PRIMARY AND SECONDARY EDUCATION FINANCING AND QUALITY IN THE EU AND BULGARIA – A COMPARATIVE ANALYSIS

Assoc. Prof. Lyudmil Vasilev Naydenov, PhD
University of Economics – Varna
Email: *lnaydenov@ue-varna.bg*

Abstract: The paper addresses the structure, financing, and quality of primary and secondary school education in the EU and Bulgaria. Education is interpreted both as a process of acquiring knowledge, developing skills, and forming competencies and as an activity that encompasses learning, upbringing, and socialization of young people. The research aims to identify the reasons behind the unsatisfactory performance of Bulgarian students in international assessments. To this end, the study summarizes the specific features of education financing in Bulgaria and analyzes key indicators that characterize expenditures on primary and secondary education in the EU. From a comparative perspective, it discusses the absolute amount of funding, its share relative to GDP, the student–teacher and teaching staff ratios, as well as the number of teachers and graduates. The paper supports the view that the establishment of schools as centers for training highly qualified, motivated, and competitive professionals largely depends on the efficient use of resources and the possibilities for personalization of the learning process.

Keywords: financing of education, primary and secondary education expenditures, primary and secondary education quality, personalization of learning.

URL: nsarhiv.uni-svishtov.bg
DOI: https://doi.org/10.58861/tae.ea-nsa.2025.3.02.en
JEL: I21, I22.

* * *

Introduction

The quality of primary and secondary education directly reflects the qualification of the workforce and is of great importance for the socio-economic development of society. This is why the unsatisfactory performance of Bulgarian students in various international comparisons is a cause for legitimate concern. It is worth noting that in 2022 the share of students in Bulgaria with low achievements (below Level 2 of the PISA scale) was 53.6% in mathematics (EU average: 29.5%), 48% in sciences (EU average: 24.2%), and 52.9% in reading literacy (EU average: 26.2%). These results are not only below the average but also the lowest among the 27 EU member states (OECD, 2023). At the same time, according to Eurostat, in 2023 the relative share of people aged 16–19 with limited general digital skills in Bulgaria was 216.2% higher than the EU average. The percentage of young people (16–19 years) with basic or higher digital skills in Bulgaria was 56.8%, again below the EU average (66.5%). The relevance of this study is determined by the undeniable role of school education for the competitiveness of the national economy juxtaposed to the negative statistics regarding its status in Bulgaria. The subject of the research is the institutions of the primary and secondary education system, while the object is a comparative analysis of the expenditures for rendering this service. The research thesis is that financing the school education system is not among the determining factors for the unsatisfactory performance of Bulgarian students.

1. Structure and Financing of Primary and Secondary Education in Bulgaria

In an environment of dynamic technological innovation (including the spread of AI systems), increasing business requirements for workforce qualifications, and intensifying competition in the labor market, quality education is of essential importance. Education should be interpreted as a formal or informal process through which learners' potential is guided and developed. More specifically, education can be defined as purposeful and organized interaction of the individual with a set of socializing factors. (Ivanov, 2004). The analyzed process should "create prerequisites and conditions for continuous self-education, taking into account integrative trends in the development of science and technology and the need for a modern literacy" (Vitanova, 2023, p. 60).

The above definitions lead to the conclusion that school education shapes character and abilities, transmits accumulated knowledge and skills, and develops ways of thinking and understanding. More specifically, it involves

active interaction between teachers and students in specialized (tailored to the specific needs of the students) institutions that prepare learners for participation in various spheres of social life. Education thus fosters knowledge acquisition, skill development, value formation, and socialization.

In Bulgaria, the education process is based on several key principles, such as[1]:

- unified state educational policy;
- equal access to education;
- equality and non-discrimination;
- preservation and development of Bulgaria's educational traditions;
- innovation and efficiency of teaching practices;
- institutional autonomy in implementing educational policies.

Institutions in preschool and school education are *legal entities that carry out their activities on the principle of autonomy* and are categorized into kindergartens, schools, and centers for personal development support. Kindergartens may be municipal or private, while schools can be state, municipal, private, or religious. The classification of school education according to the level of education is also important. Based on this criterion, school education is divided into primary and secondary. Primary education includes two stages: primary (grades 1 to 4) and junior high school (grades from 5 to 7.) Secondary education comprises grades from 8 to 12 and is also divided into two stages: first high school (grades from 8 to 10) and second high school – grades 11 and 12.)

According to the regulations in force as of 2025, activities in the system of preschool and school education are *financed with funds from the state budget, the budgets of municipalities, European funds and programs, and other sources including the private sector*. Funds from the state budget are used to finance activities that are the subject of state policy on education, such as maintenance of the activities of upbringing and education of children and students, support for their personal development, implementation of national education development programs. Therefore, the funds for preschool and school education from the state budget promote equal access to education and support for personal development of all of children and students. The law explicitly provides that the funds from the state budget for financing activities in the system of preschool and school education shall be planned annually in an amount not lower in amount and as a percentage of the gross domestic product than that set out in the state budget for the previous year.

The funds from the state budget are allocated to educational institutions *according to spending standards.* For example, the funds upbringing and

[1] Pre-school and School Education Act, last amend. and suppl. SG/No. 26 of 27 March.2025.

education of children and students are distributed between the budgets of the primary budget spending authorities financing state and municipal schools and kindergartens on the basis of: the number of children and students; the number of groups and classes; the type and number of educational institutions; standard for a child and a student; standard for group and class; standard for an educational institution.

State and municipal kindergartens and schools receive *additional funding* for working with children and students from vulnerable groups; maintenance of classes for acquiring qualifications in protected (designated as important) professions. Moreover, the state budget provides funds for transportation of children and students who commute to schools in other settlements, provided that there are no relevant educational institutions in the settlement where they live. Institutions in the system of preschool and school education may also receive additional funding under national programs for development of education.

State and municipal schools apply a *delegated budget system*, according to which the school principals have certain powers. For example, they are entitled to make compensated changes to the revenue and expenditure plan, to manage the funds of the educational institution, to determine the number of staff, individual salaries, teaching workload and the number of groups and classes, as well as the number of students in them. Therefore, the delegated budget system provides these educational institutions with *financial autonomy* and the freedom to implement their independent policy.

The analysis of the most important characteristics of primary and secondary education in Bulgaria emphasizes the fundamental importance of the Pre-school and School Education Act. It can be concluded that the latter takes into account the need to increase the usefulness of education, creates basic prerequisites for improving teaching methods and forms, and attempts to ensure that Bulgarian students acquire the necessary key competencies. To increase the commitment and motivation of students, it is essential to actively use the innovative forms of problem-based learning regulated in the Act, including under the control of students and using the capabilities of artificial intelligence. Adjusting the educational structure in terms of extending primary education to grade 8 can also be considered.

The system of funding primary and secondary education in Bulgaria *can also be described as appropriate* and in line with national traditions. Opportunities for improvement include refining and objectifying the applied expenditure standards, more active use of program budgeting (where applicable), strengthening financial incentives for improving the qualifications of teaching staff, improving control over the funds spent and conditioning them more closely with students' performance in international comparisons. It should be explicitly emphasized that the regulatory framework in Bulgaria and the

chosen model for financing school education *cannot be interpreted as factors negatively affecting the quality of the service*, i.e. the poor results of Bulgarian students are not subject to direct legislative amendments.

2. Public Expenditure on Primary, Junior High, and High School Education in Bulgaria and the EU

From a financial perspective, education is a mixed good, i.e. it can be funded by both public and private sectors. Moreover, the process of education and its outcomes generate positive externalities, including factors for economic growth acceleration, improving the competitiveness of economic agents, reducing transaction costs and increasing welfare (McGrath, 2010; Grant, 2017; Hanushek & Woessmann, 2020; Vutsova & Baltova, 2024). Therefore, primary and secondary education are funded predominantly with public sector resources. In this regard, a comparative analysis of the volume and dynamics of these resources in the EU and Bulgaria and the possible dependence of education quality on government spending policy are of undisputed interest. The analysis uses data regarding:

- the absolute amount of public expenditure, and
- its relative share of GDP.

According to Eurostat data, Between 2012 and 2021, the *absolute volume* of Bulgaria's public spending on education consistently increased. In 2012, it amounted to €2,213.5 million and consequently rose to €2,778.9 million by 2015. In 2018, total spending reached €3,588.6 million (€1,979.8 million for primary/lower secondary and €1,608.8 million for upper secondary education). In 2021, the trend continued and spending increased to €5,700.7 million (€3,065.4 million for primary/lower secondary and €2,635.3 million for upper secondary education), a growth of €3,487.2 million compared to 2012. The growth over the last three years (2021 through 2018) of €2,112.1 million can be considered indicative.

A direct comparison of the values of this indicator in the EU is not entirely accurate due to differences in price levels (and standards of living), but it remains of certain interest. In this regard, it is sufficient to note that in 2018, the average public expenditure on school education in the EU amounted to €14,484.8 million, compared to €3,588.6 million for Bulgaria (24.77% of the EU average), i.e. more than four times lower. In 2021, the average nominal amount of public spending on education in the EU was €15,985.9 million, while

in Bulgaria it was €5,700.7 million (35.66% of the EU average), representing a difference of more than 2.8 times[2].

An objective analysis of this issue requires focusing on another, more accurate indicator regarding government spending policy priorities. In particular, this refers to the *relative share of government spending on primary, lower secondary, and upper secondary education as a percentage of GDP*. In Bulgaria, the value of this indicator (see Table 1) was 2.13% in 2012, 2.32% in 2015, and 2.38% in 2018, and reached 2.87% in 2021. The increase over the period amounts to 0.74 percentage points. Although this rise cannot be described as dramatic, it should by no means be underestimated.

This upward trend is characteristic of both main categories of school education – primary/lower secondary and upper secondary education. For example, the increase in public expenditure on primary and lower secondary education, as a share of GDP, between 2012 and 2021 is 0.5 percentage points (1.39% in 2012; 1.56% in 2015; 1.60% in 2018; 1.89% in 2021). Similarly, expenditure on upper secondary education (as a percentage of GDP) rose by 0.24 percentage points over the same period (0.74% in 2012; 0.76% in 2015; 0.78% in 2018; 0.98% in 2021).

Compared to the EU average levels, public expenditure on education as a share of GDP in Bulgaria lags behind, although there is a clear trend toward narrowing this gap. For example, in 2012, the value of the analyzed indicator in the EU was 3.15%, while in Bulgaria it was 2.13% - a difference of 1.02 percentage points. In subsequent years, the gap gradually decreased to 0.7% in 2015, 0.63% in 2018, and to only 0.21% in 2021. Despite the increase in public spending on education (both in absolute terms and as a percentage of GDP) Bulgaria's levels during these years remained lower than those of leading European countries in terms of this indicator. In this regard, several examples are worth noting.

In 2012, when the ratio of public expenditure on education to GDP in Bulgaria was 2.13%, the corresponding figures in other EU countries were significantly higher: 4.65% for Cyprus (+2.52%), 4.33% for Ireland (+2.2%), 4.32% for Belgium (+2.19%), and 4.04% for Latvia and Sweden (+1.91%). In the same year, the highest share of GDP allocated to primary and lower secondary education was reported for Ireland (3.31%), followed by Cyprus (3.22%) and Latvia (2.76%). The highest public expenditure on upper

[2] Public expenditures on education are highest in Luxembourg - €36,124.1 million in 2018 and €44,563.4 million in 2021. Sweden ranks second with €24,726.8 million in 2018 and €26,560.7 million in 2021. The lowest levels of public spending on education are observed in Romania and Bulgaria. In Romania, expenditures amounted to €3,165.1 million in 2018 (compared to €3,588.6 million in Bulgaria) and €4,012.8 million in 2021 (compared to €5,700.7 million in Bulgaria).

secondary education (as a share of GDP) was observed in Belgium (1.86%), Denmark (1.65%), and Cyprus (1.43%).

Table 1

Public expenditure on primary/lower secondary (PLS), and upper secondary (US) education in the EU as a percentage of GDP

	2012		2015		2018		2021	
	PLS	**US**	**PLS**	**US**	**PLS**	**US**	**PLS**	**US**
EU – 27	2.11	1.04	2.03	0.99	2.00	1.01	2.10	0.98
Belgium	2.46	1.86	2.43	1.85	2.40	1.71	2.41	1.63
Bulgaria	1.39	0.74	1.56	0.76	1.60	0.78	1.89	0.98
Czech Rep.	1.70	1.03	1.65	0.85	1.85	0.90	2.17	0.90
Denmark	-	1.65	-	-	2.63	1.08	2.62	0.99
Germany	1.88	0.88	1.81	0.83	1.83	0.82	2.04	0.81
Estonia	2.01	0.98	1.88	0.73	2.14	0.75	2.38	0.57
Ireland	3.31	1.02	2.02	0.63	1.65	0.58	1.46	0.47
Greece	1.83	0.81	1.95	0.71	1.98	0.67	-	-
Spain	2.00	0.83	1.90	0.83	1.85	0.82	2.14	0.98
France	2.37	1.18	2.36	1.15	2.34	1.13	2.40	1.10
Croatia	-	-	-	-	-	0.85	1.73	0.87
Italy	1.69	1.04	1.73	1.05	1.63	1.37	1.76	1.18
Cyprus	3.22	1.43	3.28	1.40	2.96	1.27	2.93	1.13
Latvia	2.76	1.28	2.36	0.92	1.88	0.80	1.82	0.82
Lithuania	2.02	0.63	1.77	0.48	1.72	0.41	1.83	0.45
Luxembourg	2.32	0.97	1.99	0.83	1.77	0.81	1.91	0.84
Hungary	1.52	0.97	1.44	1.08	1.29	1.05	1.40	0.76
Malta	1.78	1.46	1.66	1.30	1.81	1.19	2.01	1.11
Netherlands	2.68	1.11	2.39	1.03	2.25	1.05	2.32	1.06
Austria	2.13	1.10	2.12	1.00	1.99	0.91	2.05	0.91
Poland	2.30	0.87	2.19	0.78	2.14	0.68	2.01	0.78
Portugal	2.63	1.06	2.51	0.99	2.47	0.98	2.50	1.02
Romania	0.97	0.58	1.06	0.63	1.06	0.65	1.11	0.68
Slovenia	2.47	-	2.15	0.95	2.19	0.92	2.39	0.98
Slovakia	-	-	1.76	0.90	1.84	0.79	2.20	0.96
Finland	-	-	2.56	1.53	2.41	1.24	2.52	1.34
Sweden	2.62	1.42	2.60	1.22	2.84	1.28	2.78	1.26

Source: Eurostat.

In 2015, when this indicator for Bulgaria was 2.32%, the corresponding values in other EU countries were as follows: Cyprus – 4.68% (+2.36%), Ireland – 2.65% (+0.33%), Belgium – 4.28% (+1.96%), Latvia – 3.28% (+0.96%), and Sweden – 3.82% (+1.5%) In the same year, the largest share of GDP allocated to primary and lower secondary education was observed in Cyprus (3.28%), followed by Sweden (2.60%) and Finland (2.56%). The highest public

expenditure on upper secondary education (as a percentage of GDP) was recorded in Finland (1.53%), Cyprus (1.40%), and Malta (1.30%).

The relative share (percentage of GDP) of public spending on school education in Bulgaria *in 2018* was 2.38%, compared to 4.23% in Cyprus (+1.85%), 2.23% in Ireland (–0.15%), 4.11% in Belgium (+1.73%), 2.68% in Latvia (+0.3%), and 4.12% in Sweden (+1.74%) It is evident that in 2018, Bulgaria surpassed Ireland in terms of public spending on education as a share of GDP. In the same year, the highest percentage of GDP allocated to primary and lower secondary education was observed in Cyprus (2.96%), followed by Sweden (2.84%) and Denmark (2.63%), while the highest share of GDP spent on upper secondary education was recorded in Belgium (1.71%), Italy (1.37%), and Sweden (1.28%).

In 2021, when public expenditure on education in Bulgaria amounted to 2.87% of GDP, the corresponding figures were 4.06% in Cyprus (+1.19%), 1.93% in Ireland (–0.94%), 4.04% in Belgium (+1.17%), 2.64% in Latvia (–0.23%), and 4.04% in Sweden (+1.17%). According to the statistics for that year, Bulgaria managed to surpass Ireland and Latvia, overtaking them in terms of public spending on education as a share of GDP. In 2021, the highest expenditures on primary and lower secondary education were observed in Cyprus (2.93%), followed by Sweden (2.78%) and Denmark (2.62%). The largest share of GDP allocated to upper secondary education was recorded in Belgium (1.63%), followed by Finland (1.34%) and Sweden (1.26%).

It is fair to note that during the period under review, the level of public expenditure on primary and secondary education in Bulgaria *was not the lowest* in the EU. For instance, *in 2012*, spending on primary and lower secondary education in Romania amounted to 0.97% of GDP, which was 0.42 percentage points lower than Bulgaria's. Correspondingly, public expenditure on upper secondary education was 0.58% of GDP in Romania and 0.74% in Bulgaria (+0.16%). In the same year, the cost of upper secondary education in Lithuania was 0.63% of GDP, or 0.11 percentage points lower than in Bulgaria. Thus, in 2012, in terms of public spending on primary and lower secondary education (as a percentage of GDP), Bulgaria ranked ahead of Romania, while for upper secondary education it outranked both Romania and Lithuania.

In 2015, the relative share of public expenditure on primary and lower secondary education in Hungary and Romania was with 0.12% and 0.5% of GDP lower, respectively, than that in Bulgaria. Regarding upper secondary education, Lithuania (-0.28%), Romania, Ireland (-0.13%), and Greece (-0.05%) spent a smaller share of GDP on this level of education compared to Bulgaria.

In 2018, two EU countries (Romania and Hungary) had a lower share of GDP allocated to public expenditure on primary and lower secondary education

than Bulgaria. Romania lagged by 0.54 percentage points, and Hungary by 0.31 percentage points. In terms of expenditure on upper secondary education (as a percentage of GDP), Bulgaria ranked ahead of six other countries: Lithuania (-0.37%), Ireland (-0.2%), Romania and Poland (-0.13%), Greece (-0.11%), and Estonia (-0.03%).

In 2021, seven EU countries were more frugal than Bulgaria in terms of public spending on primary (elementary and lower secondary) education as a share of GDP. These countries were Romania (-0.78%), Hungary (-0.49%), Ireland (-0.43%), Croatia (-0.16%), Italy (-0.13%), Latvia (-0.07%), and Lithuania (-0.06%). It should be noted, however, that the differences with some of these countries are rather small. In the same year, 13 EU countries recorded a lower share of GDP spent on upper secondary education. These were Lithuania (-0.53%), Ireland (-0.51%), Estonia (-0.41%), Romania (-0.3%), Hungary (-0.22%), Poland (-0.2%), Germany (-0.17%), Latvia (-0.16%), Luxembourg (-0.14%), Croatia (-0.11%), the Czech Republic (-0.08%), Austria (-0.07%), and Slovakia (-0.02%). The value of this indicator (0.98%) for Bulgaria, Spain, and Slovenia was equal to the EU average.

Therefore, Bulgaria's lag behind the EU average in education spending (as a percentage of GDP) *has been largely overcome (in fact, public expenditure on upper secondary education in Bulgaria in 2021 was equal to the EU average*). Unlike countries such as Belgium, Ireland, Latvia, Lithuania, Hungary, Poland, and others, which reduced their public spending on primary and secondary education during the analyzed period, Bulgaria demonstrated a clear trend toward prioritizing this public service. Another important aspect that should not be underestimated is that students from countries spending less than Bulgaria on school education (as a percentage of GDP) often perform significantly better in tests assessing functional literacy and digital skills. Therefore, *underfunding of primary and secondary education in Bulgaria cannot be defined as the main cause of the unsatisfactory quality of the service*.

3. Learning Personalization – Feasible Evaluation Indicators

Learners in Bulgaria have diverse backgrounds (family, income, ethnicity, language proficiency), learning styles, preferable motivation methods, forms, and tools, and learning pace, making standardized teaching less effective. *Personalized learning* (tailoring lessons, providing individual support, and working with gifted students) yields better results (Campbell et al., 2007; Hughey, 2020; Li & Wong, 2020) but depends on;

- teacher-student ratios, and
- staff availability.

The dynamics of Bulgaria's *student-teacher ratio* between 2015 and 2022 is shown in Table 2. From 15.1 for the primary education and 12.2 for the upper secondary education in 2015, by 2022 the ratio reached 10.4 for primary and lower secondary education and 11.9 for the upper secondary education. In primary education, the indicator shows a clear downward trend over the analyzed period (15.1 in 2015 to 12.6 in 2018 and 10.4 in 2022). At the same time, the ratio of students to teachers and staff in upper secondary education fluctuates (for example, in 2018, compared to three years earlier, there was an increase of 0.8, while in 2022, compared to 2015, there was a decrease of 0.3 percentage points.)

Comparatively, it is worth noting that the average values of the analyzed indicator in the EU *do not differ significantly from those in Bulgaria*. For example, in 2015, the student-to-teacher and staff ratio in the primary and lower secondary education in Bulgaria was 1.2 points higher, while in the upper secondary education it was 0.2 points lower than the EU average. Three years later, the indicator for Bulgaria's primary and lower secondary education was 1.5 points lower, whereas for the upper secondary education it was 1.5 points higher than the EU average. In the final year of the analyzed period, the student-to-teacher ratio in Bulgaria's primary education was 2.1 points lower, while in upper secondary education it was 0.7 points higher compared to the EU average.

Within the EU, the number of students per teacher in primary and lower secondary education is traditionally high in France (17 in 2015; 16.7 in 2018 nd 16.4 in 2022) and the Netherlands (16.4 in 2015; 16.3 in 2018 and 15.7 in 2022). The indicator's values are lower in countries such as Greece, Luxembourg, and Lithuania. However, there is an important nuance - in Greece, the ratio shows a declining trend (9.1 in 2015; 8.7 in 2018 and 8 in 2022). A similar trend is observed in Luxembourg, where the ratio decreased from 10.8 in 2015 to 8.5 in 2022. In contrast, in Lithuania, the indicator's values increased over time — from 8.2 in 2015, to 8.8 in 2018, and 11.6 in 2022.

In upper secondary education, the student-to-teacher and staff ratio is highest in the Netherlands (18 in 2015, 17.6 in 2018, and 16.8 in 2022) and in Finland (16.5 at the beginning of the analyzed period and 17 at the end). The indicator's values are also high in Estonia, reaching 16.2 in 2022. Conversely, the ratio is low in Lithuania (8.1 in 2015, 8 three years later, and 10.2 in 2022), Malta (9.2 in 2015, 7.5 in 2018, and 7.1 in 2022), Croatia (8 in 2022), and Luxembourg (8.5 at the end of the period).

Table 2

Students-to-teachers and staff ratios in the primary/lower secondary (PLS), and upper secondary (US) education in the EU

	2015		2018		2021		2022	
	PLS	**US**	**PLS**	**US**	**PLS**	**US**	**PLS**	**US**
EU – 27	13.9	12.4	14.1	11.5	12.5	11.1	12.5	11.2
Belgium	-	-	11.3	9.6	10.7	7.0	10.8	8.7
Bulgaria	15.1	12.2	12.6	13.0	10.5	12.1	10.4	11.9
Czech Rep.	15.2	11.1	15.7	11.4	14.8	10.4	14.4	10.4
Denmark	11.9	12.1	11.6	11.5	11.5	12.8	11.6	12.7
Germany	14.0	13.0	13.8	12.6	13.5	12.1	13.6	12.0
Estonia	-	15.2	12.1	15.7	11.4	16.2	11.3	16.2
Ireland	-	-	-	-	-	12.4	-	12.3
Greece	9.1	9.1	8.7	9.4	8.0	9.1	8.0	9.3
Spain	13.0	11.1	13.0	10.5	11.7	10.3	11.7	10.1
France	17.0	11.1	16.7	11.2	16.4	11.3	16.4	11.5
Croatia	11.0	9.7	10.4	8.1	9.7	8.2	9.5	8.0
Italy	12.0	12.5	11.3	10.4	10.9	10.1	10.7	10.0
Cyprus	11.5	10.1	11.5	8.6	10.9	8.3	10.9	8.8
Latvia	9.8	9.7	10.7	10.7	11.2	11.8	11.2	12.6
Lithuania	8.2	8.1	8.8	8.0	11.4	9.5	11.6	10.2
Luxembourg	10.8	10.8	9.6	8.6	9.4	9.1	8.5	8.5
Hungary	10.9	11.5	10.6	11.9	10.8	10.2	10.7	11.1
Malta	10.2	9.2	10.1	7.5	9.8	7.0	9.7	7.1
Netherlands	16.4	18.0	16.3	17.6	16.1	17.4	15.7	16.8
Austria	10.0	10.1	9.8	10.1	10.1	10.0	10.2	9.7
Poland	10.6	10.3	10.0	9.6	10.6	11.3	10.6	11.4
Portugal	12.1	9.7	11.1	9.0	10.7	10.5	10.6	9.3
Romania	15.0	14.3	15.0	13.6	14.3	13.6	14.3	13.3
Slovenia	12.4	13.4	10.3	13.7	10.3	13.4	10.3	13.8
Slovakia	13.7	13.5	14.5	13.5	14.6	13.3	14.5	13.7
Finland	11.6	16.5	11.6	18.9	11.2	17.1	11.0	17.0
Sweden	12.7	14.4	12.7	13.6	12.4	13.4	12.3	13.6

Source: Eurostat.

Additional insight into the situation in Bulgaria can be gained through an *analysis of data regarding the number of teaching staff and the number of graduates*. During the 2018/19 school year, the total number of employed teachers in general education schools, vocational schools, and specialized classes was 62,339. This number increased to 65,231 in 2019/20, 67,242 in 2020/21, 67,335 in 2021/22, 67,612 in 2022/23, and reached 68,455 in 2023/24 (see Table 3). In 2018/19, the teaching staff in general education schools alone

numbered 50,846 teachers. Compared to this base year, by the end of the period (2023/24 school year), the number of teachers in the system had risen to 55,850, an increase of 5,004 teachers, or +9.84%. In 2018/19, the number of teachers in vocational schools and specialized classes was 11,493, and by 2023/24, this number had reached 12,605, an increase of 1,112 teachers, or +9.67%. Therefore, over the analyzed period, there is a clear upward trend in the number of individuals directly engaged in teaching within Bulgaria's general and vocational education system.

Table 3

Number of pedagogical staff and graduates in general education schools and vocational schools and classes in Bulgaria

	2018/19	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**
General education schools						
Staff	50 846	53 101	55 554	55 248	55 472	55 850
Graduates	25 815	25 482	25 197	23 241	24 186	-
Vocational schools and classes						
Staff	11 493	12 130	11 688	12 087	12 140	12 605
Graduates	21 588	19 641	17 831	13 192	15 370	-

Source: NSI

The number of graduates from general and vocational schools and classes was 47,403 in the 2018/19 school year, 45,123 in 2019/20; 43,028 in 2020/21; 36,433 in 2021/22; and 39,556 in 2022/23. Compared to the 2018/19 school year, the total number of graduates from general education schools decreased. In 2021/22, the decline compared to the base year was 2,574 students, and in 2022/23, the decrease was 1,629 students (–6.31%). However, it should not be overlooked that in 2022/23, compared to the previous year, the number of general education graduates actually increased by 945 students. The situation regarding the number of graduates from vocational schools and classes is not much different. Compared to 2018/19, the total number of graduates decreased by 1,947 students in 2019/20, 3,757 in 2020/21, 8,396 in 2021/22, and 6,218 over the entire period (–28.8%). Again, it is notable that in 2022/23, compared to the previous year, the number of graduates from vocational schools and classes increased by 2,178 students. Therefore, during the first few years of the analyzed period, there was a clear downward trend in the number of secondary school graduates. In the most recent year for which data are available, however, *this trend reversed, showing a modest recovery*.

The data in Table 3 leads to another important conclusion. In our country, the percentage of graduates from general education schools compared

to the total number of secondary school graduates increased from 54.46% to 63.79% over the analyzed period. This means that the relative share of graduates of vocational schools and classes over the years has shown a *downward trend* (from 45.54% to 36.21%). Despite the decreasing interest in vocational education, the share of teachers employed in vocational schools and classes compared to the total number of teachers in schools remains relatively unchanged - the indicator fluctuates in the range from 17.4% to 18.6%.

In summary, it should be noted that during the analyzed period, Bulgaria *was well positioned* in terms of its ratio of students to teachers and teaching staff in the upper secondary education. As for the indicator relating to the primary and lower secondary education, its values in Bulgaria (with the exception of 2015) were lower than the EU average and this fact is considered positive. The number of teachers and specialists in the secondary education system of our country with is sufficient and this fact is a prerequisite for maintaining and future improvement of the quality of the educational service, including through the personalization of the learning process (however, the age structure of the teaching staff remains problematic). Overall, for the period 2018/19 – 2023/24 academic years, the total number of teaching staff was increasing, while the total number of graduates was decreasing. In order to increase the feasibility of the educational service and in response to the needs of the labor market, it is advisable to strengthen the role and authority of vocational training. From the point of view of the objectives of this study, it should be clearly emphasized that *the students-to-teacher and teachers-to-graduates ratios cannot be considered the underlying cause of the unsatisfactory results* of Bulgarian students in international comparisons (PISA tests, financial and digital competence).

Conclusion

The analysis of the system for financing school education in Bulgaria and of the main indicators regarding the costs and the possibilities for personalization of the educational process gives grounds to draw several more general conclusions. On the one hand, the system for financing primary and secondary education in Bulgaria, although subject to improvement (in terms of objectification of the applied cost standards, directing funds to specific projects with measurable results, strengthening financial incentives for improving the qualifications of teaching staff and managerial skills of the head, improving control), can be deemed to be consistent with the national specifics and oriented towards increasing the authority of the teaching profession. Secondly, primary and secondary education in Bulgaria I by no means underfinanced. The

comparative analysis of public spending on education reveals a positive trend (funds are increasing in absolute volume and as a share of GDP) and supports the thesis for narrowing the gap between the values of these indicators in our country compared to the European average. Another point worth noting is that in Bulgaria, during the studied period, the dynamics of the ratio of teaching staff/graduates and the ratio of students to teachers reveal increasing possibilities for personalization of education. It is logical to conclude that the unsatisfactory quality of school education in Bulgaria (based on international comparisons) is not directly related to our governments' financial policies. The causes should be sought in other, non-economic factors, which are beyond the scope of this study and are related to issues within the competence of the Ministry of Education and Culture rather than the Ministry of Finance.

References

Vitanova, N. (2023). Education of the Future – Theoretical Projections. Annual of Sofia University "St. Kliment Ohridski", Faculty of Educational Studies and the Arts, Book of Educational Studies, Vol. 116 https://fnoi.uni-sofia.bg/magazine/index.php/aes/issue/view/40 (Accessed: 08 May 2025).

Ivanov, I. (2004). Toerii za Obrazovanieto. Shumen: University Publishing House Episcop Konstantin Preslavski. https://www.scribd.com/document/597304494/Teorii-Za-Obrazovanieto-2004 (Accessed: 08 May 2025).

Campbell, R. J., Robinson, W., Neelands, J., Hewston, R. & Mazzoli, L. (2007). Personalised learning: ambiguities in theory and practice. British Journal of Educational Studies, 55(2), 135–154. https://doi.org/10.1111/j.1467-8527.2007.00370.x

Grant, C. (2017). The Contribution of Education to Economic Growth. K4D Helpdesk Report. Brighton, UK: Institute of Development Studies. https://www.ids.ac.uk/publications/the-contribution-of-education-to-economic-growth/ (Accessed: 08 May 2025).

Hanushek, E. & Woessmann, L. (2020). Education, knowledge capital, and economic growth in Bradley, S. & Green, C. (Editors) The Economics of Education (Second Edition), Academic Press, 171-182. ISBN 9780128153918, https://doi.org/10.1016/B978-0-12-815391-8.00014-8.

Hughey, J. (2020). Individual Personalized Learning, Educational Considerations, 46(2). https://doi.org/10.4148/0146-9282.2237

Li, K. C., & Wong, B. T. M. (2020). Features and trends of personalised learning: a review of journal publications from 2001 to 2018. Interactive

Learning Environments, 29(2), 182–195. https://doi.org/10.1080/10494820.2020.1811735
McGrath, S. (2010). The role of education in development: an educationalist's response to some recent work in development economics. Comparative Education, 46(2), 237–253. https://doi.org/10.1080/03050061003775553
OECD (2023). PISA 2022 Results (Volume I): The State of Learning and Equity in Education. PISA, OECD Publishing. https://doi.org/10.1787/53f23881-en.
Ripoll, M. & Cordoba, J. (2006). The Role of Education in Development. MPRA Paper №1864. https://mpra.ub.uni-muenchen.de/1864/ (Accessed: 08 May 2025).
Vutsova, A. & Baltova, A. (2024). Quality of Education and Economic Growth - Evidence from Southeast European Countries. Economic Alternatives, University of National and World Economy, Sofia, Bulgaria, issue 1, 86-98. https://doi.org/10.37075/EA.2024.1.06

Assoc Prof. Lyudmil Naydenov, DSc (Econ) is a member of the Department of Finance of the University of Economics in Varna, Bulgaria. **Scientific interests:** municipal tax policy, budget fiscal rules, efficiency and effectiveness of public spending.

ORCID ID: 0000-0002-9357-1827

ISSN 0323-9004

Economic Archive

Svishtov, Year LXXVIII, Issue 3 - 2025

D. A. TSENOV ACADEMY OF ECONOMICS
SVISHTOV

Икономически архив Година LXXVIII книга 3 - 2025 Year LXXVIII, Issue 3 - 2025 Economic Archive

Editorial address:
2, Emanuil Chakarov street, Svishtov 5250
Prof. Teodora Dimitrova, PhD – Editor-in-Chief
☎ (++359) 631 66 201
Elena Petkova – technical secretary
☎ (++359) 631 66 201, e-mail: nsarhiv@uni-svishtov.bg
Blagovesta Borisova – computer graphic design
☎ (++359) 882 552 516, e-mail: b.borisova@uni-svishtov.bg
Milena Aleksandrova – computer graphic design
☎ (++359) 888 303 402, e-mail: m.aleksandrova@uni-svishtov.bg

ECONOMIC ARCHIVE

YEAR LXXVIII, BOOK 3 – 2025

CONTENTS