased by 15 percentage points and the percentage of students who reported that that they feel they can work well increased by 4 percentage points since 2000.

In Greece, the relationship between disciplinary climate and student performance is weaker than most OECD countries. For example, the likelihood for the quarter of students in Greece reporting the poorest disciplinary climate to be also the quarter of poorest-performing students is the lowest among the OECD countries (Table IV.4.2).[8]

Average level attitudes and behaviour among teachers

To determine the extent to which teacher behaviour influences student learning, school principals in PISA were asked to report the extent to which they perceived learning in their schools to be hindered by such factors as teachers' low expectations of students, poor student-teacher relations, absenteeism among teachers, staff resistance to change, teachers not meeting individual students' needs, teachers being too strict with students, and students not being encouraged to achieve their full potential. Greece is around the OECD average on these measures, and the reports from school principals highlight a number of challenges: 24% of students in Greece are enrolled in schools whose principals reported that learning is hindered to some extent or a lot because students are not being encouraged to achieve their full potential (OECD average is 23%), 24% are enrolled in schools whose principals reported that this is the case because staff resist change (the OECD average is 28%), 30% are in schools where, according to principals, teachers do not meet individual students needs (the OECD average is 28%) and 36% are in schools where teachers' low expectations of students hinders learning (in contrast, in Finland that proportion is just 6% and the OECD average is 22%) (Figure IV.4.5). But only 14% of school principals see teachers' absenteeism as a problem (the OECD average is 17%).

HOW SCHOOLING IS ORGANISED: UPPER SECONDARY LEVEL

When examining the characteristics of schools attended by 15-year-olds, it is important to keep in mind that the students assessed in PISA could be found both in lower and upper secondary schools, and this distribution differs greatly across countries. ***In Greece, 93% of 15-year-olds assessed in PISA attend upper secondary schools***, while over 95% of 15-year-olds are in lower secondary schools in Spain, Norway, Finland, Denmark, Poland, Sweden, Iceland, Estonia and Germany (Table IV.3.1). The organisational features described in this section mainly concern Greece's upper secondary schools. It is important to note that issues including the allocation of resources between schools, the level of school autonomy, school competition, the proportion of private schools and performance variation between schools discussed in this section are mainly the features of Greek upper secondary schools,

Many countries have shifted public and governmental concern away from control over the resources and content of education to focus on outcomes. This becomes apparent when the distribution of decision-making responsibilities in education is reviewed across successive PISA assessments. In addition, some countries have made greater efforts to devolve responsibility to the frontline, encouraging responsiveness to local needs and strengthening accountability. PISA shows a clear relationship between the relative autonomy of schools in managing instructional policies and practices and outcomes across systems when autonomy is coupled with accountability.

Very limited school autonomy over curricular and assessment policies and over resource allocation

The degree to which students and parents can choose schools, and the degree to which schools are considered autonomous entities that make organisational decisions independently of district, regional, or national entities can affect student performance. Results from PISA suggest that school autonomy in defining curricula and assessments relates positively to the systems' overall performance (Figure IV.2.4a). For example, school systems that provide schools with greater discretion in making decisions regarding student assessment policies, the courses offered, course content and the textbooks used, tend to be school systems that perform at higher levels.

In Greece, the level of school responsibility reported by principals in developing curricula and assessments is the lowest among the OECD countries. In Greece, 20% of students are in schools whose principals reported that only principals and/or teachers have considerable responsibly in establishing student assessment policies (the OECD average is 66%), 6% reported that only principals and/or teachers have considerable responsibly in deciding which courses are offered (the OECD average is 50%), 1% reported that only principals and/or teachers have considerable responsibly in determining course content (the OECD average is 45%), and 7% reported that only principals and/or teachers have a considerable responsibly in choosing which textbooks are used (the OECD average is 78%) (Figure IV.3.3b).

Data from PISA also show that in school systems where most schools post achievement data publicly, schools with greater discretion in managing their resources tend to show higher levels of performance. In school systems where schools do not post achievement data publicly, a student who attends a school with greater autonomy in resource management than the average OECD school tends to perform 3.2 score points lower in reading than a student attending a school with an average level of autonomy. In contrast, in school systems where schools do post achievement data publicly, a student who attends a school with above-average autonomy scores 2.6 points higher in reading than a student attending a school with an average level of autonomy (Table IV.2.5).

Greek also shows below-average school autonomy in resource allocation (Table IV.3.5). Comparing schools in Greece, the relationship between the level of a school's autonomy in allocating resources and reading performance is around the OECD average. But in some countries where more schools tend to post achievement data publicly, students in schools with more responsibility for resource allocation tend to perform better. For example, in Chile, the quarter of students in schools whose principals reported the lowest levels of school responsibility for resource allocation is 2.0 times more likely to also be the poorest-performing quarter of students. In Chile, 36% of students are in schools that post achievement data publicly while less than 31% of Greek students are enrolled in such schools (Table IV.3.13).

Very limited competition among schools

Students in some school systems are encouraged or even obliged to attend their neighbourhood school. However, reforms over the past decades in many countries have tended to give more authority to parents and students to choose schools that meet their educational needs or preferences best. The assumption has been that if students and parents have sound information and choose schools based on academic criteria, this will foster competition among schools and create incentives for institutions to organise programmes and teaching in ways that better respond to diverse student requirements and interests, thus reducing the costs of failure and mismatches. In some school systems, schools not only compete for student enrolment, but also for funding. Direct public funding of independently managed institutions, based on student enrolments or student credit-hours, is one model for this. Giving money to students and their families through, for example, scholarships or vouchers, to spend in public or private educational institutions of their choice is another method (Figure IV.3.4).

According to the responses of school principals, across OECD countries, 76% of students attend schools that compete with at least one other school for enrolment. Only in Switzerland, Norway and Slovenia do less than 50% of students attend schools that compete with other schools for enrolment. In contrast, in the Netherlands, Australia, Belgium, the Slovak Republic and Japan, over 90% of students attend schools that compete with other schools for enrolment. In Greece, 60% of students attend schools that compete with at least one other school for enrolment (Table IV3.8a).

Some 13 OECD countries allow parents and students to choose public schools and use vouchers or tax credits in their school-choice arrangements. Eleven OECD countries give parents freedom of choice of public schools, but do not offer vouchers or tax credits; two OECD countries restrict parents and students in the choice of public schools, but offer tax credits or vouchers to attend other schools; and in four OECD countries, parents and students must attend the public school nearest to where they live and are not offered any kind of subsidy to attend other schools (Figure IV.3.4).

Competition among schools, as reported by school principals in PISA, is consistent with these school-choice arrangements as reported by central and regional governments, and is greatest in school systems that grant parents and students the freedom to choose public schools and offer subsidies in the form of vouchers or tax credits to attend other schools. In countries with these characteristics, 85% of students attend schools whose principals reported that they compete with at least one other school for enrolment. The lowest levels of school competition are found in countries that restrict attendance to public schools and do not offer subsidies to attend other schools. In the average country in this category, 52% of students attend schools whose principals reported that they compete for student enrolment with at least one other school (Figure IV.3.4). Levels of school competition are similar in countries that restrict attendance to public schools, yet offer subsidies, and in countries that do not restrict attendance to public schools but offer no subsidies. In these countries, around 75% of students attend schools whose principals reported that they compete with other schools for enrolment. The use of vouchers or tax credits and opening choice among public schools enhances school competition for enrolment. However, competition among schools is less frequent in remote and rural areas, where public schools are usually located at greater distances from each other, making it more difficult for parents and students to choose a school other than the one that is closest to their home (Table IV.2.6).

Among schools within a country, competition and performance do seem related; but once the socio-economic profile of students and schools are taken into consideration, the relationship weakens, since privileged students are more likely to attend schools that compete for enrolment (Tables IV.2.4b and IV.2.4c). This may reflect the fact that socio-economically advantaged students, who tend to achieve higher scores, are also more likely to attend schools that compete for enrolment, even after accounting for location and attendance in private schools (Table IV.2.6). In Greece, school competition is not related to performance even before accounting for the socio-economic and demographic background of students and schools (Table IV.2.4b).

Why are socio-economically advantaged students more likely to attend schools of their choice? To understand differences in how parents choose schools for their children, PISA asked a series of questions regarding school choice in the questionnaire for parents that was distributed in eight OECD countries (no data from parents are available for Greece). On average, socio-economically disadvantaged parents are over 13 percentage points more likely than advantaged parents to report that they considered "low expenses" and "financial aid" to be very important determining factors in choosing a school (Table IV.2.7). While parents from all backgrounds cite academic achievement as an important consideration when choosing a school for their children, socio-economically advantaged parents are, on average, 10 percentage points more likely than disadvantaged parents to cite that consideration as "very important". It is possible that there can be differences in the parent's reasons due to socio-economic status because some of the priorities are already met in schools available to advantaged parents. Still, these differences suggest that disadvantaged parents consider that they have more limited choices of schools for their children because of financial constraints. If children from these backgrounds cannot attend high-performing schools because of school fees, 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.

Below-average proportion of private schools

School education takes place mainly in public schools. Nevertheless, with an increasing variety of educational opportunities, programmes and providers, governments are forging new partnerships to mobilise resources for education and to design new policies that allow all stakeholders to participate more fully and share costs and benefits more equitably. Privately funded education is not only a way of mobilising resources from a wider range of funding sources, it is sometimes also considered a way of making education more cost-effective. Publicly financed schools are not necessarily also publicly managed. Instead, governments can transfer funds to public and private educational institutions according to various allocation mechanisms. Indeed, publicly funded private schools are the most common model of private education in OECD countries (see section on school choice, above).

Across OECD countries, 15% of students are enrolled in privately managed schools that are either privately or government funded, although in many countries government authorities retain significant control over these schools, including the power to shut down non-performing schools. Enrolment in privately managed schools exceeds 50% of 15-year-old students in the Netherlands, Ireland

and Chile, and in Australia and Korea between 35% and 40% of students are enrolled in such schools. In Greece, 3% of students attend schools that are privately managed and 97% attend schools that are publicly managed (Table IV.3.9).

On average across OECD countries, privately managed schools display a performance advantage of 30 score points on the PISA reading scale (Table IV.3.9). However, once the socio-economic backgrounds of students and schools is accounted for, public schools come out with a slight advantage of seven score points, on average across OECD countries. In Greece, privately managed schools tend to perform 55 score points higher than publicly managed schools before accounting for the socio-economic background, and there is no performance difference between public and private schools after accounting for students' and schools' socio-economic backgrounds.

PISA classifies OECD countries into four groups that share similar profiles in the way they allow schools and parents to make decisions that affect their children's education. The grouping is based on the levels of school autonomy and school competition. Two categories are identified for each dimension and the interplay between these dimensions results in four groups: School systems that offer high levels of autonomy to schools in designing and using curricula and assessments and encourage more competition between schools; school systems that offer low levels of autonomy to schools and limit competition between schools; school systems that offer high levels of autonomy to schools, but with limited competition between schools; and school systems that offer low levels of autonomy to schools, yet encourage more competition between schools (Figure IV.3.5).

- Across OECD countries, the most common configuration is the one that gives schools the freedom to make curricular decisions, yet restricts competition for enrolment among schools. These school systems have relatively limited levels of choice for parents and students and there is little competition for enrolment among schools. Private schools are not widely available in these countries. Twenty-two OECD countries fall into this category.
- School systems that offer relatively low levels of autonomy to schools and low levels of choice to parents are also fairly common across OECD countries: 4 OECD countries, including Greece, share this configuration and 11 partner countries and economies do.
- Six other OECD countries offer high levels of autonomy and choice, either in the form of a high prevalence private schools or competition among schools for enrolment. In these school systems, schools have the freedom to choose teaching methods to meet learning objectives, and parents and students can choose among a variety of schools for enrolment.

Heterogeneous classrooms

While teaching and learning are at the heart of schooling, they are supported by a complex organisation responsible for everything from selecting and admitting students to schools and classrooms, to evaluating their progress, formulating curricula, promoting successful approaches to teaching and learning, creating incentives to motivate students and teachers, and deciding on the distribution of financial, material and human resources–all with the aim of providing quality education. This section looks at how school systems are organised to allocate students to programmes, schools and classes.

In most high-performing countries, it is the responsibility of schools and teachers to engage with the diversity of student interests, capacities, and socio-economic contexts, without making students repeat the school year or transferring them to educational tracks or schools with lower performance requirements. The data from PISA show that creating homogeneous schools and/or classrooms through selection is unrelated to the average performance of education systems, but clearly associated with larger variations in student achievement and a significantly larger impact of socio-economic background on learning outcomes. In particular, the earlier in the student's career the selection occurs, the greater the impact of socio-economic background on learning outcomes. That suggests that selection tends to reinforce inequalities, as students from disadvantaged backgrounds tend to be exposed to lower-quality learning opportunities when compared to their peers from more advantaged backgrounds (Figure IV.2.1a).

PISA data also show that grade repetition is not only negatively related to equity but is also negatively related to the average performance of education systems. That is, school systems with high rates of grade repetition tend to also be school systems with poorer student performance. Moreover, the more schools group students by ability in all subjects and the more frequently schools transfer students to other schools because of students' low academic achievement, behavioural problems or special learning needs, the lower the school systems' overall performance, even after accounting for national income. While transferring students with difficulties out of a school may be advantageous to the school, the practice seems to relate negatively to the performance of the education system as a whole, and to larger performance differences among schools (Figure IV.2.1a and Table IV.2.1). Transferring students for these reasons may hurt student achievement because changing schools implies a loss of social capital, since students have limited access to the resources that are shared in the school they are moving out of and need to recreate support and friendship networks in their new schools. Furthermore, when school transfers are motivated by behavioural problems, low academic achievement and special learning needs, students who are transferred out are more likely to be received by schools with larger proportions of similar students. Students who are transferred for these reasons not only pay the cost in terms of lost social capital, but are also less likely to benefit from higher achieving peers. Also, in systems where transferring students or grade repetition is commonplace, teachers and the school community have an incentive to evade problems by transferring students

rather than committing effort and resources to solving the underlying problems. They also tend to have more autonomy to adapt the learning environment in their schools (Figure IV.2.2). Equally important, a greater rate of student transfers seems also be related to greater socio-economic inequities.

PISA classifies school systems into 12 groups, according to the differentiation[9] policies and practices they adopt (Figure IV.3.2).

- Thirteen OECD countries, including Greece, are characterised by relatively low levels of formal differentiation. In these school systems, students are not systematically streamed, schools are not selective in their admissions processes, and students usually do not repeat grades and are not transferred to other schools. As a result, classrooms tend to be heterogeneous. In Greece, 95% of students enter primary school at the ages of 6 or 7 and only 6% of student reported to have repeated a grade, consequently there is no much variation in the grade level among 15-year-olds and Greece is classified as having low levels of vertical differentiation (Table IV.3.1). The first selection in the education system occurs at the age of 15 when there are two distinct education programmes available to 15-year-olds (Table IV.3.2a). Some 6% of students are in schools that select students always based on students' records of academic performance and/or recommendations of feeder schools (Table IV.3.2b). Greece is thus classified as using a low level of horizontal differentiation at the system level. Finally, 42% of Greek students are in schools that are very likely to transfer difficult students to other schools (Table IV.3.3a), but only 0.4% are in schools that group students by ability in all subjects. Thus Greece is classified as using low levels of horizontal differentiation at the school level.
- School systems in six other OECD countries stratify students into different programmes based on students' academic performance, usually before they are 15 years old. Grade repetition is not common in these school systems, nor is horizontal differentiation at the school level.
- In four OECD countries, school systems also apply horizontal differentiation at the level of the school system. These school systems are characterised by their use of streaming and early selection into these programmes based on students' academic performance, but generally, they do not use grade repetition or school-level differentiation.
- Among the countries whose school systems use vertical differentiation to create homogeneous learning environments, the Netherlands and Switzerland also apply high levels of horizontal differentiation at the school level and at the level of the school system.

Many of the best-performing countries have developed elaborate support systems to foster the motivation of the full diversity of students to become independent and lifelong learners. They tend to train teachers to be better at diagnosing learning problems so that they can be addressed through personalised instruction. They also help individual teachers to become aware of specific weaknesses in their own practices, which often means not just becoming aware of what they do but also changing the underlying mindset. These systems disseminate best practices among their teachers and encourage their teachers to make the necessary changes to their own teaching methods with incentives that are not solely material. As noted above, the personalisation is achieved by creating flexible learning pathways through the education system rather than by establishing individualised goals or institutional tracking, which have often been shown to lower expectations of students and provide easy ways for teachers and schools to avoid problems rather than solving them.

No standards-based assessments and limited use of standardised tests

As discussed in the 2009 edition of the *OECD's Education at a Glance*, over the past decade, assessments of student performance have become common in many OECD countries – and the results are often widely reported and used in both public and more specialised debate. However, the rationale for assessments and the nature of the instruments used vary greatly within and across countries. Methods employed in OECD countries include different forms of external assessment, external evaluation or inspection, and schools' own quality assurance and self-evaluation efforts.

One aspect relating to accountability systems concerns the existence of standards-based external examinations. These are examinations that focus on a specific school subject and assess a major portion of what students who are studying this subject are expected to know or be able to do (Bishop, 1998, 2001). Essentially, they define performance relative to an external standard, not relative to other students in the classroom or school. These examinations usually have a direct impact on students' education – and even on their futures – and may thus motivate students to work harder. Other standardised tests, which may be voluntary and implemented by schools, often have only indirect consequences for students. For teachers, standardised assessments can provide information on students' learning needs and can be used to tailor their instruction accordingly. In some countries, such as Brazil, Hungary, Italy, Malaysia, Mexico, Poland and the Slovak Republic, such tests are also used to determine teachers' salaries or to guide professional development (for data, see the OECD's 2009 edition of *Education at a Glance*). At the school level, information from standardised tests can be used to determine the allocation of additional resources, and what interventions are required to establish performance targets and monitor progress.

Across OECD countries, students in school systems that require standards-based external examinations perform, on average, over 16 points higher than those in school systems that do not use such examinations (Figure IV.2.6a).

Among OECD countries, there are standards-based external examinations for secondary school students in the Czech Republic, Denmark, Estonia, Finland, France, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Poland, the Slovak Republic, Slovenia, Turkey and the United Kingdom. In Australia, these examinations cover 81% of secondary students, in Canada 51% and in Germany 35%. In Austria, Belgium, Chile, Greece, Mexico, Portugal, Spain, Sweden and Switzerland, such examinations do not exist or only in some parts of the system (Table IV.3.11).

In PISA 2009, school principals were asked to report on the types and frequency of assessment used: standardised tests, teacher-developed tests, teachers' judgemental ratings, student portfolios or student assignments. Some 76% of students in OECD countries are enrolled in schools that use standardised tests. Standardised tests are relatively uncommon in Slovenia, Belgium, Spain, Austria and Germany, where less than half the 15-year-olds attend schools that assess students through standardised tests. In contrast, the use of standardised tests is practically universal in Luxembourg, Finland, Korea, the United States, Poland, Denmark, Sweden and Norway, where over 95% of students attend schools that use this assessment at least once a year (Table IV.3.10). In Greece, 65% of students are in schools that use standardised tests.

Limited accountability arrangements

The purposes of assessments vary greatly across countries. At the school level, these assessments can be used by schools to compare themselves to other schools, to monitor progress, or to make decisions about instruction. Some 59% of students across OECD countries are in schools that use achievement data to compare their students' achievement levels with those in other schools or with regional/national benchmarks. This practice is most common in the United States, New Zealand and the United Kingdom, where over 90% of students attend schools that use achievement data for comparative purposes. In Belgium, Japan, Austria, Spain and Greece, less than one-third of students attend schools that use achievement information this way (Table IV.3.12).

It is more common for schools to use achievement information to monitor school progress from year to year: on average across OECD countries, some 77% of students are in schools that do so. In 21 countries, more than 80% of students attend schools that use achievement data this way. Only in Denmark, Luxembourg, Switzerland and Austria do less than 50% of students attend schools that use achievement data to monitor progress. In Greece, 62% of students are in schools that use achievement data this way.

Data on student achievement can also be used to identify aspects of instruction or the curriculum that could be improved. Across OECD countries, 77% of students are in schools that reported doing so, and over 90% of students in New Zealand, the United States, the United Kingdom, Iceland, Poland, Mexico, Chile, Spain and Israel attend schools that reported using achievement data in this way. Curriculum and instructional assessment using achievement data is less common in Greece and Switzerland, where less than 50% of students attend schools that use achievement data this way.

In contrast to standards-based external examinations, PISA does not show that the prevalence of standardised tests is systematically related to performance (Figure IV.2.6a). This may be partly because the content and use of standardised tests vary considerably across schools and systems. However, education systems with a higher prevalence of standardised tests tend to show smaller socio-economic inequities between schools and consequently show a smaller impact of school socio-economic background on performance (Table IV.2.10). The same holds for the use of assessment data to identify aspects of instruction or the curriculum that could be improved and the high proportions of schools whose achievement data is tracked over time by administrative authorities.

PISA 2009 collected data on the nature of accountability systems and the ways in which the resulting information was used (Table IV.3.13). Some school systems make achievement data public to make stakeholders aware of the comparative performance of schools and, where school-choice programmes are available, to make parents aware of the choices available to them. Across OECD countries, an average of 37% of students attend schools that make achievement data available to the public; but in Belgium, Finland, Switzerland, Japan, Austria and Spain, less than 10% of students attend such schools. In the United States and the United Kingdom, however, more than 80% of students attend schools that make student achievement data publicly available. In Greece, 31% of students attend schools that make student achievement data publicly available. In seven OECD countries, including Greece, and nine partner countries and economies, schools whose school principals reported that student achievement data are posted publicly perform better than schools whose achievement data is not made publicly available, before accounting for the socio-economic and demographic backgrounds of students and schools. Moreover, since in most of the countries the schools that post achievement data publicly tend to be socio-economically advantaged schools, this performance advantage is often not observed once socio-economic background is accounted for (Figure IV.2.6b).

Across OECD countries, an average of 66% of students attend schools whose achievement data is tracked over time by administrative authorities. In 25 OECD countries, more than 50% of students attend such schools, while in Greece 55% of students do (Table IV.3.13).

Across OECD countries, some of 33% of students attend schools that use achievement data to determine how resources are distributed. In Israel, Chile and the United States, more than 70% of students attend schools in which the principal reports that instructional resources are allocated according to the school's achievement data. This practice is least common in Iceland,

Greece, Japan, the Czech Republic and Finland, where less than 10% of students attend schools in which is achievement data used this way.

Some school systems make achievement data available to parents in the form of report cards and by sending teacher-formulated assessments home. Some school systems also provide information on the students' academic standing compared with other students in the country or region or within the school (Table IV.3.14). Across OECD countries, an average of 52% of students attend schools that use achievement data relative to national or regional benchmarks and/or as a group relative to students in the same grade in other schools; but in 17 countries, including Greece, over 50% of students attend schools that do not provide any information regarding the academic standing of the students in either of these ways. In contrast, in Sweden, the United States, Korea, Chile, Norway and Turkey, more than 80% of students attend schools that provide parents with this information as compared with national or regional student populations.

An average of 59% of students across OECD countries attends schools whose student achievement data is used to monitor teacher practices (Table IV.3.15). Over 80% of students in Poland, Israel, the United Kingdom, Turkey, Mexico, Austria and the United States attend such schools, while 30% of students or less in Finland, Switzerland, Greece and Sweden attend such schools. Many schools across OECD countries complement this information with qualitative assessments, such as teacher peer reviews, assessments by school principals or senior staff, or observations by inspectors or other persons external to the school. Most schools across OECD countries use either student-derived, direct observations or reviews to monitor teachers, but school principals in Finland reported that they rarely use either to monitor teacher practices. Some 18% of students in Finland attend schools that use student assessments to monitor teachers; around 20% of students attend schools that use more qualitative and direct methods to monitor teacher practices; and only 2% of students attend schools that monitor teacher practices using observations of classes by inspectors or other persons external to the school. In Greece, 27% of students attend schools that use student assessments to monitor teachers; 15% of students attend schools that use observations of lessons by the principal or senior staff to monitor teacher practices; 31% of students attend schools that use teacher peer review to monitor teacher practices; and 26% of students attend schools that monitor teacher practices using observations of classes by inspectors or other persons external to the school.

There has also been a growing trend among OECD countries to use outstanding performance in teaching as a criterium for base salary and additional payments awarded to teachers in public institutions. While such practices were used in 38% of the 29 countries with available data in 2002, in 2008, 45% of these countries used these practices (Table D.3.3 in the 2010 edition of *Education at a Glance*).

PISA groups OECD countries into four groups sharing similar profiles based on three dimensions (Figure IV.3.6). The first is whether achievement data are used for various benchmarking and information purposes. The second is whether achievement data are used to make decisions that affect the school. The idea is that school systems that use achievement data for benchmarking and information purposes are more likely to use this data to compare themselves with other schools, monitor progress across time, have their progress tracked by administrative authorities, to make their achievement data public and provide parents with their child's achievement benchmarked to national or regional populations. School systems that use achievement data for decision-making are more likely to use achievement data to determine the allocation of resources, make curricular decisions, and to evaluate teachers' instruction.

- A first group of countries, composed of 16 OECD countries, tends to use achievement data for benchmarking and information purposes and also for decisions that affect the school.
- Three OECD countries use achievement data for benchmarking and information, but not for decisions affecting the school.
- A third group, comprising four OECD countries, uses achievement data for decisions affecting the school, but not for benchmarking and information.
- The fourth group, composed of nine OECD countries, including Greece, is less likely to use achievement data either for benchmarking and information or for decision making.

Ineffective spending choices

Effective school systems require the right combination of trained and talented personnel, adequate educational resources and facilities, and motivated students ready to learn. But performance on international comparisons cannot simply be tied to money: across OECD countries, expenditure per student explains only 9% of the variation in the mean PISA performance between countries (Figure I.2.2).

Research usually shows a weak relationship between educational resources and student performance, with more variation explained by the quality of human resources (i.e. teachers and school principals) than by material and financial resources, particularly among industrialised nations. The generally weak relationship between resources and performance observed in past research is also seen in PISA. At the level of the education system, and net of the level of national income, the only type of resource that PISA shows

to be correlated with student performance is the level of teachers' salaries relative to national income (Figure IV.2.8). Teachers' salaries are related to class size in that if spending levels are similar, school systems often make trade-offs between smaller classes and higher salaries for teachers. The findings from PISA suggest that systems prioritising higher teachers' salaries over smaller classes, such as those in Japan and Korea, tend to perform better. Greece shows the opposite pattern. In Greece, the cumulative expenditure by educational institutions per student aged 6 to 15 is below the OECD average; the class size for the language of instruction lessons is 23 which is below the OECD average (the OECD average is 25); and the ratio of teachers' salaries to GDP per capita is lower than the OECD average (Tables IV.3.21a, IV.3.21b and IV.3.22) The lack of correlation between the level of resources and performance among school systems does not mean that resource levels do not affect performance at all. Rather, it implies that, given the variation in resources observed in PISA, they are unrelated to performance or equity. A school system that lacks teachers, infrastructure and textbooks will almost certainly perform at lower levels; but given that most school systems in PISA appear to satisfy the minimum resource requirements for teaching and learning, the lack of a relationship between many of the resource aspects and both equity and performance may result simply from a lack of sufficient variation among OECD countries.

Providing pre-primary education to the majority of children

Whether and how long students are enrolled in pre-primary education is also an important resource consideration. Many of the inequalities that exist within school systems are already present once students enter formal schooling and persist as students' progress through school. Earlier entrance into the school system may reduce these inequities. On average across OECD countries, 72% of today's 15-year-old students reported that they had attended pre-primary education for more than one year. Attendance in more than one year of pre-primary education was practically universal in Japan (97%), and in the Netherlands, Hungary, Belgium, Iceland and France, over 90% of 15-year-old students reported that they had attended pre-primary school for more than one year. In Greece, 66% of students reported that they had attended pre-primary education for more than one year. More than 90% of students in 27 OECD countries, including Greece (95%), had attended pre-primary school for at least some time, and 98% or more of students in Japan, Hungary, France and the United States reported having done so. Pre-primary education is rare in Turkey, where less than 30% of 15-year-olds had attended pre-primary school for at least a year. More than one year of pre-primary education is uncommon in Chile, Ireland, Canada and Poland, where less than 50% of students attended pre-primary school for that length of time (Table IV.3.18).

PISA 2009 results show that, in general, students who had attended pre-primary education perform better in reading at the age of 15 than students who had not (Figure II.5.9 and Table II.5.5). In 32 OECD countries, including Greece, students who had attended pre-primary education for more than one year outperformed students who had not attended pre-primary education at all – in many countries by the equivalent of well over a school year. This finding holds in most countries even after accounting for students' socio-economic backgrounds. However, across countries, there is considerable variation in the impact of attendance in pre-primary education and reading performance when students are 15 years old. Among OECD countries, in Israel, Belgium, Italy and France, students who attended pre-primary education for more than one year perform at least 64 score points higher in reading than those who did not, which corresponds to the equivalent of roughly one-and-a-half school years. This was the case even after accounting for students' socio-economic background. On the other hand, in Estonia, Finland, the United States and Korea, there is no marked difference in reading scores between those who attended pre-primary school for more than one year and those who did not attend at all, after accounting for students' socio-economic background. In Greece, the students who had attended pre-primary education for one year or more scored an average of 69 points higher on the PISA reading scale than those who did not and after accounting for students' socio-economic background, the performance advantage is 49 score points. These results underline the importance of pre-primary education, and international comparisons of primary-school children show high pre-primary enrolment rates among both advantaged and disadvantaged Greek children.

The next challenge will be to increase the positive impact of pre-primary education on performance later on in students' school careers.

One factor that may explain the variations in the impact of pre-primary education on later school performance is the quality of pre-primary education. This hypothesis is supported by the fact that the impact tends to be greater in education systems where pre-primary education is of longer duration, has smaller pupil-to-teacher ratios or benefits from higher public expenditure per pupil (Table II.5.6).

When this impact is compared according to socio-economic background, in most OECD countries, there is no significant difference in the impact between students from socio-economically disadvantaged and advantaged backgrounds (Table II.5.8). Students benefit equally from attending pre-primary school in 31 OECD countries, including Greece, and 25 partner countries and economies. The United States is the only OECD country where PISA shows that disadvantaged students benefit more from pre-primary education. Part of the difference in the impact of attendance in pre-primary education on the performance of students from different socio-economic backgrounds may be due to the fact that many factors other than pre-primary education (e.g. education in and out of school that students received between the ages of 6 and 15) may influence 15-year-olds' performance.

Notes

1. Though rank 25 is the best estimate, due to sampling and measurement error the rank could be between 22 and 29.
2. Even after accounting for sampling and measurement errors, the rank is 30.
3. Even after accounting for sampling and measurement errors, the rank is 30.
4. No such data are available for Greece.
5. This is measured by the *PISA index of economic, social and cultural status* of students. The index has an average of 0 and a standard deviation of 1 for OECD countries. The index value for the most disadvantaged quarter of students is -1.28 for Greece and -1.14 for the OECD average. The index value for the entire student population is -0.02 for Greece and 0.00 for the OECD average.
6. Resilient students are those who come from a socio-economically disadvantaged background and perform much better than would be predicted by their background. To identify these students, first, the relationship between performance and socio-economic background across all students participating in the PISA 2009 assessment is established. Then the actual performance of each disadvantaged student is compared with the performance predicted by the average relationship among students from similar socio-economic backgrounds across countries. This difference is defined as the student's residual performance. A disadvantaged student is classified as resilient if his or her residual performance is found to be among the top quarter of students' residual performance from all countries.
7. In Greece, one unit of the PISA index of teacher-student relations is positively associated with 11 score points on the PISA reading scale (Table IV.4.1).
8. In Greece, one unit of the PISA index of disciplinary climate is positively associated with 11 score points on the PISA reading scale (Table IV.4.2).
9. Vertical differentiation refers to the ways in which students progress through the education systems as they become older. Even though the student population is differentiated into grade levels in practically all schools in PISA, in some countries, all 15-year-old students attend the same grade level, while in other countries they are dispersed throughout various grade levels as a result of policies governing the age of entrance into the school system and/or grade repetition. Horizontal differentiation refers to differences in instruction within a grade or education level. It can be applied by the education system or by individual schools that group students according to their interests and/or performance. At the system level, horizontal differentiation can be applied by schools that select students on the basis of their academic records, by offering specific programmes (vocational or academic, for example), and by setting the age at which students are admitted into these programmes. Individual schools can apply horizontal differentiation by grouping students according to ability or transferring students out of the school because of low performance, behavioural problems or special needs.

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Strong Performers and Successful Reformers in Education

Education Policy Advice for Greece

The future of Greece's well-being will depend on improving educational performance to boost productivity and improve social outcomes. In the current economic context, with the need to get best value for spending, Greece must and can address inefficiencies in its education system.

The challenges are significant. For example, Greece lags behind many OECD countries in performance on PISA, including countries with the same or lower levels of expenditure per student as well as countries with the same and lower levels of economic development. Salary costs per student are above the OECD average, mostly because Greek teachers have less teaching time and Greece has smaller classes. A smaller percentage of students who enter tertiary education complete a first degree within the statutory study time than in any other country in Europe.

To address the challenges, the Greek government has established a bold agenda and sought advice from a task force on the development and implementation of reform proposals that reflect best practices in OECD countries. This report provides the outcomes of the work of the task force. It presents a roadmap for how the reforms can be successfully implemented, with pointers to relevant experience in other countries. As a contribution to the on-going policy discussions in Greece, it recommends specific short-, medium- and long-term actions that can improve efficiency in the country's education system.

Further Reading

Creating Effective Teaching and Learning Environments: First Results from TALIS (2009)
Strong Performers and Successful Reformers in Education: Lessons from PISA for the United States (2010)
PISA 2009 Results: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science (Volume I) (2010)

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