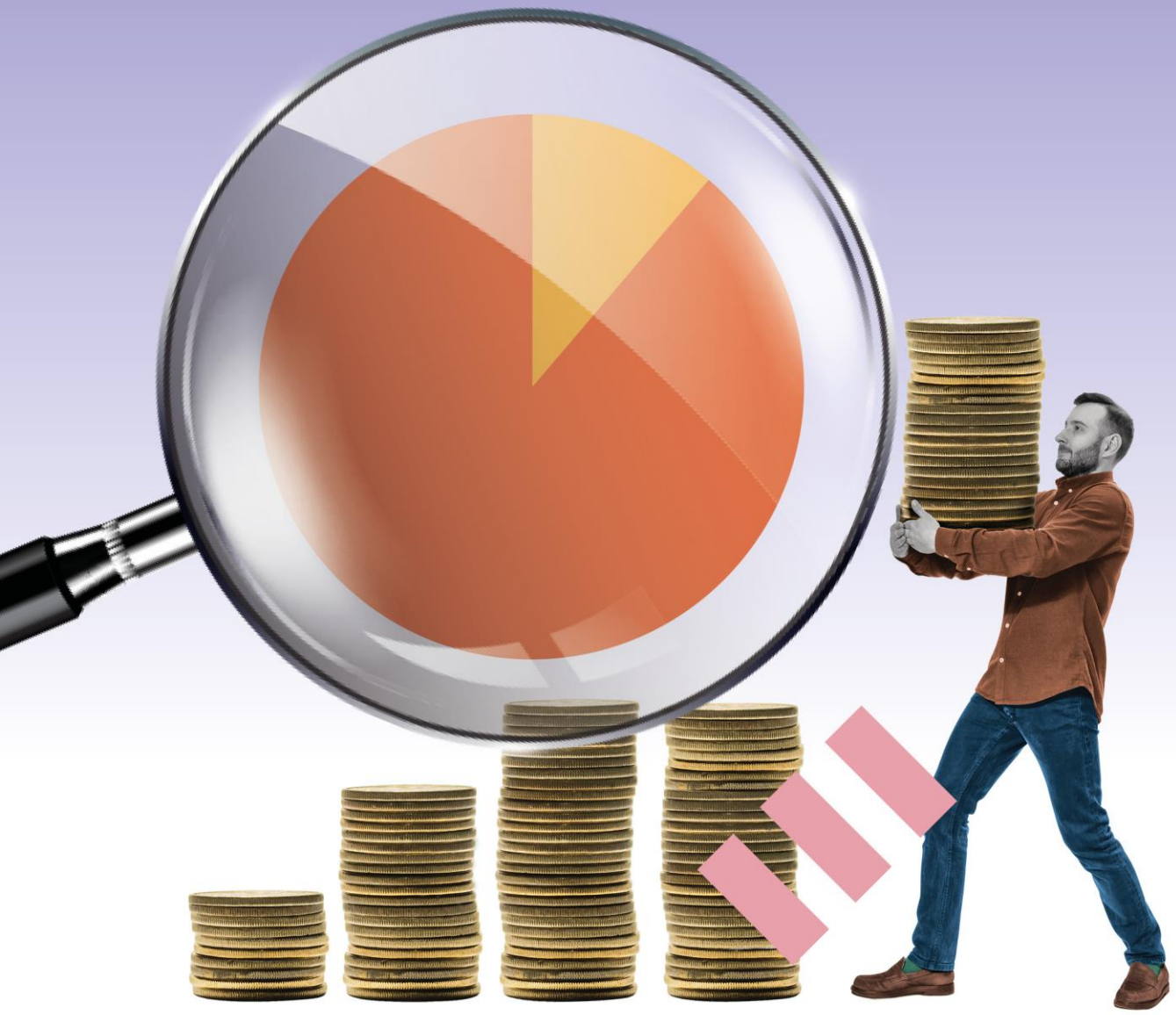
European Commission

Investing in education 2024



European Education Area

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Directorate-General for Education, Youth, Sport and Culture
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Foreword

Investment in education has not recovered since the Covid-19 pandemic. According to the latest data from 2022, presented in this report, the average share of public expenditure invested in education across the EU has declined steeply compared to the pre-pandemic period.

Addressing the current range of economic and social challenges facing the EU - including the digital and green transitions and the geopolitical issues - requires major public investment across various sectors while at the same time keeping public finances under control. This leads to increasing competition for public funding among the various policy areas, with the potential risk of lower funding for education in future years. The European Commission's European Semester Spring Package 2024 highlights the importance of human capital in enhancing productivity and growth. The Commission has issued recommendations for 18 EU Member States, that emphasise the need to boost basic skills, to strengthen the teaching profession and to improve the performance and fairness of education systems.

Given the EU's reliance on highly skilled young people to bolster its future innovation potential, competitiveness and social cohesion, maintaining adequate investment in education is imperative. This report aims to draw policymakers' attention to the importance of education, as they prepare annual national budgets. Making an effective case for investing in education also entails improving the overall quality of public spending in this sector. To this end, the Commission is collaborating with EU countries through the Learning Lab on Investing in Quality Education and Training to better understand "what works". Innovative research funded by the EU research and innovation framework programme Horizon Europe is exploring the effectiveness, efficiency and equity of education systems, providing valuable insights for policymakers to help refine their investment strategies.

As part of the EU's response to the pandemic, the Recovery and Resilience Facility has made available €75 billion for investment in education and skills for the period 2021-26. The full impact of these investments will be evaluated in future editions of this report. These investments are at the same time expected to support major reforms in several Member States. They are complemented by substantial contributions from EU cohesion policy funding.

While the design and governance of education systems remain a national competence, the European Commission is committed to supporting EU countries in their reform and investment efforts. By working together with the Member States under the European Education Area framework, we intend to make the most of all funding opportunities in the coming years. Only through this collective effort can we ensure that the resources invested in education create new opportunities and maximise learning outcomes and inclusion for all young Europeans.

Iliana Ivanova
European Commissioner for Innovation, Research, Culture, Education and Youth

Executive summary

The most recent data (2022) confirms that investment in education seems to face a stronger competition from other public functions after the pandemic and consequently gets a lower share of total public expenditure than in the 2010s. In 2022, the EU-average public expenditure on education reached 4.7% of GDP and 9.5% of total public expenditure. Public expenditure on education seems to have broadly stabilised in the EU, both as a share of GDP and of total public expenditure. The former spiked in 2020 due to a strong GDP contraction, then it reverted to its pre-pandemic trend. The latter had declined from 10.1% in 2019 to 9.4% in 2020 during the Covid-induced recession and remained roughly constant in 2021 and 2022, albeit at historically low levels. Overall, investment in education experienced one of the largest drops as a share of total public expenditure between 2019 and 2022 among the various public policy sectors (-0.6 percentage points). Although part of the social and economic measures taken in 2020-2021 to respond to the Covid-19 pandemic were discontinued or gradually phased out in 2022, new measures were introduced to face the energy crisis and support Ukraine in the wake of Russia's invasion.

The Recovery and Resilience Facility, Cohesion Policy funding and the new EU economic governance framework offer opportunities for quality investment in education. Member States are using EU funds to support comprehensive curricular reforms, develop students' digital competences, reinforce education in science, technology, engineering and mathematics, enhance educational infrastructure and strengthen teachers' professional development. The reform of the EU economic governance framework provides for a more gradual fiscal adjustment for a Member State in case of specific growth-enhancing reform and investment commitments. Moreover, the European Commission is supporting Member States through the Learning Lab on Investing in Quality Education and Training, by providing knowledge and resources to identify how to make education systems more effective and efficient.

See also the online annex with the most comprehensive review about the use of counterfactual methods in educational research in Europe so far (bibliographical list of the 984 studies with their details – See Part 2 for more information)

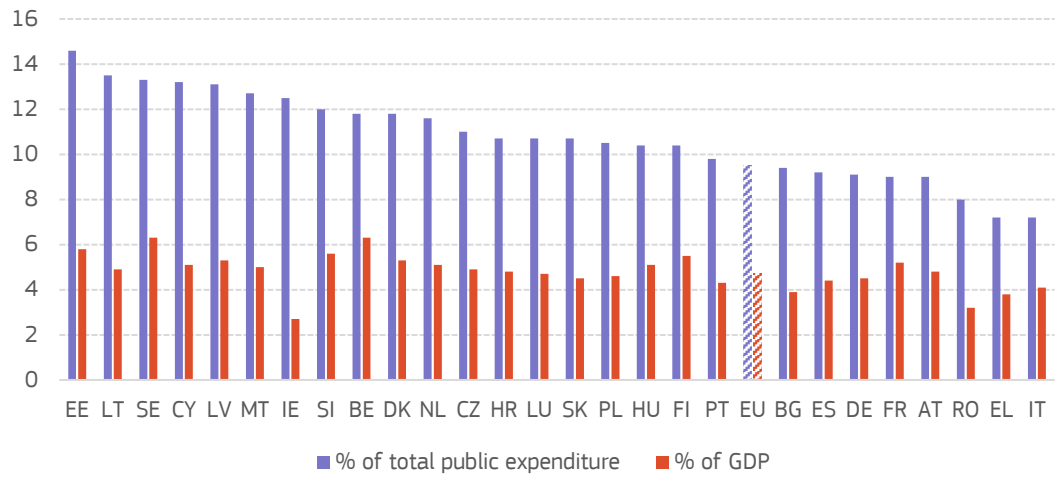
Part 1

Investment in education faces increased competition for public funding

The first part of this report analyses the most recent data[1] on investment in education (2022),[2] together with long-term trends. 2022 marked the exit from the Covid-19-related measures for EU education systems. No EU country experienced full or partial physical school closures anymore (UNESCO, 2022).[3] At the same time, both research at national level (De Witte and François, 2023; Di Pietro, 2023; Maldonado et al., 2024) and the results from the OECD Programme for International Student Assessment (PISA) 2022 (OECD, 2023; European Commission, 2024e) have shown that learning outcomes remained below pre-pandemic levels in most countries.

Public expenditure on education in the EU amounted to 9.5% of total public expenditure and 4.7% of GDP in 2022. At country level, the former varies from 14.6% in Estonia to 7.2% in Italy; the latter ranges from 6.3% in Belgium and Sweden to 2.7% in Ireland (Figure 1).[4] The correlation between these two indicators is positive, but not perfect.[5] This depends on the different size of total public expenditure in each economy,[6] reflecting the variety of long-term approaches to welfare in EU countries. In 2022 it was still too early for any visible impact of the Recovery and Resilience Facility (RRF) or the 2021-2027 EU Cohesion funds on actual investment in education. The RRF has allocated around €75 billion between 2021 and 2026 to reforms and investment in education and skills in Member States (European Commission, 2023b). The EU Cohesion Policy has allocated €33 billion to education between 2021 and 2027 (European Commission, 2024e).[7]

Figure 1. Public expenditure on education (2022)



Notes: Provisional data for BE, DE, ES, FR, PT. See footnote 4 for IE.
Source: Eurostat COFOG data. Online data code: [gov_10a_exp].

1 Eurostat releases data on government expenditure by function (COFOG) for year t in late February/early March of year t+2. The most recent data available in 2024 refers to 2022.

2 This report will use 'investment in education' interchangeably with 'public expenditure on education'.

3 Except for the first week of January in Poland (UNESCO, 2022).

4 The low value of this indicator for Ireland (2.7%) is explained by the specific structure of the Irish economy. In most countries, GDP and Gross National Product (GNP) are very close in value, but in Ireland GDP is larger than GNP because of negative net factor income: income outflows are much larger than income inflows due to the presence of many foreign-owned multinational firms, which pay their profits back to their owners abroad (Central Statistics Office, 2024). Consequently, public expenditure on education as a share of GNP would be higher than as a share of GDP.

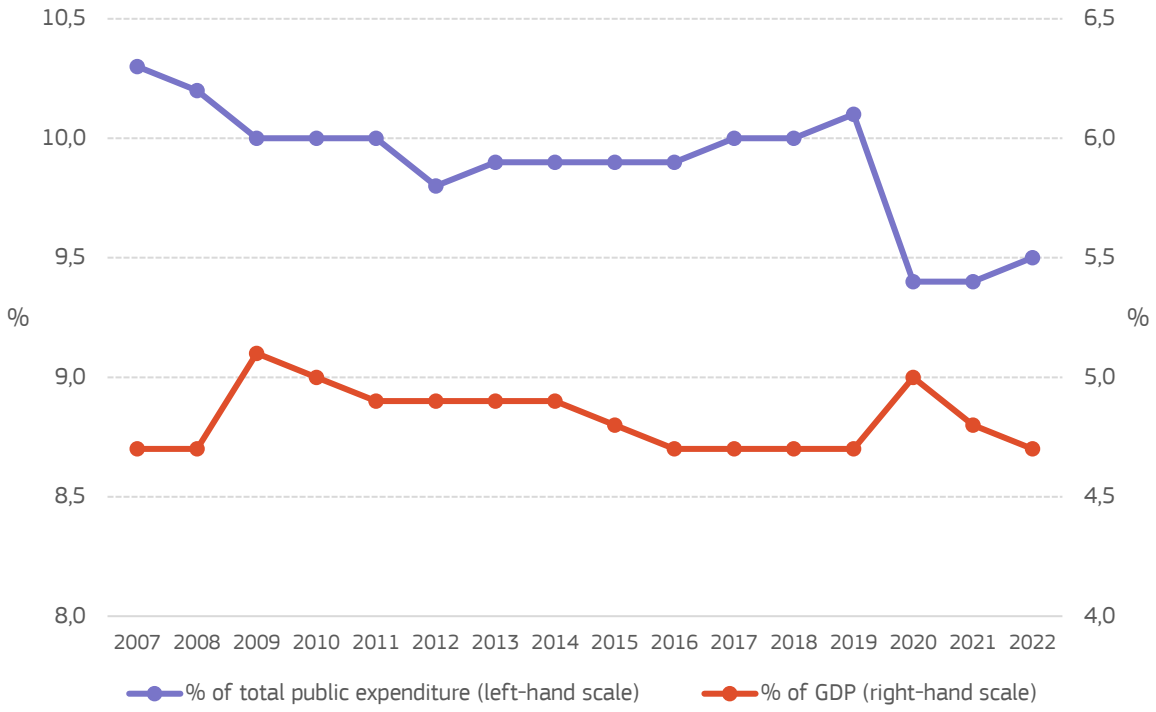
5 The Pearson correlation coefficient r equals 0.53.

6 The mathematical relationship between the two indicators is expressed as:
(expenditure on education/GDP) = (expenditure on education/total expenditure) * (total expenditure/GDP).

7 Member States are using EU funds to support comprehensive curricular reforms, develop students' digital competences, reinforce education in science, technology, engineering and mathematics, enhance educational infrastructure and strengthen teachers' professional development (European Commission, 2024e).

Public expenditure on education seems to have broadly stabilised in the EU, both as a share of total public expenditure and of GDP. The former had declined from 10.1% in 2019 to 9.4% in 2020 during the Covid-induced recession and remained roughly constant in 2021 and 2022, albeit at historically low levels. The latter spiked in 2020 due to a strong GDP contraction (European Commission, 2022), then it reverted to its pre-pandemic trend (Figure 2).

Figure 2. Public expenditure on education as a share of total public expenditure and of GDP in the EU-27 (2007-2022)



Source: Eurostat COFOG data. Online data code: [gov_10a_exp].

Education represents a smaller share of total public expenditure than before the Covid-19 pandemic. Figure 3 explains how the structure of total public expenditure changed between 2019 and 2022. 'Economic affairs' jumped by 2.3 percentage points. The government measures to mitigate the economic impact of the Covid-19 pandemic (e.g. subsidies to support the various productive sectors affected by Covid-related restrictions) caused the strong increases observed in 2020 and 2021. In 2022, the financial impact of those measures was significantly reduced, but new measures to mitigate the impact of rising energy prices on productive sectors partly compensated that decrease (European Commission, 2024a). Among other larger expenditure functions,[8] only 'Health' increased its share, because of the response to new public health needs during and after the pandemic (European Commission, 2024b). Thus, most other expenditure functions saw their share declining, and education experienced one of the largest drops (-0.6 percentage points).

[8] The increase in 'Housing and community amenities' from 1.2% of total public expenditure in 2019 to 2.0% in 2022 mostly depends on investment grants to households classified as payable tax credits in Italy (European Commission, 2024c).

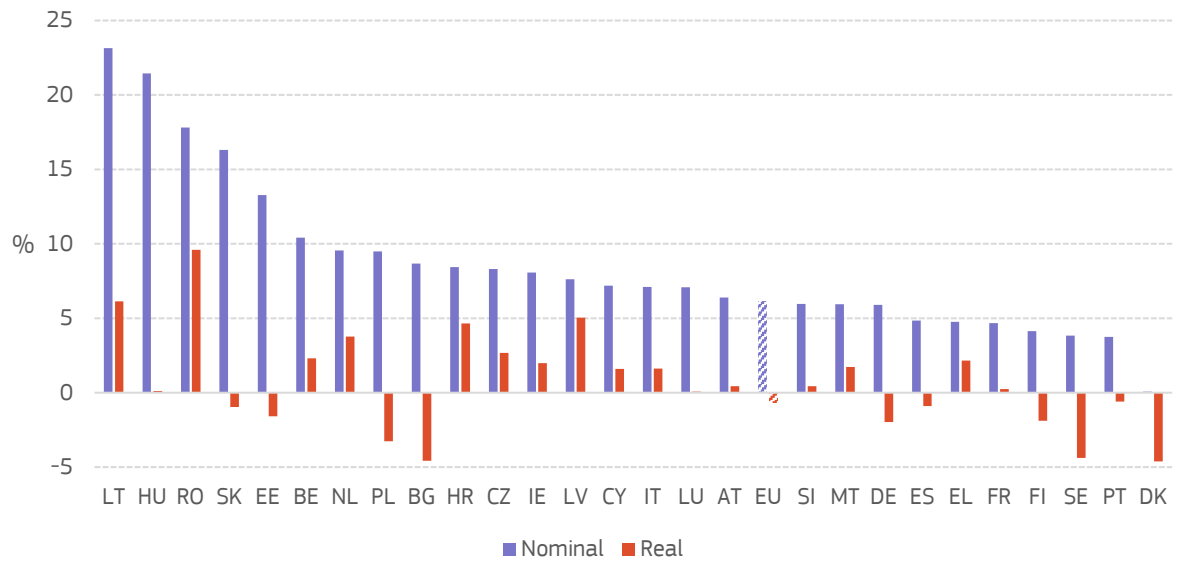
Figure 3. Public expenditure by function (2019-2022)

	2019 % of total	2020 % of total	2021 % of total	2022 % of total	2019-2022 percentage point change
Economic affairs	9.5	11.5	12.2	11.8	2.3
Housing and community amenities	1.2	1.2	1.7	2.0	0.8
Health	15.0	15.1	15.7	15.5	0.5
Defence	2.6	2.5	2.5	2.6	0.0
Environmental protection	1.7	1.6	1.6	1.6	-0.1
Public order and safety	3.6	3.4	3.4	3.4	-0.2
Recreation, culture and religion	2.5	2.3	2.3	2.3	-0.2
General public services	12.4	11.5	11.6	12.1	-0.3
Education	10.1	9.4	9.4	9.5	-0.6
Social protection	41.4	41.4	39.7	39.2	-2.2

Source: Eurostat COFOG data. Online data code: [gov_10a_exp].

In 2022, public expenditure on education increased considerably in most EU countries in nominal terms, but not after accounting for increases in price levels. The variation at current prices (i.e. in nominal terms) reached 6.1% at EU level, with peaks above 10% in Lithuania, Hungary, Romania, Slovakia, Estonia and Belgium. However, due to the sharp price increases recorded in 2022, the EU average at constant prices (i.e. in real terms) decreased by 0.7%, with 10 Member States experiencing a decline in this indicator (Figure 4).[9] Taking a long-term perspective, Figure 5 shows that between 2007 (the last year before the Great Recession) and 2022, nominal public expenditure on education in the EU rose by almost 50%, recording an increase in all years but 2012. Real expenditure grew by around 10% over the same period, although with year-on-year declines in 2011, 2012, 2020 and 2022.

Figure 4. Year-on-year change in public expenditure on education (2022)

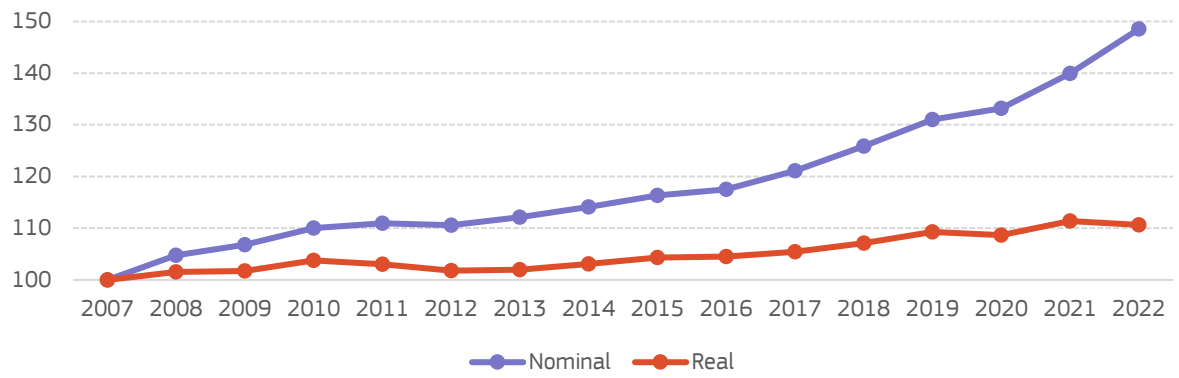


Notes: Provisional data for BE, DE, ES, FR, PT. Real values are expressed at 2015 constant prices in national currencies by using the price deflator for collective consumption expenditure of general government.

Source: European Commission services' calculations based on Eurostat COFOG data and AMECO data.

[9] This report uses the price deflator for collective consumption expenditure of general government to convert public expenditure on education from current prices to 2015 constant prices. At EU level, this price deflator increased by 6.8% in 2022 compared with 2.5% in 2021 and 2.2% in 2020.

Figure 5. Evolution of nominal and real public expenditure on education in the EU-27 (index 2007=100)



Notes: Real values are expressed at 2015 constant prices by using the price deflator for collective consumption expenditure of general government.

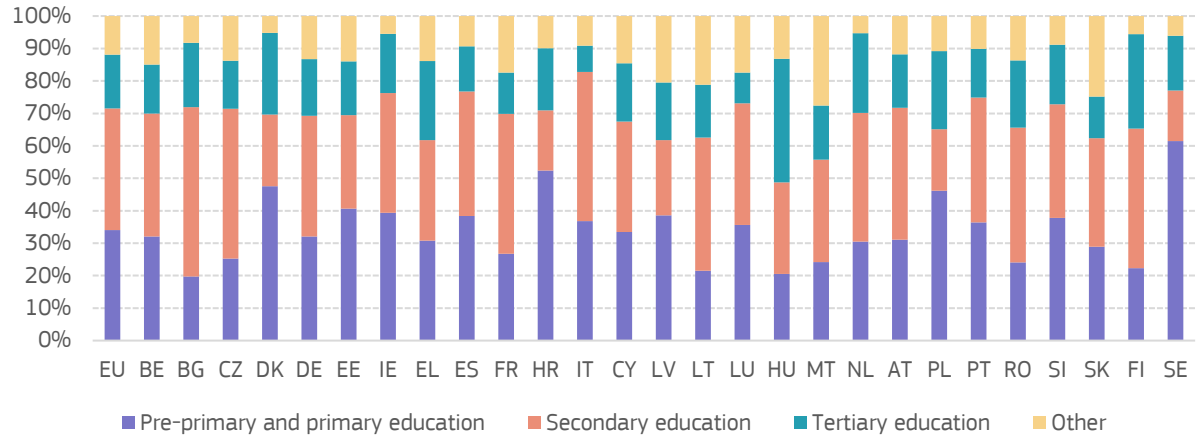
Source: European Commission services' calculations based on Eurostat COFOG data and AMECO data.

The bulk of public expenditure goes to school education. In 2022, school education received more than 70% of public expenditure on education at EU level. This is roughly equal split between, on the one hand, pre-primary and primary levels (34%) and, on the other hand, secondary level (37%), while tertiary education accounted for 17% of public expenditure. Those shares remained largely stable between 2019 and 2022 (European Commission, 2022; European Commission, 2023c). The EU averages mask large differences among Member States (Figure 6). Those differences can be explained by many factors:

- level of involvement of the general government in the education system;
- enrolment;
- the duration of compulsory education;
- relative wages in the education sector;
- class size and student teacher ratios;
- instruction time; and • the cost of teaching materials and facilities.

At tertiary level, tuition fees and support for students are also determining factors.

Figure 6. Distribution of public expenditure on education by educational level (2022)

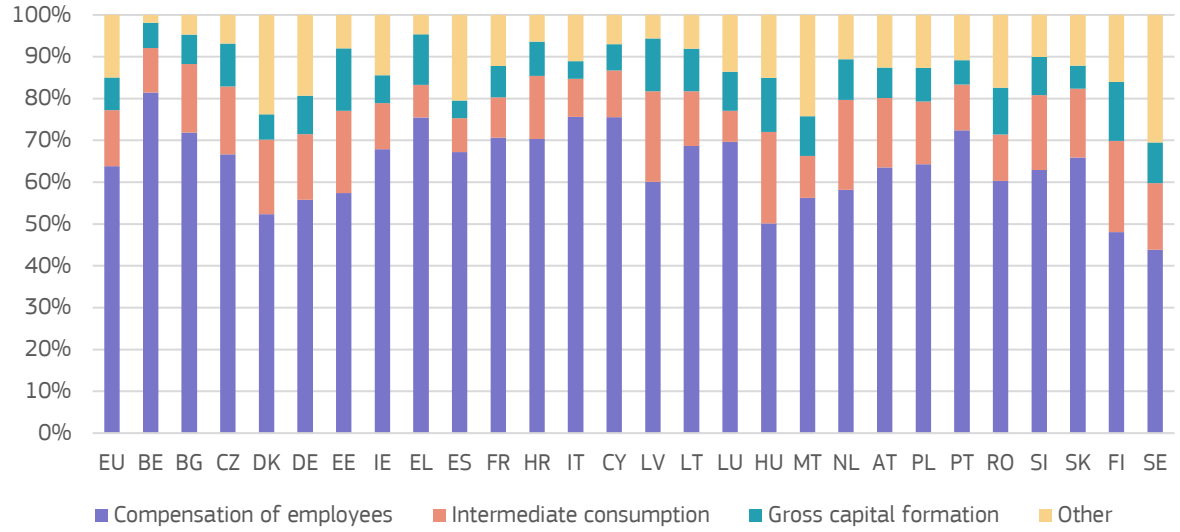


Notes: Provisional data for BE, DE, ES, FR, PT. 'Secondary education' also includes expenditure on post-secondary non-tertiary education'. 'Other' is the sum of the following items: education not definable by level, subsidiary services to education, R&D education and education not elsewhere classified.

Source: Eurostat COFOG data. Online data code: [gov_10a_exp].

Staff costs account for almost two-thirds of public expenditure. 64% of public expenditure on education at EU level went to compensation of employees (i.e. wages and non-wage costs such as employers' social contributions). Intermediate consumption (i.e. purchases of non-durable goods, such as teaching materials, and services needed to provide education, such as heating, electricity, cleaning and maintenance services) received 13% of expenditure. Gross capital formation (i.e. investment in acquiring fixed assets and durable goods, such as computers and buildings, and also including the depreciation of fixed assets) accounted for 8% of expenditure (Figure 7). Those shares remained largely stable between 2019 and 2022 (European Commission, 2022; European Commission, 2023c).

Figure 7. Distribution of public expenditure on education by category (2022)



Notes: Provisional data for BE, DE, ES, FR, PT. 'Other' is the sum of the following items: subsidies, other taxes on production, property income, social benefits, other current transfers, capital transfers.

Source: Eurostat COFOG data. Online data code: [gov_10a_exp].

A new pattern in investment in education is emerging against the backdrop of increased competition for public funding. 2022 data on investment in education confirm the early signs of an emerging pattern that had appeared in 2021 (European Commission, 2023c). While the share of GDP invested in education reverted to its pre-Covid trend, the share of public expenditure invested in education remained almost as low as in 2020 and 2021. In other words, expenditure on education is following GDP developments but seems to face a stronger competition from other public functions, and consequently gets a lower share of total public expenditure than in the 2010s. Although part of the measures taken in 2020-2021 to respond to the Covid-19 pandemic in the areas of economic affairs and health were discontinued or gradually phased out in 2022, new measures were introduced to face the energy crisis and support Ukraine in the wake of Russia's invasion. Probably only in 2026, when expenditure data up to 2024 will be available, it will be possible to fully assess if a new composition of public expenditure in the EU has emerged out of the recent crises and what effects this may have on investment in education.

Looking ahead, the new EU economic governance framework offers an opportunity for quality investment in education. In 2020-2023, Member States benefitted from a more flexible application of the EU fiscal rules, because the Commission had activated the so-called 'general escape clause' of the Stability and

Growth Pact.[10] This has given EU countries more room for using public expenditure, including on education, to tackle the economic effects of the pandemic. The Commission deactivated the clause at the end of 2023 because the EU economy was back to normal conditions (European Commission, 2023a). The reform of the EU economic governance framework adopted by the Council and European Parliament in April 2024 (European Parliament and Council of the European Union, 2024, Articles 13-14) provides for a more gradual fiscal adjustment for a Member State in case of specific reform and investment commitments.[11] The set of reforms and investments should fulfil several criteria, including:

- being growth- and resilience-enhancing;
- supporting fiscal sustainability;
- addressing common EU priorities (the most relevant for education being *"social and economic resilience, including the implementation of the European Pillar of Social Rights"* and *"digital transition"*) and relevant European Semester country-specific recommendations.

The research literature linking education and economic growth shows that skill formation is among the key drivers of sustainable economic growth and resilience, because it enhances the stock and quality of human capital (Valero, 2021; European Commission, 2024e).[12] While it is still too early to provide a full assessment of what the new rules will imply, they clearly set quality standards for national public expenditure to qualify for a more gradual fiscal adjustment. Ensuring effectiveness and efficiency[13] will be the best way for investment in education to meet those criteria and seize the opportunity offered by the new EU framework.

10 The Stability and Growth Pact is a set of rules designed to ensure that EU countries pursue sound public finances and coordinate their fiscal policies. The 'general escape clause' implies that, in a period of severe economic downturn for the whole EU, Member States can temporarily deviate from their medium-term budgetary objectives (European Commission 2020).

11 i.e. up to 7 years instead of 4 years to fulfil fiscal criteria in exchange for specific set of reform and investment commitments.

12 For instance, Hanushek and Woessmann (2015) develop an aggregate measure of basic skills for 50 countries from various international tests of mathematics and science between 1964 and 2003. They call this measure the "knowledge capital of nations". It relies on the average standardised test scores from each country's historical participation in the tests, interpreted as a proxy for the average skills of the whole labour force. The growth model combines these skill measures with the average years of school attainment and the initial level of GDP in each country to explain the average annual growth rate in real per-capita GDP between 1960-2000. The authors find a strong relationship between basic skills and economic growth: a one-standard-deviation rise in student attainment is associated with a 1.7-2 percentage point increase in annual GDP growth rates.

13 Effectiveness refers to the ability to provide good educational outcomes, by making the most of the available human and physical resources. Efficiency adds a financial dimension to the analysis of effectiveness and refers to the ability to provide the desired educational outcomes at the lowest possible cost. See European Commission (2023c) for a methodological discussion about effectiveness and efficiency of investment in education.

Part 2

Counterfactual education policy evaluation in Europe: the state of play

The case for counterfactual impact evaluation is based on the need to collect evidence and determine whether policy measures have been effective and financial resources have been used efficiently. The relationship between investment in education and learning outcomes is complex and there is no optimal level of investment in education. An increase in expenditure is associated with better scores in international tests, but the relationship is not linear and becomes weaker at higher levels of expenditure (European Commission, 2023c). As there is no guarantee that increasing public spending automatically yields better results, identifying the causal effect of policy measures is key for assessing their effectiveness and efficiency. Counterfactual policy evaluation involves comparing the outcomes of interest of those having benefitted from a policy or programme (the "treated group") with those of a group similar in all respects to the treatment group (the "control group"), the only difference being that the control group has not been exposed to the policy or programme. The control group provides information on the counterfactual case, i.e. what would have happened to the members subject to the intervention had they not been exposed to it. Counterfactual methods allow researchers to provide a causal interpretation of their findings.

Part 2 of this report will look at the state of play with the use of this evaluation approach in education in Europe,[14] by presenting indicators based on a novel dataset with information on the studies published in recent years. The dataset only includes studies meeting five specific criteria:

1) They assess the impact of an education policy measure, an educational programme or a structural aspect of an education systems;
2) They apply a methodology able to identify the causal effects, i.e. they must either present the results of a randomised experiment[15] or apply one of the following quasi-experimental counterfactual approaches[16]: difference-in-differences, regression discontinuity design, matching methods, instrumental variables[17];
3) They cover at least one European Economic Area country, i.e. EU Member States plus Norway, Iceland and Liechtenstein;
4) They are fairly recent to make sure their findings are still relevant, i.e. only studies published between 2010 and 2023 were selected.
5) They have been published in a peer-reviewed journal, or in a working paper series, or in a book/report. This excludes unpublished manuscripts, draft studies and papers presented at a conference.

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14 In this report, the term 'Europe' refers to the European Economic Area, i.e. EU Member States plus Norway, Iceland and Liechtenstein.

15 Randomised experiments are a type of study design used in research, particularly in the fields of medicine, social sciences, and economics, to assess the causal effects of interventions or treatments. In a randomised experiment, participants are randomly assigned to either a treatment group or a control group. Random assignment ensures that each participant has an equal chance of being assigned to either group, minimizing the risk of systematic differences between the groups at baseline. The treatment group receives the intervention or treatment being studied, while the control group does not. Both groups are then monitored to measure the outcomes of interest. By comparing the outcomes between the treatment and control groups, researchers can assess the causal effect of the intervention or treatment. Any differences observed between the groups are attributed to the treatment, assuming that random assignment has effectively controlled for confounding variables. This makes randomized experiments a powerful tool for evaluating the effectiveness of interventions.

16 Unlike true experiments, where participants are randomly assigned to different groups, quasi-experiments involve the observation of naturally occurring groups or conditions. This means that the researcher does not have control over the assignment of participants. In the context of quasi-experimental methods, a counterfactual refers to the unobserved outcome that would have occurred in the absence of the intervention or treatment being studied.

17 Difference-in-Differences: This method compares the changes in outcomes over time between a treatment group and a control group. By examining the differences in trends, researchers try to isolate the effect of the treatment from other factors. Regression Discontinuity Design (RDD): RDD is used when participants are assigned to treatment or control groups based on a cutoff score or threshold. The assumption is that those just above or below the threshold are similar in all relevant respects, except for their assignment to treatment. Matching methods: they involve identifying a comparison group that is similar to the treatment group in terms of observable characteristics. This method helps reduce selection bias. Instrumental Variables (IV): IV involves finding a variable (the instrument) that is correlated with the treatment but not directly related to the outcome. This allows researchers to isolate the causal effect of the treatment.

Although the dataset cannot claim to include all possibly existing studies, it is the most comprehensive review about the use of counterfactual methods in educational research in Europe so far. The search procedure identified 984 studies meeting all the five criteria.[18] Then the studies were coded according to a series of features (year of publication, method, geographical coverage, educational level, policy area) and constituted the final dataset. The bibliographical list of the 984 studies with their details are available as an online Annex.

CLOSE-UP

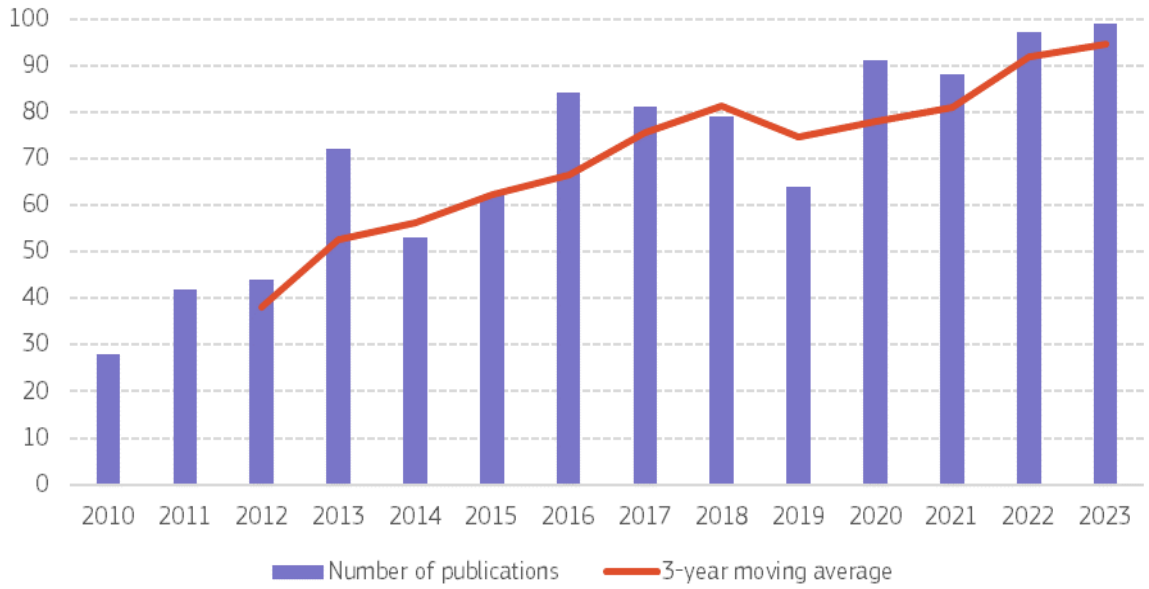
The 17 policy areas identified in this report

Policy area	Description
Assessment methods	All kinds of student assessment and teaching staff assessment
Career guidance	All kinds of support provided to students when choosing their educational trajectory
Competences and skills	All kinds of measures to improve competences and skills of students and teaching staff
Digital tools	All uses of digital tools in education
Disadvantaged students	All kinds of measures focusing on: students from a low socio-economic background, students with special educational needs, disadvantaged minorities
Education drop-out/completion/participation	All kinds of measures to reduce early leaving from education and training, increase completion and participation at all levels of education, from early childhood education and care to tertiary education
Educational infrastructure	All kinds of measures to improve the quality and quantity of educational infrastructure
Education-to-work transition	All kinds of measures to promote a smooth transition from education and training to the labour market
Institutional aspects of education system	The effects of the institutional characteristics of an education system, e.g. class and school size, length of compulsory education, curricula, instruction time
International mobility	All kinds of measures to promote student and teaching staff mobility
Long-term effects of education	The social and economic effects of the quantity and quality of education in the long term (e.g. on health, crime, labour market outcomes, economic growth)
Migrant students	All kinds of measures focusing on students with a migrant background
Private education	The effects of private provision of education, at all educational levels
Teaching profession	All kinds of measures concerning initial teacher education and continuing professional development
Tracking	The effects of student tracking in secondary and tertiary general education and vocational education and training
Tuition fees/Financial support	All kinds of financial measures related to student fee and support systems
Well-being	All kind of measures to promote the well-being of students and teaching staff

[18] The search was carried out through the Google Scholar electronic database and employed keywords based on the following structure: "*[method]* AND education AND (student OR teacher) AND (school* OR universit*) AND *[country list]*", where *[method]* is one of the methods listed in criterion 2, and *[country list]* is a string including all countries listed in criterion 3 interacted with the OR operator. The search delivered thousands of results. Subsequently, the titles and abstracts (and, when necessary, the full texts) of the studies were screened to exclude those results not meeting all five criteria, and duplicates were removed. An additional screening of the major academic journals and working paper series dealing with educational topics complemented the search.

The number of studies in Europe has been rising over the past decade. The use of counterfactual methods in education policy evaluation is still rather limited in Europe compared with the United States, where the bulk of counterfactual evidence in advanced countries comes from (Fack et al., 2022). However, the number of published studies has increased from an average of around 40 per year in 2010-2012 to an average of almost 100 per year in 2021-2023 (Figure 8). This shows that both researchers and policymakers are more frequently designing rigorous evaluation approaches and collecting suitable quantitative data at individual level.

Figure 8. Number of publications per year (2010-2023)

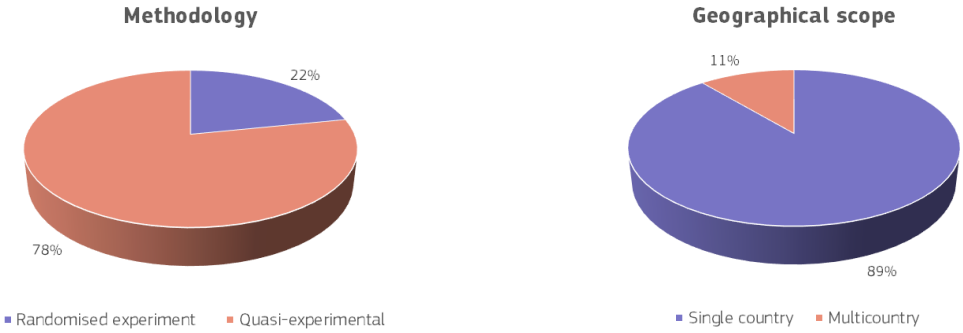


Source: European Commission services' calculations.

Most studies apply quasi-experimental counterfactual methods, focus on a single country and cover secondary education. Only one in five publications originate from randomised experiments, while four in five publications use one of the quasi-experimental methods listed above (or sometimes a combination of them). Nine in ten publications are single-country studies (Figure 9). Multicountry studies often use data from large-scale international assessments, such as the Programme for International Student Assessment (PISA), the Trends in International Mathematics and Science Study (TIMSS), or the Progress in International Reading Literacy Study (PIRLS). Figure 10 shows that more than 500 publications cover the secondary educational level and more than 200 the primary or tertiary levels, while less than 100 involve early childhood education and care (ECEC).

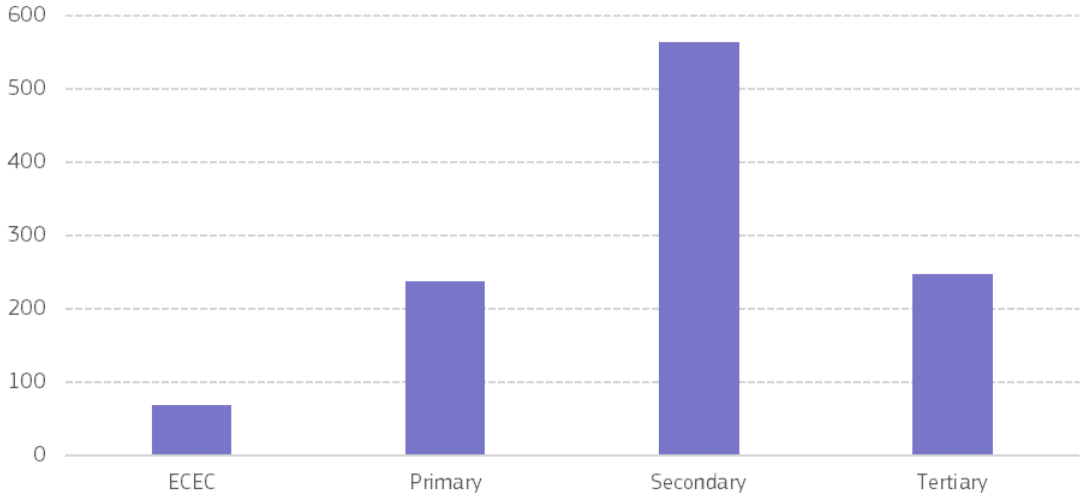
Competences and skills are the most frequent subject. They are covered by 432 studies and are followed by institutional aspects of the education system (242 studies) and long-term effects of education (199 studies). More than 100 publications also address education drop-out/completion/participation, disadvantaged students or the teaching profession. By contrast, educational infrastructure is an almost unexplored subject (Figure 11).

Figure 9. Distribution of publications by methodology and geographical scope (2010-2023)



Source: European Commission services' calculations.

Figure 10. Number of publications by educational level (2010-2023)

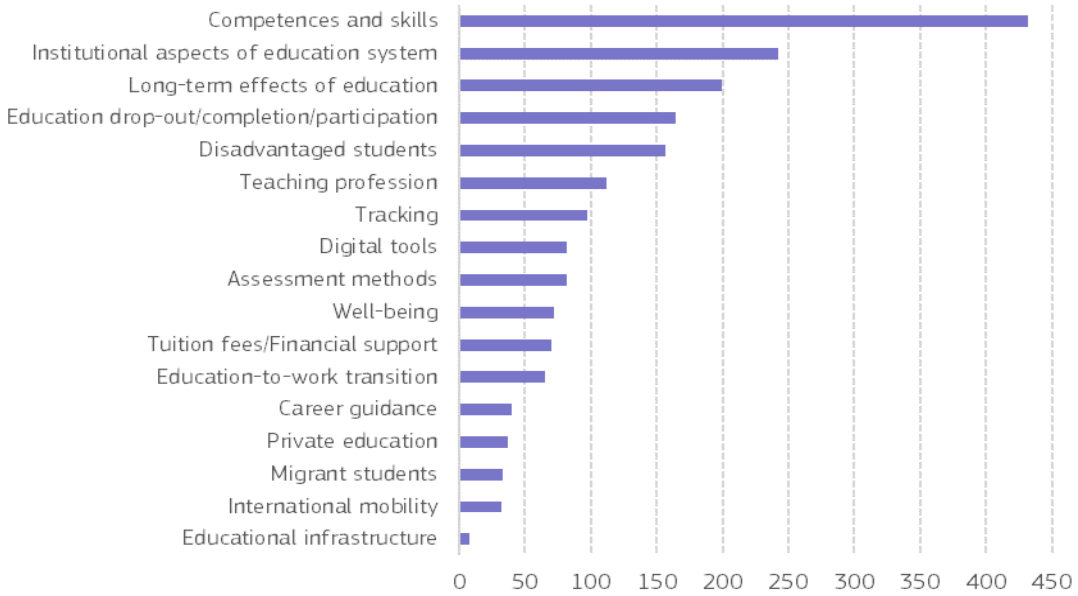


Notes: The sum of the four categories exceeds the total number of publications, because a single publication may cover more than one educational level.

Source: European Commission services' calculations.

The dataset presented in this report is a first step towards an analysis of the findings from the literature on causal effects of education policies in the EU through the Learning Lab on Investing in Quality Education and Training. EU Member States and the Commission are working together to make education systems more effective and efficient. Designing the right policies, programmes or reforms, and putting in place proper implementation strategies are key to increasing the effectiveness and efficiency of investment in education. Improving educational outcomes is one of the main conditions to ensure the long-term competitiveness of the EU economies (European Commission, 2024e). As requested by the May 2024 Council conclusions on promoting evidence-informed policy and practice in education and training to achieve the European Education Area, the Commission will work to "*establish an information repository equipped with tools facilitating access to evidence-informed policy and practice insights*", as well as to "*make existing evidence more accessible to EU education and training policy-makers*" (Council of the European Union, 2024, p. 4) e.g. through in-depth analyses of the research literature. These activities are part of the Learning Lab on Investing in Quality Education and Training, which will support Member States in further developing an evidence-informed approach to policy design and implementation (European Commission 2024d). This includes strengthening the expertise on rigorous evaluation methods among policymakers and sharing knowledge about properly evaluated policies (European Commission, 2024e).

Figure 11. Number of publications by policy area (2010-2023)



Notes: The sum of the 17 categories exceeds the total number of publications, because a single publication may cover more than one policy area.

Source: European Commission services' calculations.

CLOSE-UP

The Learning Lab on Investing in Quality Education and Training

Launched in November 2022, the Learning Lab on Investing in Quality Education and Training aims to promote a culture of evaluation in education policy and provide knowledge and resources to identify how to make EU education systems more effective, efficient and equitable. Its activities cover three main areas:

- **Capacity building on evaluation methodologies:** the Learning Lab proposes training courses on education policy evaluation methodologies to policymakers at all levels (national, regional, and local) and education practitioners. So far, two general events took place, as well as four more specific trainings tailored to the education system's needs in Latvia, the French Community of Belgium, Ireland and Portugal.
- **Collaborative work among Member States:** the Learning Lab has created a Community of Practice, where representatives of Member States and international organisations can discuss their experiences with impact evaluation in education and share good practices.
- **Analysis and evaluation of education policies:** the Learning Lab carries out analytical work on education policies, from impact evaluations to analyses of microdata from large-scale international student assessments (Karpiński, 2023) and in-depth analyses of existing research findings (Di Pietro, 2023). Specific calls under the 2023-2024 Horizon Europe work programme of cluster 2 (Culture, Creativity and Inclusive society) support research projects on education policy evaluation. The topics are: 'Efficiency and effectiveness of investment in high-quality education and training', 'Mapping of longitudinal data and assessment of inequalities in education, training and learning achievements' and 'Effective education and labour market transitions of young people'.

Annex and references

Annex. Additional tables

Figure A.1. Evolution of public expenditure on education (2019-2022)

	Share of total public expenditure (%)				Share of GDP (%)			
	2019	2020	2021	2022	2019	2020	2021	2022
EU	**10.1**	**9.4**	**9.4**	**9.5**	**4.7**	**5.0**	**4.8**	**4.7**
BE	11.8	11.2	11.3	11.8	6.1	6.6	6.2	6.3
BG	10.5	9.5	10.4	9.4	3.8	3.9	4.3	3.9
CZ	11.8	10.7	10.9	11.0	4.9	5.1	5.1	4.9
DK	12.7	11.7	11.8	11.8	6.3	6.3	5.9	5.3
DE	9.7	9.2	8.9	9.1	4.4	4.6	4.5	4.5
EE	15.5	14.3	14.2	14.6	6.1	6.4	5.9	5.8
IE	13.2	11.8	11.8	12.5	3.2	3.2	2.9	2.7
EL	8.3	7.5	7.1	7.2	4.0	4.5	4.1	3.8
ES	9.5	9.0	9.1	9.2	4.0	4.6	4.6	4.4
FR	9.5	8.8	8.9	9.0	5.2	5.4	5.3	5.2
HR	10.6	10.2	10.6	10.7	4.9	5.5	5.2	4.8
IT	8.0	7.5	7.2	7.2	3.9	4.3	4.0	4.1
CY	13.4	12.9	12.7	13.2	5.1	5.7	5.3	5.1
LV	15.0	13.7	12.9	13.1	5.7	5.8	5.7	5.3
LT	13.2	12.1	12.7	13.5	4.6	5.2	4.7	4.9
LU	11.2	10.6	11.0	10.7	4.8	5.0	4.7	4.7
HU	10.2	9.3	10.3	10.4	4.7	4.8	5.0	5.1
MT	14.0	12.5	12.5	12.7	5.0	5.6	5.4	5.0
NL	11.8	10.9	11.0	11.6	5.0	5.2	5.1	5.1
AT	9.9	8.9	8.8	9.0	4.8	5.1	4.9	4.8
PL	12.0	10.6	11.2	10.5	5.0	5.1	4.9	4.6
PT	10.5	9.6	9.9	9.8	4.5	4.7	4.7	4.3
RO	10.0	8.7	8.1	8.0	3.6	3.7	3.2	3.2
SI	12.4	10.9	11.7	12.0	5.4	5.6	5.8	5.6
SK	10.5	9.9	9.4	10.7	4.2	4.4	4.3	4.5
FI	10.5	10.2	10.2	10.4	5.6	5.9	5.7	5.5
SE	14.1	13.4	13.5	13.3	6.9	7.0	6.6	6.3

Source : Eurostat COFOG data. Online data code: [gov_10a_exp].

Figure A.2. Year-on-year change in public expenditure on education (%)

	Year-on-year nominal change (%)				Year-on-year real change (%)			
	2019	2020	2021	2022	2019	2020	2021	2022
EU	**4.1**	**1.7**	**5.1**	**6.1**	**2.0**	**-0.6**	**2.5**	**-0.7**
BE	2.7	3.0	4.0	10.4	1.3	2.3	2.0	2.3
BG	18.2	3.3	26.8	8.7	7.8	-3.8	13.6	-4.6
CZ	13.8	2.8	6.7	8.3	9.0	-0.9	4.0	2.7
DK	1.5	-0.7	3.5	0.1	-0.4	-1.9	1.4	-4.6
DE	5.8	4.1	4.0	5.9	4.2	1.7	0.6	-2.0
EE	5.6	3.6	5.1	13.3	-0.1	2.2	-0.1	-1.6
IE	9.8	5.1	4.1	8.1	6.7	3.8	1.6	2.0
EL	-0.5	1.8	0.4	4.8	-2.2	1.8	-1.9	2.2
ES	4.8	3.9	7.5	4.8	2.5	2.6	5.4	-0.9
FR	1.7	-2.1	5.1	4.7	1.2	-4.8	5.0	0.2
HR	11.1	3.4	8.3	8.4	8.1	1.3	2.7	4.6
IT	0.8	1.0	4.2	7.1	0.3	-1.3	2.4	1.6
CY	9.6	5.8	4.8	7.2	3.9	2.2	2.0	1.6
LV	3.4	-0.4	9.6	7.6	-1.1	-0.6	2.0	5.0
LT	9.4	14.6	3.9	23.1	-0.9	5.2	3.3	6.1
LU	8.7	7.4	5.6	7.1	4.9	4.0	4.4	0.1
HU	2.9	3.2	19.4	21.4	-3.6	0.6	10.9	0.1
MT	10.9	5.8	9.3	5.9	8.0	2.6	6.4	1.7
NL	3.6	2.9	6.0	9.6	1.3	1.4	3.3	3.8
AT	3.7	1.4	3.6	6.4	1.0	0.1	0.9	0.4
PL	8.4	4.1	8.3	9.5	5.0	1.1	2.5	-3.3
PT	5.2	-1.0	6.9	3.7	2.0	-2.9	4.2	-0.6
RO	28.2	1.0	-1.4	17.8	20.5	-5.0	-5.8	9.6
SI	5.7	1.3	15.0	6.0	0.7	-1.9	9.4	0.4
SK	13.7	3.7	2.7	16.3	4.1	-5.8	-2.5	-1.0
FI	3.9	3.6	2.6	4.1	2.0	3.4	-0.7	-1.9
SE	5.0	1.0	3.4	3.8	1.5	0.1	-0.3	-4.4

Source: European Commission services' calculations based on Eurostat COFOG data and AMECO data..

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