Centre for Education Policy Development (KANEP/GSEE)
Greek General Confederation of Labour

Annual Education Report 2015

Key indicators on education

Main conclusions

the Greek primary and secondary education
- Part A
the european and international reference framework (2001-2012)

January 2016
ATHENS

Study:

KEY INDICATORS ON EDUCATION 2015
The Greek Primary and Secondary education
Part A: the European and international reference framework (2002-2013)

International and national databases:

HELLENIC STATISTICAL AUTHORITY (ELSTAT)
Section: EDUCATION
Data: database, 2002 until 2013 (data on start and end of the school year)

HELLENIC MINISTRY OF ECONOMY AND FINANCE – GENERAL ACCOUNTING OFFICE
Data : State Budgets and Financial Statements of years 2005 -2015

EUROSTAT

EURYDICE – NETWORK ON EDUCATION SYSTEMS & POLICIES IN EUROPE

OECD – ORGANISATION FOR ECONOMIC CO-OPERATION & DEVELOPMENT

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The **CENTRE FOR EDUCATION POLICY DEVELOPMENT** of **GSEE** completed in January 2016 the **Annual Education Report 2015** on:

The key indicators on education: the Greek primary and secondary education

– Part A: the european and international reference framework

The Annual Education Report for 2015 and 2016 of the Centre for Education Policy Development of GSEE, adopting the standards of the Annual Reports 2012-2014 on Tertiary Education, is focused on the analysis of all key indicators of formal education in the educational levels of Preschool education (ISCED 0), Primary education (ISCED 1), Lower Secondary Education (ISCED 2) and the Upper Secondary Education (ISCED 3), which is differentiated into General (ISCED 3A) and Technical/ Vocational education (ISCED 3B), over the period 2002-2013 and developed in three Parts (volumes).

The **Annual Education Report for 2015** (Part A) analyzes the international (OECD - Education at a glance 2014 & 2015, PISA 2006-2009-2012) and the European (EU-28, Eurostat Network EURYDICEC) reference framework of the Greek Primary and Secondary education, presents a comparative depiction of all **economic** and **non-economic** indicators available, divided into **inputs** (investments) and **outputs** (educational outcomes) of the systems. This report was published on 19 January 2016.

The **Annual Education Report of 2016** (Part B & C) analyzes the national (ELSTAT) reference framework of the Greek Primary and Secondary Education, presents a comparative depiction of all economic and non-economic indicators available, differentiated into inputs (investments) and outputs (educational outcomes) at **regional** (administrative regions NUTS2) and **local level** (regional units NUTS3) and analyzed by education grade and level (General, Technical/Vocational), fields of responsibility (Public, Private) and type of school unit (Day, Evening school). Part B & C of the report is due to be published in December 2016. After the publication, KANEP/GSEE, an independent research body, relying exclusively on its own resources, will have fully completed the presentation/analysis of the Greek education system (Primary, Secondary and Tertiary education) in the context of the international, European and national databases over a 15 years period (2001-2015) thus, contributing to an evident based national strategic plan for upgrading the quality of the education system and effectively dealing with its flaws, which, over the years, have exacerbated educational and social inequalities in the country.

Chapter 1 of the **Annual Education Report 2015** (Part A) of KANEP/GSEE provides an overview of all key economic and non-economic indicators available for the Greek Primary and Secondary Education. In particular, **Section 1** of the Chapter summarizes all key non-economic indicators available for Preschool education (ISCED 0), Primary Education (ISCED 1), Lower Secondary education (ISCED 2) and Upper Secondary education (ISCED 3), divided into General (ISCED 3A) and Technical/Vocational education (ISCED 3B), presenting time-series of the indices available for the period 2002-2013 and an analysis of annual indicators in three-year Tables (2011-2013). Data on Post-secondary non-tertiary education (ISCED 4) are published for the first time. **Section 2** of the Chapter provides fully all key economic indicators available (public and private expenditure) for the Greek Primary and Secondary education over the period 2005-2013 according to the published State Financial Statements. All data on indicators, which appear in Chapter 1, have been taken from ELSTAT and the General Accounting Office as made publicly available annually on its website platform and developed in full time series per variable.

Chapters 2 and **3** of the report outline the key indicators of the member states of EU28 and their rate of change towards the **European benchmarks** (EU-2020). The approach to key indicators at the European level is split into investment-inputs indices in education and educational outcomes–outputs indices, insofar as data availability allows it. In particular, the objective of this Chapter is, therefore, to examine the importance of inputs in education, such as **public expenditure**, investments in physical infrastructures and human resources as well as the approach to the educational outcomes of the EU28 member states with a view to highlighting important elements such as the progress sought, the convergence and cohesion of education systems in the EU member states towards meeting the European targets of Education and Training 2020. Data on the indicators that appear in Chapters 2 and 3 have been taken from Eurostat, the EURYDICE network and

OECD (Education at a glance 2014 & 2015, PISA 2006-2009-2012) as well as from the progress reports on the implementation of the "Education and Training 2020" work programme. The reference period varies according to data availability by education level (Preschool education ISCED 0, Primary education ISCED 1, Lower Secondary education ISCED 2, Upper Secondary education ISCED 3, distinguished in General ISCED 3A and Technical/Vocational ISCED 3B where available) with time series ranging from 2002 to 2014. Upon the presentation of the key data, detailed reference is made to Greece's position, status and progress as compared to the rest of the EU28 member states.

Specifically, **Chapter 2** is structured on the following sections: section 1 concerns the development over time of the student population in the European Union as a whole and by education level/grade (ISCED), section 2 concerns the development over time of the teaching staff in the European Union as a whole and by education level/grade (ISCED) and section 3 concerns the development over time of public expenditure on education in the European Union and by education level/grade (ISCED).

Finally, **Chapter 3** of the study provides a description and an analysis of the input indices in education (comparable indicators on funding, physical infrastructures and human resources in education, time spent on learning both inside and outside the regular curriculum), while the indices of outputs/educational outcomes (**early leaving from education/ training**, **students' performance** in Mathematics (2012), reading (2012 & 2009) and Science (2012 & 2006), and the progress made in achieving the additional EU-2020 benchmarks, set as key quality indicators in the European education systems, with a view to (a) assessing the relevance of inputs (investments) to outputs (educational outcomes) of the EU28 and OECD member states, (b) the overall EU progress towards convergence and the qualitative upgrading of education systems and (c) the position and status of the Greek education system (primary and secondary education) in the context of the European and international reference framework.

The identity of the Greek compulsory education in the context of the european reference framework

The Annual Education Report 2010 of KANEP/GSEE on Primary and Secondary education, had adopted an approach by extending the top positions between the member states from three (top3) to eight (top8) for each one of the 9 benchmarks available. Thus it was established a structure of 72 discrete positions between the EU28 member states. The present study also adopts a similar approach, however, with two new additions: (a) the number of discrete positions between the member states fell from eight to six, thus, creating a new structure of **48** discrete positions, while (b) the indices/sub-indices chosen as key indicators are those, which directly relate to the educational outcomes/outputs of compulsory education (Primary and Lower Secondary education) whilst integrating the qualitative characteristic of indexing direction, such as the reduction in social and educational inequalities, or those that highlight the issue of equity in the distribution of resources. At the level of a strategic planning, the reduction in observed inequalities upgrades significantly the quality of education systems and fulfills the core constitutional imperative to guarantee education as basic -and guaranteed by the state - public good and individual right of each citizen. The following table sets out the six top positions (top6) for eight indices and sub-indices for the quality of educational outcomes. In all the 48 discrete positions, **18** out of EU28 countries are shown (64.3%). Among them, **Estonia** ranks first with 7 benchmarks, **Finland** ranks second with 6 benchmarks, **Poland** third with 6 benchmarks as well, since Finland ranks first in (top-6) across several indicators, the **Netherlands** ranks 4th with 4 benchmarks while **Spain** occupies the 5th position with 3 benchmarks. **Ireland**, **Denmark**, **Lithuania**, **Latvia**, **Germany**, **Belgium** and **Luxembourg** have 2 benchmarks each. Finally, **Sweden**, the **Czech** Republic, **Slovakia**, **Slovenia**, **Croatia**, **Portugal**, **Malta** and **Cyprus** have one benchmark each. The following Table indicates **Greece's** ranking across every output indicator and sub-pillar among the EU28 member states.

Table 1: **Ranking of EU28 member states in the first 6 places (top6) as regards the values and direction of education output indicators**

	Education output indicators	Ranking of the 6 first EU-28 Member states per indicator						Ranking of GREECE in EU28 based on the OUTPUT indicators
		1st country position	2nd country position	3rd country position	4th country position	5th country position	6th country position	
1	LOW early leaving from education/training rates	CROATIA	SLOVAKIA	POLAND	CZECH REP	LITHUAN	LUXEMB	13th
2	LOW rates of unemployed and "inactive" young people aged 18-24 years old early left from education/training	MALTA	LUXEMB	CYPRUS	NETHERLAN	ESTONIA	PORTUGAL	20th
3	HIGH performance in MATHEMATICS (PISA 2012)	NETHERLAN	ESTONIA	FINLAND	POLAND	BELGIUM	GERMANY	24th
4	SMALL variation of LOW performance in MATHEMATICS that can be explained as a whole by the ESCS indicator for school and students (PISA 2012)	FINLAND	SWEDEN	ESTONIA	SPAIN	POLAND	DENMARK	13th
5	HIGH performance in READING (PISA 2012)	FINLAND	IRELAND	POLAND	ESTONIA	NETHERLAN	BELGIUM	23rd
6	SMALL variation of LOW performance in READING that can be explained as a whole by the ESCS indicator for schools and students (PISA 2009)	FINLAND	LATVIA	ESTONIA	DENMARK	SPAIN	ΛΙΘΟΥΑΝ	14th
7	HIGH performance in SCIENCE (PISA 2012)	FINLAND	ESTONIA	POLAND	GERMANY	NETHERLAN	IRELAND	24th
8	SMALL variation of LOW performance in SCIENCE that can be explained as a whole by the ESCS indicator for schools and students (2006)	FINLAND	POLAND	SPAIN	SLOVENIA	ESTONIA	LATVIA	18th

Source: **Eurostat – UOE** *Data elaboration:* **KANEP/GSEE**

In 2014, as regards **Greece's** ranking among EU28 member states by output indices/sub-indices, it should be noted that the country recorded the highest ranking in 2013 on the index for reducing "early leaving rates from education/training" below 10%, the country, with a **9.0%** rate occupies the **13th** highest position . In the same year, **Greece** occupies (with **63.3%**) the **20th** lowest position (since the direction of quality indicator is reversed) among the EU28 countries on the sub-index for reducing the "rates of unemployed and "inactive" young people aged 18-24 years old who have dropped out from education and training".

In 2012, **Greece** (with **20.6%**) occupies the **13th** lowest position (since the direction of the quality indicator is reversed) among the 26 EU member states for which relevant data are available on the sub-index "Small variation of poor mathematics performance between the country's schools that can be explained, as a whole, by the ESCS indicator for students and schools". Simply put, this specific rate means that **65.0%** of the observed variations in students' mathematics performance between Greek schools can be explained as a whole by the socioeconomic and cultural background (status) of students and schools. The rate for **Finland** occupying the **1st** lowest position on this sub-index is **1.8%**, while **Slovenia**, which occupies the **1st** higher ranking on the sub-index, stands at **45.3%**. In the same year, with regard to the indicator on the country's average mathematics performance, **Greece** ranks **24th** with **473** score points.

In addition, in 2009, **Greece** (with **21.8%**), occupies the **14th** lowest position (since the direction of the quality indicator is reversed) among the 24 EU Member states, for which relevant data are available on the sub-index: "Small variations in the poor performance of Greek schools in reading that can be explained as a whole by the ESCS indicator for schools and students". The rate for **Finland** occupying the **1st** lowest position on this sub-pillar is **1.8%**, while for **Luxembourg** that occupies the **1st** highest position on the sub-index, the rate stands at **50.5%**. In the same year (2009), as regards the indicator of the country's average performance in reading, **Greece** ranks **17th** with **483** score points.

Finally, in 2006, **Greece** (with **55.1%**) occupies the **18th** lowest position (since the direction in the quality indicator is reversed) among the 25 EU member states for which relevant data are available on the sub-index: "Small variations in poor performance between Greek schools in Science can be explained as a whole by the ESC indicator for schools and students". **Finland** stands at a **1.3%** occupying the **1st** lowest position on this specific sub-index while **Germany** stands at **49.4%** occupying the **1st** highest position on the sub-index. In the same year (2006), as regards the indicator of the country's average performance in Science, **Greece** ranks **23rd** with **473** scores points.

The following Table depicts **34** input indices/ sub-indices (mainly for investing in resources and time in education), as well as the value of each index in the 5 selected EU28 Member states that are top performers in educational outcomes and their average value. **Greece's** performance shall be compared with this average value while this comparison constitutes a measure for depicting the country's position and status within the European reference framework on compulsory education (Primary and Lower Secondary education). It

should be noted that educational policy is a national matter while the Commission's recommendations should specify quality targets along a common path towards an upgrade of the european education systems, supported by co-financed programs at European, national and regional level and concern all types of inputs (infrastructure, educational resources, human resource development as well as development of ICT, foreign languages, innovation, research & development and dissemination of educational best practices).

Table 2: **Average values for INPUT indices and sub-indices in education in the 5 member states that rank among the best in terms of educational outcomes and comparison of their average values with GREECE'S relevant value**

	Education Input indicators	**Year**	**Ranking of EU28 member states according to their incidence rates in the first 6 counties in the distribution of OUTPUT indices and values per INPUT indicator**						**GREECE'S relevant value**
			ESTHONIA (7 times)	**FINLAND** (6 times)	**POLAND** (6 times)	**NETHERLAND** (4 times)	**SPAIN** (3 times)	**AVERAGE VALUE of the 5 countries**	
1	Total **public expenditure on education** as a share of GDP	**2013**	**6,47%**	**6,40%**	**5,26%**	**5,54%**	**4,07%**	**5,55%**	**4,49%** (3,20%)
2	Proportion of students in **disadvantage** schools	**2012**	**19,0%**	**16,0%**	**27,5%**	**23,4%**	**29,5%**	**19,9%**	**25,3%**
3	Proportion of students in schools whose principals reported that the shortage/ inadequacies in school **physical infrastructures** do not hinder "at all" or have a "minor" impact on learning process	**2012**	**69,9%**	**58,7%**	**78,6%**	**65,0%**	**68,5%**	**68,14%**	**53,1%**
4	Proportion of students in schools whose principle reported that the shortage/inadequacies in **heating/cooling and lighting systems** do not "at all" or have a "minor" impact on learning process	**2012**	**83,3%**	**60,7%**	**89,1%**	**55,5%**	**74,2%**	**72,56%**	**78,6%**
5	Proportion of students in schools whose principal reported that the shortage/inadequacies in **instructional spaces** (classrooms, etc.) do not hinder "at all" or have a "minor" impact on learning process	**2012**	**66,6%**	**58,2%**	**91,4%**	**56,0%**	**69,8%**	**68,40%**	**65,2%**
6	Quality indicator for **physical infrastructures** of schools	**2012**	**0,1**	**-0,3**	**0,5**	**-0,3**	**0,0**	**0,0**	**-0,2**
7	Proportion of students in schools whose principal reported that the shortage/inadequacies of **science laboratory equipment** do not "at all" or have a "minor" impact on learning process	**2012**	**64,5%**	**66,0%**	**86,6%**	**84,1%**	**72,8%**	**74,80%**	**46,0%**
8	Proportion of students in schools whose principal reported that the shortage/inadequacies of **instructional materials** (e.g. text-books) do not hinder "at all" or have a "minor" impact on learning process	**2012**	**67,7%**	**51,0%**	**73,1%**	**67,0%**	**57,8%**	**63,32%**	**52,6%**
9	Proportion of students in schools whose principal reported that the shortage/inadequacies of **computers for instruction** do not hinder "at all" or have a "minor" impact on learning process	**2012**	**96,2%**	**76,5%**	**92,5%**	**70,8%**	**69,6%**	**81,12%**	**79,1%**
10	Proportion of students in schools whose principal reported that the lack/ inadequacy of **Internet connectivity** do not hinder "at all" or have a "minor" impact on learning process	**2012**	**63,0%**	**57,0%**	**74,5%**	**53,7%**	**60,6%**	**61,76%**	**44,7%**
11	Proportion of students in schools whose principal reported that the shortage/ inadequacies of **computer software for instruction** do not hinder "at all" or have a "minor" impact on learning process	**2012**	**60,1%**	**80,7%**	**88,3%**	**90,9%**	**90,8%**	**82,16%**	**70,1%**
12	Proportion off students in schools whose principal reported that the shortage/inadequacies of **library materials** no not hinder "at all" or have a "minor" impact on learning process	**2012**	**53,3%**	**73,6%**	**71,4%**	**81,6%**	**68,7%**	**69,72%**	**71,0%**
13	**Equity in allocation of educational resources** (refers to the difference in the index of quality of schools' educational resources between socio-economically advantaged and disadvantaged schools)	**2012**	**0,11**	**0,36**	**0,43**	**0,12**	**0,22**	**0,25**	**0,45**
14	**Computers for educational purposes per student in the school**	**2012**	**0,69**	**0,46**	0,36	**0,68**	**0,67**	**0,57**	**0,24**
15	Percentage distribution of students in the category "**less than 10%**" of the work, in all subjects combined, expected from 15-year-olds in the national modal grade requires **Internet access**	**2012**	**25,8%**	**47,1%**	**53,3%**	**48,3%**	**29,6%**	**40,8%**	**45,0%**
16	*PRIMARY education* **Pupil/student** (in full time attendance equivalent) **teacher ratio** (in full time employment equivalent) 2nd approach of KANEP/GSEE	**2012**	**13,1**	**13,6**	**11,0**	**15,8**	**13,4**	**13,4**	**13,1**
17	*Lower SECONDARY education*: **Pupil/student** (in full time attendance equivalent) **teacher ratio** (in full time employment equivalent) 2nd approach of KANEP/GSEE	**2013**	**9,9**	**8,9**	**9,9**	**15,6**	**10,6**	**11,0**	**9,2**
18	*Upper SECONDARY* education: **Pupil/student** (in full time attendance equivalent) **teacher ratio** (in full time employment equivalent) 2nd approach of KANEP/GSEE	**2012**	**14,1**	**16,1**	**11,1**	**18,6**	**9,9**	**14,0**	**10,3**
19	Average percentage distribution of **certified teachers** (ISCED 2-3) based on the school principal's report	**2012**	**94,9%**	**91,5%**	**99,3%**	**79,7%**	**100,0%**	**93,1%**	**81,8%**

	Education Input indicators	Year	Ranking of EU28 member states according to their incidence rates in the first 6 counties in the distribution of OUTPUT indices and values per INPUT indicator						GREECE'S relevant value
			ESTHONIA (7 times)	FINLAND (6 times)	POLAND (6 times)	NETHERLAND (4 times)	SPAIN (3 times)	AVERAGE VALUE of the 5 countries	
20	Average percentage distribution of teachers (ISCED 2-3) with a **university-level degree** based on the school principal's report	2012	-	91,5%	93,2%	32,0%	94,5%	77,8%	93,5%
21	Percentage of students in schools whose principals reported that the lack of **qualified mathematics teachers** hindered student learning "to some extent" or "a lot"	2012	17,0%	4,3%	0,0%	45,3%	2,2%	13,7%	5,3%
22	Percentage of students in schools whose principals reported that the lack of **qualified language-of-instruction teachers** hindered student learning "to some extent" or "a lot"	2012	6,3%	1,3%	0,05	22,8%	1,3%	7,3%	6,8%
23	Percentage of students in schools whose principals reported that the lack of **qualified science teachers** hindered student learning "to some extent" or "a lot"	2012	17,9%	3,9%	0,7%	32,0%	2,2%	11,3%	9,3%
24	**Equity in allocation of human resources** (refers to the difference in the index of adequacy in qualified teachers between socio-economically advantaged and disadvantaged schools)	2012	0,19	0,11	0,02	0,05	0,17	0,11	0,20
25	*PRIMARY education*: **Class size** (equivalent of full-time school attendance with respect to the number of classes)	2012	17,0	19,4	18,4	22,6	21,4	19,8	17,3
26	*Lower SECONDARY education*: **Class size** (equivalent of full-time school attendance with respect to the number of classes)	2012	15,7	20,3	22,4	-	24,5	20,7	21,9
27	**Total annual compulsory teaching hours** in General education (Primary and Lower Secondary education ISCED 1-2) in teaching hours	2014	-	6.327	6.237	8.640	8.969	7.543	7.055
28	*Lower SECONDARY education*: Total compulsory teaching hours in three basic subjects (**Language-of-instruction**, **Mathematics** and **Science**) in minutes per teaching week	2012	617	516	587	504	598	564	609
29	Ratio of 15-year-old students attending extra-curricular classes for **Language courses up to 4 hours per week**	2012	20,3%	41,4%	32,1%	17,6%	15,0%	25,3%	31,4%
30	Ratio of 15-year-old students attending extra-curricular classes in **Mathematics up to 4 hours per week**	2012	27,2%	37,8%	44,1%	24,3%	30,5%	32,8%	39,8%
31	Ratio of 15-year-old students attending extra-curricular classes in **Science up to 4 hours per week**	2012	24,9%	41,4%	33,2%	16,0%	19,2%	26,9%	35,9%
32	Total **out-of-school time** (in minutes per week) in order to prepare homework or other study set by teachers, either with somebody overlooking and providing help if necessary, at school or elsewhere	2012	739,4	255,5	805,8	597,2	771,4	633,9	874,2
33	Ratio of 15-year-old students whose school offers Mathematics lessons **in addition** to those offered during regular school hours	2012	21,8%	41,7%	6,6%	58,9%	57,3%	37,3%	38,4%
34	**Index of creative extracurricular activities at school** (philharmonic/ orchestra/ choir, theatrical or musical plays ,art groups, cultural activities) valued with 0-5 scores	2012	2,1	1,6	2,5	1,9	1,0	1,8	1,4

Source: **Eurostat – UOE** *Data elaboration:* **KANEP/GSEE**

The comparison of the average values of the top-5 (in education outputs) member states as regards the inputs indices with the average value of Greece leads to the following conclusions:

- The Greek education system is **underfunded**. On the basis of the state **financial statements** submitted to the Greek Parliament, Eurostat data have not been verified until now and subsequently its assessment that in 2013 **public expenditure on education** amounted to **4.5%** of the GDP.
  According to the approach of KANEP/GSEE, which does not measure the budgeted expenditure, but the actually paid one, as published by the General Accounting Office, **public expenditure on education** in Greece in 2013 amounted to **3,20%** of GDP (182.438 M€). The EURYCIDE network agrees with this assessment in its annual reports on public expenditure in education. In its reports of 2013, 2014 and 2015, the assessment of the level of public expenditure in education in Greece confirmed the relevant publicised by KANEP/GSEE. Obviously, the difference of **1.3%** of GDP (2.37 M€) is extremely high, it has not been substantiated and it's not acceptable.
- There is a problem with the efficiency, maintenance and the quality of **physical infrastructure** in education. At the same time, the ongoing reduction of the

budget on Public Investments Program of the Ministry of Education postpones the problem to a later date, two decades later. The problems of infrastructure in **Preschool education** have been made more acute given that the measure of Preschool settings being housed in the same Primary school (Dimotiko) buildings, as an emergency solution, in 2007, has not effectively met the needs of infants (5 years of age), as a whole. Nevertheless, the prospect of legislating to enforce compulsory school attendance in Preschool education of infants aged from 4 years, which is one of the obligations undertaken by the country within the framework of EU 2020 benchmarks, will further exacerbate the problem.

Moreover, problems in physical infrastructure (school buildings) will arise from the extension of the **All-day Primary School** (Oloemero Dimotiko) to the whole of the country's multi-grade Primary schools, since, by their own design and by choice, school buildings in Greece do not offer, in addition to classrooms, other facilities able to provide services to parents, students and education personnel. Longer operating hours in primary schools require that, the needs in school meals, the additional needs in administration and communication, restaurants and canteens and storage of materials are effectively met. Modernizing educational activities in primary schools (Dimotiko) requires the best possible use of laboratory infrastructure (computers, cultural activities, science and technology laboratories, libraries for educational use, etc.) as well as multidisciplinary classroom and laboratory educational activities.

The characteristics of the problems associated with the quality of school physical infrastructure in **Lower secondary education** (Gymnasio) are reflected in the relevant questionnaires answered by school principals and published by PISA Programme every 2 years, namely that **21.0%** of 15-year-old students attend schools whereby the shortage/ inadequacies in heating/cooling and lighting systems can "enormously" or "severely" hinder the learning process itself at their school. This percentage rises to **34.8%** of the students when shortcomings or inadequacies in instructional spaces are reported (classrooms, corridors, staircases, insulation issues, cleaning up, etc.) to the extent that they affect and impede normality in the learning process at school. The fact that similar issues have been raised by school principals in **Finland**, for example, simply demonstrates the special nature of and the considerable amount of wear and tear on educational infrastructure as well as the need for all countries to invest, over time, more in the construction, maintenance and modernization of physical infrastructure in education.

- Moreover, the learning process is put under strain when referring to the shortcomings or the inadequacies in the **educational resources** available at schools and particularly when school principals report that the learning process is affected and hindered due to shortages in: computers for instruction at **21.1%** of students, computer software for instruction at **29.9%** of students, Internet connectivity at **55.3%** of students and the shortage or inadequacies of **instructional materials** at **47.4%** of 15-year-old students. Furthermore, the learning process is additionally hindered by shortcomings or inadequacies in science laboratory equipment (**54.0%** of students) and library materials (**29.0%** of students). This expenditure will be paid either by the Public Investment Programme, or by the Regular Budget of the Ministry of Education. Combating waste of public funds must be the main goal in the attempt to rationalize State spending. However, when the function of education itself and its effectiveness are being questioned by the specific attempt the qualitative upgrading of education is impossible to be achieved. Similar problems were raised also in the last year's Annual Education Report of KANEP/GSEE concerning infrastructure, maintenance and educational resources of **Tertiary education**.

  Finally, Greece occupies the highest position on the indicators for **uneven distribution of educational resources** among advantaged (in socioeconomic and cultural terms) and disadvantaged schools. **25.3%** of 15-year-old students, corresponding to 1 to 4 students, attend disadvantaged schools in the country (mountainous areas, remote, island and disadvantaged areas even in the Attica basin), while all the top-5 countries in the Table have recorded a similar problem in equity in allocation of educational resources among schools, however, relatively lower (1 to 5 students). The lowest percentage in this group is recorded in **Finland**, namely, **16.0%**.

- As far as the **student - per teacher ratio** is concerned, there has been great debate over the last years, however, not an in-depth debate. Important parameters of educational planning (island areas, remote and inaccessible areas, disadvantaged and under- represented regions and groups) did not carry much weight on our political debate. However, as regards the technical part of measurement, an important error has been made: in fact, this educational indicator tries to depict the ratio of students to the teacher (who is physically present in the classroom) and not the one absent from class, or posted elsewhere, and in any case, the teacher who is not involved in the education process but is replaced. In this case, this indicator refers to the replacement teacher. The 2nd approach we propose in this report presented in the Table above, has corrected the error, thus, it became immediately evident that the country isn't significantly lagging behind but corresponds to the average value rates of the top-5 Member states. The topography of Greece, with 1/3 of the country consisting of mountains and islands with acute problems of aging

population and under-representation of children and youth population affects the student to teacher ratio and is necessarily putting downward pressure on this indicator - and the student per class indicator as well.

- The indicators on the use of **Information and Communication Technology in education** show poor performance. These indicators should have been set, at least one decade ago, as the main objectives of the co-financed programme "Information Society" in education, giving priority to disadvantaged and underprivilaged schools, one-post schools ("monograde"), "less than 6 post" Primary schools and to Technical and Vocational education. The development of modern technologies in education is an additional way to turn the educational disadvantage into an advantage and develop social awareness for valuable educational grades and units.
- **45.3%** of 15-year-old students in the **Netherlands**, following the report by their school's principal , consider that there is a lack of **qualified teacher** in Mathematics, **22.8%** of the students report a lack of qualified Language-of-instruction teacher and **32.0%** of qualified teachers in Science. In **Greece** the respective percentages are smaller: **5.3%**, **6.8%** και **9.3%** respectively, referring mainly to early staffing of replacement teachers and teachers assigned to other schools at the same time in order to supplement teaching hours.
- As regards **investing time in learning** it is interesting to see that in **Greece** the total of compulsory teaching hours for the 3 major -in terms of time- learning subject (Language, Mathematics and Science) amounts to **609** minutes per teaching week while the respective out-of-school time (in minutes per week), with a view to supporting mainly these subject matters after school is **43.5%** higher than the compulsory teaching time in school (**874** minutes).
- To conclude, the indicator for **creative extracurricular educational activities at school** is, in general, an undervalued domain in the education systems throughout the world, even in countries that give special consideration to creativity in art activities, such as **Spain** (indicator value **1.0** in 5.0) and Greece (indicator value **1.4** in 5,0), as compared to the other 4 Member states in the overall group of top-5 of the table above.

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