Education and Training Monitor 2019

Poland
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Education and Training Monitor 2019

Poland
Volume 2 of the Education and Training Monitor 2019 includes twenty-eight individual country reports. It builds on the most up-to-date quantitative and qualitative evidence to present and assess the main recent and ongoing policy measures in each EU Member State. It therefore complements other sources of information which offer descriptions of national education and training systems.

Section 1 presents a statistical overview of the main education and training indicators. Section 2 briefly identifies the main strengths and challenges of the country’s education and training system. Section 3 focuses on teachers and challenges of teaching profession. Section 4 looks at investment in education and training. Section 5 deals with policies to modernise early childhood and school education. Section 6 discusses measures to modernise higher education. Finally, section 7 covers vocational education and training, while section 8 covers adult learning.
1. Key indicators

<table>
<thead>
<tr>
<th>Education and training 2020 benchmarks</th>
<th>Poland</th>
<th>EU average</th>
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<tbody>
<tr>
<td>Early leavers from education and training (age 18-24)</td>
<td>5.3%</td>
<td>4.8%</td>
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<tr>
<td>Tertiary educational attainment (age 30-34)</td>
<td>32.8%</td>
<td>45.7%</td>
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<table>
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<tr>
<th>Early childhood education and care (from age 4 to starting age of compulsory primary education)</th>
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<td>Proportion of 15 year-olds underachieving in:</td>
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<td>20.5%</td>
<td>17.2%</td>
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<td></td>
<td>13.1%</td>
<td>16.3%</td>
<td>17.7%</td>
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</table>

| Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year) | ISCED 3-8 (total) | 78.4% | 83.1% | 78.3% | 81.6% |
|----------------------------------------------------------------------------------------------------------------------|
| Adult participation in learning (age 25-64) | ISCED 0-8 (total) | 4.7% | 5.7% | 9.5% | 11.1% |
| Learning mobility | Degree-mobile graduates (ISCED 5-8) | : | 1.0% | : | 3.6% |
| Credit-mobile graduates (ISCED 5-8) | : | : | : | 8.0% |

| Other contextual indicators | Public expenditure on education as a percentage of GDP | 5.4% | 4.9% | 5.2% | 4.6% |
|-------------------------------------------------------------------------------------------------------------------|
| Education investment | ISCED 0 | €4 098 | €5 080 | €6 111 |
| Expenditure on public and private institutions per student in € PPS | ISCED 1 | €4 974 | €5 034 | €6 248 |
| | ISCED 2 | €4 885 | €5 136 | €7 243 |
| | ISCED 3-4 | €4 519 | €4 544 | €7 730 |
| | ISCED 5-8 | €6 537 | €7 000 | €10 549 |

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<th>Early leavers from education and training (age 18-24)</th>
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| Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year) | ISCED 3-4 | 68.7% | 77.1% | 72.5% | 76.8% |
|----------------------------------------------------------------------------------------------------------------------------|
| ISCED 5-8 | 85.7% | 88.9% | 83.8% | 85.5% |

Sources: Eurostat; OECD (PISA); Learning mobility figures are calculated by the European Commission’s Joint Research Centre from UOE data. Further information can be found in Annex I and in Volume 1 (ec.europa.eu/education/monitor). Notes: EU averages of 2009 PISA do not cover Cyprus; d = definition differs, u = low reliability, : = not available, 12 = 2012, 14 = 2014, 15 = 2015, 16 = 2016, 17 = 2017.

**Figure 1** Position in relation to strongest and weakest performers

Source: European Commission, Directorate-General for Education, Youth, Culture and Sport (DG EAC) calculations, based on data from Eurostat (LFS 2018, UOE 2017) and OECD (PISA 2015).
2. Highlights

- Early school leaving continues declining; participation in early childhood education and care among children under 3 remains low.
- The higher education reform has been launched, bringing major changes to the functioning of higher education institutions.
- Implementing the 2017 school system changes is causing organisational, financial and curricular challenges. Further challenges relate to teachers’ pay, emerging shortages, and initial and continuing training.
- Participation in adult learning remains low.

3. A focus on teachers

Low salaries make the teaching profession less attractive. Most teachers hold qualifications above the minimum requirements (European Commission/EACEA/Eurydice, 2018). However, the annual basic salary of a starting teacher in purchasing power standards (PPS) is less than half the EU average — EUR 12 091 v EUR 25 246 — and salary progression over the career is comparatively flat (Figure 2). In 2017, secondary level teachers’ average salary was 82% of that of other tertiary-educated employees in Poland (OECD, 2018b). Salaries increased by 5.35% in 2018 and by 5% in January 2019, and an increase by 9.6% is envisaged from September 2019. The proportion of young people interested in becoming teachers dropped by 50% between 2012 and 2015. The Supreme Audit Office found that a high proportion of low-performing secondary school graduates enter teacher education programmes (NIK, 2017) while another recent study shows that fewer than 4% of the best-performing students plan to become teachers. The profession is even less popular among mathematics students (Herbst, 2018). Further evidence that teachers have on average relatively low numeracy skills (compared to other graduate professionals in Poland or to teachers in other countries) is indicated by the PIAAC survey (E. Hanushek, et al., 2018) and a national survey (IBE, 2015). School leaders’ salaries are only marginally higher than those of regular teachers, and also low compared to their counterparts in other EU countries. Research shows that salaries and the availability of other jobs are important factors negatively affecting the attractiveness of teaching (OECD, 2018a).

Teacher shortages are emerging for specific subjects and early childhood education and care (ECEC). In 2017, around a third of Polish teachers at primary and secondary education levels were over 50. The proportion of teachers under 30 is comparatively low in primary schools (8.2% v 11.9% in the EU) and in secondary schools, where it decreased from 9.1% in 2013 to 5.2% in 2017 (EU average: 8.2%). In pre-primary education, 22.6% teachers are below 30, reflecting the recent expansion of ECEC. Three-quarters of teachers at all ISCED levels are women. While there is no shortage of teachers overall, teacher supply is becoming insufficient for mathematics and English, and in pre-schools, particularly in large cities. Recent changes to the school system, the 2019 teachers’ strike outcome, and criticisms in the media, have led to teachers leaving the profession. It may become a challenge to replace retiring or parting teachers.

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1 The 2015 PISA survey indicated that only 2.4% of 15-year olds (v 6% 3 years earlier) wanted to become teachers.
2 The Programme for the International Assessment of Adult Competencies
3 Eurostat, UOE, 2017. Online data code: educ_uoe_perp01
4 See: https://edukacja.warszawa.pl/aktualnosci/21678-praca-szuka-nauczyciela
5 See: https://glos.pl/ankieta-glosu-nauczycielu-czy-zegnasz-sie-ze-szkola
Figure 2 Annual basic gross statutory salaries for full-time teachers in lower secondary public schools, in PPS, 2016/2017

Source: Eurydice, 2018. For clarity’s sake, Luxembourg is not presented.

Measures are being taken to improve initial teacher education. The quality of training programmes varies, and continuing professional development (CPD) does not sufficiently upgrade teachers’ skills (NIK, 2017). Consequently, Poland will introduce new measures:

- from 2019/2020, pre-school and early school education (I-III classes), and special education, will be taught in five-year master’s studies only;
- from 2022/2023, only higher education institutions which conduct research and use the latest scientific developments in the field of teacher education will have the right to train teachers.

Initial teacher education standards and teacher qualifications provisions will be revised. New model curricula for initial education will be developed, with stronger emphasis on practical training and on supporting students with special educational needs (Eurydice, 2019). Teachers indicate high cost and lack of relevant courses as main barriers to their participation in CPD (Hernik K., et al, 2015). School heads report weaknesses in preparing for managerial posts mainly due to lack of appropriate training and high costs. Their main development needs are managerial competences and legal knowledge, and how to obtain additional financial resources for the school.

Tensions between government and teachers continue. Unsatisfactory negotiations between the government and the Polish Teachers’ Union over salaries, and 2018 changes to the Teachers’ Charter led to a nationwide strike launched on 8 April 2019. The strike was suspended until September to allow for final secondary school exams. Changes to the Charter regarding assessment and career progression were partially reversed by new modifications in June 2019. The most urgent challenges relate to salary negotiations and to problems linked to the phase-out of

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6 See: https://konstytucjadalauki.gov.pl/ksztalcenie#studia
7 On 7 April 2019, the government and Solidarność Trade Union agreed on an overall 15% statutory salary increase in 2019, and other measures. The agreement was not signed by the Polish Teachers’ Union.
9 See: https://znp.edu.pl/konczymy-pierwszy-etap-protestu-i-zaczynamy-drug/4
lower-secondary schools\textsuperscript{11}. In the longer term, there is a need to improve the profession’s prestige, initial education and CPD.

Box 1: Teacher education and training programmes supported by the European Social Fund (ESF)

To improve teachers’ skills, Poland developed a model of training schools under the Operational Programme - Knowledge Education Development (OP KED). The pilot project ran from July 2016 to October 2018, with a budget of PLN 4 258 339 (EUR 1 013 890).

The project’s aim is to develop training schools for teachers and students in teacher training programmes using advanced and innovative teaching methods. Training schools should provide a real-work environment and bolster the skills to work with students more effectively. New materials and tools for teachers are to be developed. In 2018, the ‘Supporting the creation of training schools’ project was launched with a budget of PLN 43 127 908.80 (EUR 10 268 550) to create 32 training schools.

In January 2019, under the ‘Teacher education programmes’ national call within OP KED, Poland awarded PLN 47 million (EUR 11.2 million) to 23 projects for higher education institutions to develop teacher education programmes. The projects, aimed at improving future teachers’ competences, will last between 24 and 36 months.

See: https://www.ore.edu.pl/2017/10/o-projekcie/

4. Investing in education and training

Poland continues to invest heavily in education. Poland spent 4.9% of its GDP on education in 2017 (EU average: 4.6%). Education represented 11.9% of the total general government expenditure (EU average: 10.2%). Against the background of continued economic growth over the last decade, education spending has grown significantly: in 2010-2017, public expenditure on education increased in real terms by 8%. The government plans to gradually increase spending on higher education as part of the reform launched in 2018. According to the state budget, in 2019 spending will be almost PLN 18 billion (EUR 4.1 billion), compared to PLN 15.8 billion (EUR 3.6 billion) in 2018. A further PLN 9.8 billion (EUR 2.2 billion) will be spent on science\textsuperscript{12}.

Despite increases in recent years, spending per student is low. In 2016, annual public spending per student in Poland for all ISCED levels remained below the EU average (in PPS): EUR 4 777.7 v the EU average of EUR 6 733\textsuperscript{13}. The gap is narrow for primary education but significant for secondary and tertiary levels despite a 25% increase in expenditure per full-time tertiary student in 2010-2015 (OECD, 2018b).

Poland is investing in information and communications technology infrastructure and digital competences. The Polish Educational Network project (OSE\textsuperscript{14}) envisages the creation of an internet network connecting all Polish schools (about 30 500) by 2020. Schools will be centrally provided with internet access and security services, and free educational content for teachers and students. The capital costs are estimated at PLN 320 million (EUR 76.2 million), which will come from the European Regional Development Fund\textsuperscript{15}; the network’s annual maintenance cost estimated at PLN 164 million (EUR 40 million) will come from the state budget.

\textsuperscript{13} Eurostat, UOE, 2017. Online data code: educ_uoe_fine09 (for the EU average, data is provisional)
\textsuperscript{14} See: https://ose.gov.pl/
5. Modernising early childhood and school education

Participation in early childhood education and care (ECEC) among children over 3 declined slightly in 2017, breaking a long-term trend. In 2017, the participation rate of children aged 4+ in pre-school education in Poland was 91.9%, 1.2 pps lower than in 2016. The drop is likely linked to the obligatory pre-school education for children between 3 and 5 was completed in 2017/2018. Attendance of 3 year-olds increased from 53% in 2013 to 70% in 2016, before declining to 67% in 2017. In 2019, the total state budget subvention for pre-school education increased to PLN 3.1 billion (EUR 756 million) from almost PLN 3 billion (EUR 707 million) in 2018.

Enrolment of children under 3 is increasing slowly and is linked to socio-economic and parental background. Between 2010 and 2017, the ECEC enrolment rate for children under 3 increased by 9.6 pps to 11.6% in 2017 (EU average: 34.2%). Children under 3 are more likely to be enrolled if they come from relatively advantaged socio-economic backgrounds: the enrolment rate is 21% for children with tertiary-educated mothers, but only 3% among those with less well-educated mothers (OECD, 2018b). The Ministry of Family, Labour and Social Policy supports expanding places for children under 3 with a 2019 budget of PLN 450 million (EUR 110 million) under the ‘Toddler+’ programme, launched in 2011 (Eurydice, 2019).

The early school leaving rate is low but regional disparities exist. In 2018, the rate was 4.8%, one of the lowest in the EU (10.6%). Between 2010 and 2018, it decreased overall by 0.6 pps, falling in rural areas by 1.8 pps while increasing by 1.4 pps in towns and suburbs to 5.4%. Regional variations persist: the highest rates are in Warmińsko-Mazurskie, Lubuskie, and Zachodniopomorskie (9.1%-10.7%), and the lowest in Southern Macroregion (below 3%).

Implementing the school system reform is currently the main challenge consuming substantial resources. The change to the two-level school system required the transformation or phasing-out of lower secondary schools: 11.4% of the 665 schools disappeared from the official register in 2017-2018 (NIK, 2019a). During 2019/2020, an additional cohort of students will enter upper secondary schools. This additional cohort is estimated at 370 000 students. Although the Ministry of Education says there are around 100 000 more places in secondary schools available nationally, there is a mismatch between students’ preferences and the school type or location. In January 2019, there was a deficit of 14 873 places for students across eight voivodships (NIK, 2019a). Large cities are experiencing shortages in comprehensive secondary schools. The transformation consumes significant resources which could be used to address other educational challenges (European Commission, 2018). Local governments claim that the actual costs incurred in implementing the reform will be double the allocated ministerial subvention. Primary and secondary schools are reorganising their staff numbers and premises, often operating in shifts. The proportion of teachers working in more than one school increased by almost 55% during 2016-2018, which limited their availability to students and affected class planning (NIK, 2019a). It will be crucial to reach a consensus following two separate consultations on the Polish education system launched by the teaching community and the government.

There will be a need to monitor the impact of the new core curriculum on students’ competences and well-being. From 2016/2017, the compulsory primary school and pre-school entry age was increased to 7 and 6 respectively. Consequently, the common general education period was reduced from 9 to 8 years, which may affect children from disadvantaged backgrounds and rural areas. The Children’s Ombudsman concluded that the new core curriculum is too advanced and may be beyond students’ learning capabilities. This is affecting particularly students in the seventh grade (RPD, 2018). In January 2019, the Ombudsman concluded that homework

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16 Eurostat, UOE, 2017. Online data code: educ_uoe_enra20
17 The impact of the parental leave extension introduced in 2016 was not considered.
19 The reform of lower and upper secondary education was introduced by the Law on School Education in December 2016 for implementation between 1 September 2017 and the school year 2022/23.
22 See: https://www.naradaobywatelska.pl/
23 See: https://www.gov.pl/web/edukacja/okragly-stol-edukacyjny
burdens on pupils were excessive (RPO, 2019). The Supreme Audit Office’s report of 22 May 2019 indicated deficiencies in preparing and implementing the reform, including inconsistencies between specific core curricula (NIK, 2019a). According to recent monitoring controls, learning conditions in 56% of schools have not improved while in 34% of schools they have worsened (e.g. insufficient classroom availability and equipment, poor school infrastructure, overloaded class schedule)\textsuperscript{24}.

**Preparatory activities to improve inclusive education are being continued.** With the assistance of the European Commission’s Structural Reform Support Service, the Ministry of Education is seeking to improve the quality of inclusive education. The European Agency for Special Needs and Inclusive Education will assist the Ministry with recommendations to support new legislation in 2020. During 2019-2021, the ministry will implement projects to improve inclusive education supported by the ESF. Implementation of the 2017 framework on individualised teaching for students with special educational needs still raises doubts among stakeholders. They claim that in practice it reduces the level of integration of such children: they must fully participate in all classes or otherwise follow home-schooling\textsuperscript{25}.

**6. Modernising higher education**

*Poland maintains a high rate of tertiary educational attainment, but the proportion of science, technology, engineering and mathematics (STEM) graduates is low.* In 2018, the higher educational attainment rate was 45.7\%, the same as in 2017, exceeding Europe 2020 national target of 45\% for Poland. The gender gap at 19.2 pps in favour of women is one of the highest in the EU (EU average: 10.1 pps). The number of students has been decreasing steadily, by 36\% over the past 10 years, reflecting demographic trends. Numbers declined by 4.8\% between 2017/2018 and 2018/2019 (Statistics Poland, 2019). The proportion of graduates in STEM fields is 22.9\%. It is particularly low in natural sciences, mathematics and statistics, at 3.6\% — one of the lowest in the EU (Figure 3). Poland’s graduate tracking system (ELA\textsuperscript{26}) shows the good relative employment position of recent tertiary graduates. Graduates in 2017 earned on average 77\% of the average wage (related to the district of living). They also spent around three quarters of their first 12 months after graduation working; 64\% of that was spent under regular labour code employment contracts.

![Figure 3 Distribution of tertiary graduates by STEM fields in 2017, as a proportion of total graduates](image)

Source: Eurostat, UOE, 2017. Online data code: educ_uoe_grad02

\textsuperscript{24} In 2018, the regulation of the Minister of National Education and Sport of December 31, 2002 was amended to strengthen safety and hygienic conditions in schools.

\textsuperscript{25} Krytyka Polityczna, 4.03.2019: https://krytykapolityczna.pl/kraj/w-szkole-nie-ma-dla-ciebie-miejsca/

\textsuperscript{26} See: http://ela.nauka.gov.pl
Higher education institutions (HEI) are preparing to implement the reform. The main aim of the reform is to improve i) the quality of education, ii) scientific achievements and iii) internationalisation. This involves changing the evaluation, management and financing models. HEIs are currently preparing new statutes, which will enter into force from 1 October 2019. To prepare implementation of the reform, there is regular consultation with academia, including through a series of debates (‘NKN Forum’). In February 2019, a task force was established to monitor its implementation. The main changes include the following.

- HEI management will be more centralised at the institutional level and more matters regulated by the HEI statute. The Rector gains capacity to shape policy, and responsibility for financial management and personnel policy.
- Funding to boost teaching and research will be allocated to HEIs at institution level, no longer to faculties.
- Evaluation principles will focus on disciplines and not faculties. Only HEIs, Polish Academy of Science units, or research institutes with a high evaluation can confer doctoral or post-doctoral degrees.
- HEIs will be clearly classified into academic and vocational HEIs. Different kinds of institutions can establish federations.

7. Modernising vocational education and training

The employability of VET graduates is increasing, yet work-based learning is limited. In 2017, nearly 178 000 new students entered VET programmes in Poland, a decrease of 0.7% since 2016, continuing the declining trend since 2013, caused mainly by demographic decline. The proportion of students enrolled in upper secondary VET continued to increase reaching 51.7% in 2017 (EU average: 47.8%). Initial VET students had limited exposure to work-based learning — only 15% of students in VET were enrolled in combined school and work-based programmes in 2017/2018. Practical elements have been strengthened in the new core curriculum. In line with a favourable labour market situation, the employment rate among recent initial VET graduates increased in 2018 to 78.4% (EU average: 79.5%) from 75.2% in 2017.

The VET reform is progressing, focusing mostly on initial VET. Amendments to the Educational Law from November 2018 ensure that local governments receive an increased educational subsidy for students working in targeted jobs. Ministers competent for specific professions will be able to set up and run vocational schools and institutions. From 1 September 2019, the education system will include new vocational education centres in non-school form, based on existing ‘practical training centres’ (CKP) or ‘centres of vocational training’ (ODZ). All VET schools will be obliged to cooperate with employers in relevant sectors.

Measures to support the professional development of teachers in vocational schools are ongoing. Mobility projects for teachers, which are being implemented with support from the ESF and Erasmus+, include work placements in companies, job shadowing and practical training in other countries. A new regulation from February 2019 defines more flexible requirements regarding work experience and pedagogical training for vocational training instructors.

Box 2: Integrated skills strategy for 2030

In January 2019, the government adopted the 'Integrated Skills Strategy 2030 – general part'. A cooperation project with the OECD was then launched, supported by Erasmus+. The project focuses on:

- supporting greater participation of adults in learning;
- reducing skills mismatch in the labour market;
- strengthening the use of skills in the labour market and workplace;
- strengthening coordination and skills management structures.

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27 The Law 2.0 (Ustawa 2.0) of 20 July 2018 came into force on 1 October 2018, replacing all previous legislation in this area.
Challenges, opportunities and recommendations will be defined by area and included in the OECD Report on Skills Strategy: Poland, scheduled for December 2019. On this basis, Poland is to develop a detailed implementation plan building on the Integrated Skills Strategy covering general, vocational and higher education, and adult learning.

8. Developing adult learning

Participation in adult learning is slightly increasing. Only 7.6% of adults in Poland have not acquired an upper-secondary qualification (EU average: 21.9%). The proportion of low-qualified adults in employment is 43.1% (EU average: 56.8%). However, in 2018, only 5.7% of adults aged 25-64 had had a learning experience in the last 4 weeks (EU average: 11.1%), a slight increase compared to 4% in 2017. During 2017, around 16 000 adults over 25 acquired an upper-secondary qualification. Adult learning reaches only a small proportion of the nearly 1.5 million 25-64 year-olds who have a low educational attainment level (including nearly 1 million aged 45-64). In January 2019, the government adopted the general part of the Integrated Skills Strategy: the implementation plan will be developed based on the cooperation with OECD (See Box 2). Implementation of the National Qualification Framework is progressing: additional qualifications have been added to the registry and validation and certification institutions have been selected, but the process faces delays. Policy coordination at national level is improving (the Act on the Integrated Qualification System is implemented in cooperation with different ministries and sectoral skills councils), but not at regional level. In 2019, Poland received a country-specific recommendation from the Council of the EU to ‘Foster quality education and skills relevant to the labour market, especially through adult learning’ (Council of the EU, 2019).

Formal adult education has limited effectiveness, but educators are considered its strength. Formal adult education was heavily criticised by the Supreme Audit Office in 2016 for its limited effectiveness. However, there were only minor concerns about educators’ qualifications in the schools audited, and both learners and the report favourably assessed their competence level.

The quality of training offered to adults needs careful monitoring. The majority of non-formal education in Poland is delivered by private providers functioning as businesses without any specific sectoral regulation or coordination. Additionally, adult educators in the non-formal system are not considered teachers and thus not subject to any qualifications requirements. Some initiatives aim to provide accreditation for training institutions and to verify educators’ competences (e.g. the Database of Development Services28, supported by the ESF).

9. References


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28 See: https://uslugirozwojowe.parp.gov.pl/


Annex I: Key indicator sources

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<td>- Degree-mobile graduates</td>
<td>JRC computation based on Eurostat / UIS / OECD data</td>
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<td>- Credit-mobile graduates</td>
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Annex II: Structure of the education system


Comments and questions on this report are welcome and can be sent by email to:
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Executive summary

Highlights of the cross-national analysis
Highlights of the country analysis
Highlights of the cross-national analysis

Among all factors in the school environment, teachers are considered to have the greatest impact on students’ learning outcomes. At the same time, more than 60% of public expenditure in education in the EU is spent on teachers. Any policy effort seeking to improve educational outcomes – or the efficiency of education and training – is bound to take a close look at the role of teachers and look for ways to help teachers excel in their demanding profession. New evidence from the OECD TALIS survey sheds more light on teachers. The recent survey data inform the 2019 Education and Training Monitor, which contains a dedicated analysis of school teachers in the EU. Being a unique source of information on teachers’ motivations, lifelong learning and careers, the new evidence from TALIS 2018 can help policy-makers harnessing the full potential of teachers by preventing and addressing challenges.

After the teacher-dedicated part, the 2019 Monitor sets to analyse the existing targets adopted by the Council of the European Union under the strategic framework for European cooperation Education and Training 2020 (‘EU benchmarks’). This part of the report presents latest data on participation in early childhood education and care; early leaving from education and training; tertiary educational attainment; underachievement in basic skills; employment rate of recent graduates; adult learning; and learning mobility in higher education. Next, the 2019 Monitor offers analysis on education indicators used in other well-established or emerging priorities, including entrepreneurship education; digital education; multilingualism. The report concludes with a section analysing public investment in education and training.

At the core of learning: the teachers

Across the entire EU, education systems are confronted with a number of challenges relating to teachers. Several countries already face or are about to face shortages of teachers, either across the board or in particular subject areas (typically science, technology, engineering and maths); or in particular geographical areas. In view of the proportions of teachers aged 50 or plus, the 23 EU countries participating in TALIS 2018 will have to renew about one third of their teaching population in the next decade or so. At least five EU countries will have to renew around half of their secondary school teachers in the same period (Italy, Bulgaria, Lithuania, Estonia, Greece and Latvia; and the same applies to primary school teachers in the former three countries).

Successfully renewing the teachers’ population requires acting upon key factors such as the number of students deciding to embark on teacher education, the number of new teachers starting in the job and the number of teachers stopping to work. To address this challenge, there is a need to improve the attractiveness of the profession and offer good working conditions for sustained professional activity.

According to survey data, only 18% of lower secondary school teachers in the EU consider their profession as valued by society; and their proportion lowers with longer years of teaching experience. Similarly, the share of teachers would still choose to work as teachers, declines significantly, in several EU countries, among more experienced teachers. Overall, there is a specific challenge in attracting men into teaching; and particularly so for primary and pre-primary education, where the proportion of female teachers reaches 85% and 96% respectively.

Salaries of teachers do not always compare favourably to salaries of other equally qualified professionals. Among EU countries with available data, in four countries (Czechia, Slovakia, Italy and Hungary) teachers at all education levels earn less than 80% of what other tertiary-educated workers do. In most Member States, primary (and especially pre-primary) teachers earn less than secondary level teachers. In secondary education, teachers’ statutory salary tends to be higher at upper-secondary level than at lower-secondary level.

There are also shortages of teachers with specific profiles. Nearly 40% of principals in lower secondary schools in the EU declare that the shortage of teachers teaching students with special

29 DG EAC calculation on Eurostat’s general government finance statistics, reference year 2017 (gov_10a_exp).
needs hinders the quality of instruction at their school. Principals also point to shortages of teachers who have competences in teaching in a multicultural or multilingual setting (the largest shortages are in France, Italy and Portugal); and competences in teaching students from socio-economically disadvantaged homes (largest shortages in France, Italy, and Portugal). This second type of shortage is driven by change (technology; diversity in classrooms) and points to a need to improve training (initial and continued).

Furthermore, against an evolving technological and demographic background, teachers need new skills more than ever, including for dealing with cultural and linguistic diversity in the classroom, teaching in a technology-rich environment, and adopting collaborative teaching practices. While 92% of teachers report regular participation in professional development, 21% of them declare a further need for training on teaching students with special needs; 16% report a further need for training on the use of information and communication technology (ICT) for teaching; and about 13% report a further need for training in teaching in multilingual and multicultural environments.

Growing participation in education and educational attainment: main achievements in the last decade

In the last decade, the EU experienced a massive increase in tertiary educational attainment and met its target of having at least 40% tertiary graduates in the 30-34 year-old population – up from 32% in 2009. Despite this increase, there are clear patterns of inequalities in educational attainment. For example, on average, women’s tertiary educational attainment (45.8%) is higher than men’s (35.7%) – and the gap has been continuously increasing over recent years. Typically, women complete tertiary education earlier than men do. Also, young adults born in the reporting country or elsewhere in the EU, graduate more than their peers from non-EU countries (41.0% against 35.8% respectively). Yet, an overview of policy measures to broaden tertiary educational attainment shows that less than half of EU countries set specific targets to support participation in higher education of under-represented groups, such as, for example, people with disabilities, migrants or students from disadvantaged background.

The attendance of children from the age of 4 in early childhood education has expanded, and is, by now, almost universal. There are also high rates of participation in early childhood education by children from the age of 3. Yet the 90% participation rate for the general population decreases to 77.8% in the group of children at risk of poverty or social exclusion. Experiencing education in the early years of life has been found to be beneficial for better learning outcomes later on in life, and particularly so for children from socio-economically disadvantaged homes. The challenge of ensuring equal access to education in the early years needs to be addressed.

Since the EU cooperation framework in education and training started in 2009, the proportion of young adults leaving education and training without obtaining at least an upper secondary qualification has considerably reduced. Nonetheless, at EU level this process came to a halt after 2016. Comparing 2016 and 2018, there was progress on this indicator in large countries such as Spain or Poland, as well as in other countries such as Romania, the Netherlands and Portugal. However, this was countered by negative developments in other countries – for example, Italy, Sweden, Denmark, Slovakia, and Estonia (in descending order by size of population). Furthermore, in the past 2 years, early school leaving rates increased for both young adults born in the EU (between 2016 and 2017) and those born outside (between 2017 and 2018). Reducing early leaving remains a priority and a target of the EU, as those who leave education and training before obtaining an upper-secondary diploma will struggle with lower employment rates and lower rates of participation in adult learning.

The main challenge for the next decade: improving learning outcomes at school, and increasing adult participation in learning

Participation in education can be measured by data on enrolments, qualifications, or performance test. The latter show that reducing the number of underachieving 15-year-olds to meet the EU
target of less than 15% by 2020 remains a challenge, particularly for pupils from disadvantaged socio-economic backgrounds. Failing to achieve basic mathematics, reading or science tasks at the age of 15 impacts on individuals’ chances to continue studying, find and maintain employment later in life, cope with fast-paced technological change, and develop as citizens. Between 2012 and 2015, the EU has actually moved further away from meeting this target. Approximately one fifth of pupils in the EU cannot complete basic reading tasks, and the share is slightly higher for science and maths (2015 data). Despite less favourable or sometimes adverse background conditions, around a quarter of socio-economically disadvantaged pupils born in another country are considered academically resilient. Individual factors associated with higher resilience include higher academic expectations, and not repeating grades; while disengagement from school (for example skipping classes, and abusing substances) has a negative association with resilience. At school level, the use of school evaluations, connecting the students’ test results to teachers’ performance, adequate provision of study rooms and being surrounded by pupils with higher socio-economic status are all factors correlating positively with resilience.

Over the years, there has been limited growth in the share of adults participating in education and training during the last 4 weeks in the EU – from 9.5% in 2008 to 11.1% in 2018. In addition, in practically in all EU countries people with little or no qualifications in education – those most in need of access to learning – are the least likely to benefit from it. Age and educational attainment matter when it comes to adult participation in learning. Young adults (25-34) are more than four times more likely to participate in learning as those aged 55-64. Similarly, those with a tertiary degree are more than four times more likely to participate in learning than those holding at most an upper-secondary diploma.

**Developing competences for future life and employment**

Research has long established the positive outcomes of being able to study abroad. Transnational learning mobility is associated with future mobility, higher earnings, and lower risk of unemployment. ‘Making learning mobility a reality for all’ is one of the objectives of the European Education Area. In 2017, 11.6% of higher education graduates ‘were mobile’, meaning that they studied partially or entirely abroad. About 8% of them were abroad for short-term periods, while 3.6% graduated in another country. The Erasmus+ programme supported about half of the short-term study periods spent abroad by EU graduates. Overall, Luxembourg, Cyprus, the Netherlands, and Finland (in descending order) have high shares of mobile graduates. As to inward mobility, capturing the volume of students coming into a country for a period of study, it can be read as a measure of the attractiveness of the education system. On this indicator the United Kingdom leads the way – both in percentage of inward graduates and in absolute numbers.

There are a number of key competences (or combination of knowledge, skills and attitude) that can support an individual’s life chances and also easier transition to the labour market and career job prospects. For example, participation in entrepreneurship education increases the likelihood of engaging in entrepreneurial activities later in life by 35% on average. Of this 35%, a 7 percentage point increase is due to improved self-perceptions by participants of their entrepreneurial skills. However, available data show that participation in entrepreneurship education in the EU is mostly optional, and only a handful of countries make it compulsory.

Furthermore, the potential of digital technologies in improving educational practices is being held up by challenges that education systems still face. To successfully undergo digital transformation, schools need to support teachers’ digital competence for pedagogical use, design innovative pedagogical approaches, and provide digital equipment as well as better connectivity.
building for digital assessment needs to be implemented for learners, teachers, schools and education systems.

Moreover, speaking several languages can increase individuals’ employment prospects. Overall in Europe, between 2005 and 2015, the number of pupils who experienced compulsory language learning grew both in primary and secondary education. As to the former, 83.7% of primary school children learned at least one foreign language in 2014, against 67.3% almost a decade before. At lower secondary level, 59% of pupils learned two languages in school in 2015, against 46.7% in 2005.

After reaching the lowest point in 2013 (75.4%), the employment rate of recent graduates has been continuously increasing in the EU. With 81.6% in 2018, the rate is now close to the pre-crisis 2008 level of 82%. However, some countries still suffer from the effects of the crisis on employability of recent graduates – in particular Greece and Italy, where employment rates of recent graduates are around 55%. As compared to secondary graduates holding a vocational qualification, those with a general orientation qualification have a less easy transition into the labour market (66.3% against 79.5%). The employment rate of tertiary graduates was at 85.5% in 2018.

**Public investment in education**

In 2017, EU Member States invested, on average, 4.6% of their gross domestic product (GDP) in their education systems. This proportion has been slightly but continuously decreasing in the last few years, down from 4.9% in 2014. On average, EU countries spend about one third of their public expenditure for education on pre-primary and primary education; 41% on secondary education; and 15% on tertiary education. Looking at different education sectors, real expenditure on secondary and post-secondary education decreased (-1.3%, between 2016 and 2017) and increased in pre-primary and primary education (+ 1.4%), as well as tertiary education (+ 1.7%). So far trends in education expenditure have been largely independent from demographic developments, with the partial exception of expenditure on tertiary education. Due to the predicted school-age population decline in many EU countries, even constant spending on education is likely to result in an increase in spending per student.
Highlights of the country analysis

**Austria**
To avoid teacher shortages, Austria needs to attract enough students into initial teacher education and improve continuing professional development. Investment in higher education aims to improve the study environment. Improving digital competence is a priority in the education and training system. Discontinued recent reforms may weaken efforts to integrate students with migrant backgrounds and to improve education outcomes of students from a socially disadvantaged background.

**Belgium**
The Flemish Community (BE fl) will implement reforms at all levels of education, including dual learning, starting in September 2019. The French Community (BE fr) will also implement school reforms, starting with changes to governance, then the new extended common curriculum and reforming initial teacher education from September 2020. Education spending in Belgium is among the highest in the EU, but educational outcomes are comparatively low, suggesting room for increased efficiency and effectiveness. To reduce inequality and improve outcomes, teachers need more support to manage diversity in the classroom. Tertiary educational attainment is high but disparities remain between regions and groups.

**Bulgaria**
The modernisation of the education and training system continues while quality, labour market relevance and inclusiveness remain challenging. Demographic trends and rising skill shortages suggest that Bulgaria needs to invest better in the skills of its current and future workforce. The need to upskill and reskill the adult population is high while participation in adult learning is low. The status of the teaching profession is low, and the teacher workforce is ageing. Salaries are being increased as a means to boost the attractiveness of the profession. Steps have been taken to increase the labour market relevance of vocational education and training (VET).

**Croatia**
Pilot implementation of curricular reform and ambitious preparations for full implementation are under way. Reforms are under way in vocational education and training. Participation in early childhood education and care is held back by shortages of teachers and places. Plans to expand the very short average instruction time could help to improve low education outcomes.

**Cyprus**
The teaching profession is highly attractive. Reforms to upgrade it are promising but need to be sustained and expanded. Reforms are implemented to foster high-quality public early childhood education and care. However, provision is insufficient for the early years. Tertiary education attainment has risen further but underutilisation of skills remains a challenge given the specific features of the Cypriot labour market. Measures have been taken to upgrade vocational education and training and adult learning, but attractiveness of both sectors and participation in them remain low.

**Czechia**
Czechia continues to make vocational education and training more relevant to the needs of the jobs market. Authorities are making good use of EU funds to support reforms. Inclusive education is progressing but measures targeted at Roma remain limited. The attractiveness of the teaching profession remains low.

**Denmark**
Changes to university education are making it more flexible and labour market friendly, but the need for more STEM graduates remains. The number of apprenticeships has been increased and measures are being taken to promote adult learning. Reduced education spending is having an impact on schools and universities. There is considerable local variation in the education performance of young people from migrant backgrounds.

**Estonia**
Estonia is developing an education strategy for 2021-2035, aiming to bring gradual changes to the system to respond to changes in the labour market and society. Due to demographic trends and
the limited responsiveness of the education and training system to labour market needs, aligning skills supply and labour demand remains a challenge. The ageing of the teaching population coupled with the low attractiveness of the teaching profession are a long-term challenge for the functioning of the education system. Participation in adult learning has reached a record high but the need for upskilling and reskilling remains high.

**Finland**
While teaching is a prestigious and attractive profession, there are teacher shortages for kindergarten and special needs education. There has been some growth in education inequalities, and spending on education has fallen. New policy measures aim to improve the quality, effectiveness and internationalisation of higher education. Demand for graduates in Information and Communications Technology (ICT) is high and difficult to meet. Implementation of vocational education and training reform is ongoing, and reforms are planned to foster adult learning.

**France**
Work continues on improving educational outcomes and reducing inequalities, with support for teaching staff and funding measures. A new law on education extends the length of compulsory education and training to 3-18. Authorities are faced with the challenge of combining the rapid pace of reforms with the need to consult stakeholders to ensure good ownership and optimal impact. Implementation of the vocational education and training reform is in full swing.

**Germany**
Germany has announced significant investments in digitalisation, higher education and research in the decade ahead, but as well in school education. Germany is preparing for fundamental change in the skills of its workforce by carrying out digital initiatives and by refocusing the system of adult learning. The teaching workforce is aging and Germany faces a challenge to replace a large number of teachers. Young people from disadvantaged socio-economic and/or migrant backgrounds continue to lag behind in educational attainment.

**Greece**
The teaching profession is highly attractive in Greece but opportunities and incentives to improve professionalism are lacking. Education expenditure is lower than in most EU countries and largely spent on salaries. Early school leaving has been further reduced, particularly in rural areas. Finding employment after education remains difficult, including for highly qualified people. Measures to tackle the brain drain of tertiary graduates are being implemented but internationalisation of Greek universities is underdeveloped.

**Hungary**
Recent measures have raised the qualification levels of staff in early childhood education and care. Measures to reduce performance gaps between pupils have been strengthened. Admission conditions for entry to higher education have been made more restrictive. A new medium-term strategy aims to modernise vocational education and training and adult education.

**Ireland**
Ireland has a strong framework to ensure highly qualified teachers and further plans to meet emerging needs, including teacher shortages. Early school leaving has continued to decline, and participation in early childhood education and care is to be supported by new national schemes. Despite increased public spending on education, investment in higher education has not kept up with rising student numbers. Ireland implements initiatives aimed at upskilling and increasing adult participation in learning and training but the numbers of low-skilled adults in the population remain sizeable.

**Italy**
Italy invests well below the EU average in education, particularly in higher education. The share of teachers satisfied with their jobs is among the highest in the EU, but only a small share believe that theirs is a valued profession. Compulsory work-based learning in vocational education and training could help provide more structured training for apprentices and ease the transition from education to work. The level of tertiary educational attainment is low, and the transition from education to work remains difficult, even for highly qualified people.
Latvia
Latvia has already met and exceeded its Europe 2020 education targets. Latvia should achieve further improvements in learning outcomes through the new competence-based curriculum, a stronger individual approach to students at risk and support for inclusion of students with special educational needs. Enrolment in vocational education and training (VET) is increasing and the employment rate of VET graduates is improving, although both remain below the EU average. In higher education, a gradual increase in investment and incremental changes in quality assurance are welcome, but the sector remains fragmented and international competitiveness low.

Lithuania
Current trends in student population and teacher workforce call for a comprehensive strategy to manage teacher supply and demand. Improving key competences and relevant skills remains a priority at all levels. Further development of monitoring and evaluation systems may help improve the quality of education and training. Measures have been put in place to increase the education system’s overall efficiency, but further efforts are needed to ensure their implementation. Policy measures to address low participation in adult learning are lacking.

Luxembourg
In 2018, more flexible entry requirements for the recruitment competition for early childhood and primary education teachers attracted more candidates. Pupils’ performance is heavily influenced by their ability to cope with the trilingual system. A reform of the orientation process at the end of primary education may have stopped a trend whereby many pupils were being guided to the lowest track in secondary education. Employment rates among recent graduates from all types of education are significantly higher than the EU average.

Malta
Work is underway to improve the quality of teaching and the attractiveness of the profession. Improving the quality of investment in education and developing monitoring and assessment are key challenges. Increased participation in early childhood education and care and the new secondary system may help reduce the number of early school leavers. While participation in tertiary education is increasing, its labour market relevance is still a challenge.

Netherlands
The early school leaving rate is below the Europe 2020 national target but has slightly increased. The Netherlands faces an increasing shortage of teachers, both in primary and secondary education. The 2019-2022 Quality Agreements aim to improve the quality of vocational education and training. Dutch tertiary education increasingly attracts foreign students.

Poland
Early school leaving continues declining and participation in early childhood education and care among children under 3 remains low. The higher education reform has been launched, bringing major changes to the functioning of higher education institutions. Implementing the 2017 school system changes is causing organisational, financial and curricular challenges. Further challenges relate to teachers’ pay, emerging shortages, and initial and continuing training. Participation in adult learning remains low.

Portugal
Teachers are satisfied with their jobs, but the ageing teacher population, the high proportion of non-permanent staff and weaknesses in induction and continuing professional development remain challenging. Investment to upgrade infrastructure is insufficient, particularly for early childhood education and care in metropolitan areas. Regional disparities in education outcomes, grade repetition and early school leaving rates are improving. Tertiary educational attainment has grown but business demand for ICT specialists exceeds supply. There is a significant proportion of low qualified adults while participation in adult learning remains low.

Romania
Concrete ideas have been presented for major reform of the education and training system. Clear steps need to be taken for the implementation of the reform. Public spending on education is low in EU comparison, while the sector’s investment needs are high. Any major reform is likely to require additional funding linked to stronger equity and efficiency mechanisms. Better support for teachers – in particular by redesigning initial teacher education and strengthening continuing professional...
development – can help improve quality and equity. Efforts were made to expand dual education. Participation in adult learning remains low despite the high need for upskilling and reskilling.

**Slovakia**
Slovakia is improving early childhood education and care, which is particularly positive for children from deprived families. Slovakia is taking a more strategic approach to lifelong learning, upskilling and reskilling. The early school leaving rate has continued increasing since 2010, approaching 14% in Eastern Slovakia. Investment in education and training is insufficient, and this is reflected in teachers’ still low salaries despite recent increases.

**Slovenia**
Enrolment in early childhood education and care is approaching the EU benchmark. The proportion of Slovenian upper secondary students enrolled in vocational education and training is one of the highest in the EU, and the employment rate of such graduates is high. There are enough new entrant teachers but large numbers are approaching retirement and shortages already exist in certain categories. Tertiary educational attainment is high, but the differences between men and women and the native-born and foreign-born population are large.

**Spain**
The teaching profession is attractive, but working conditions differ among regions and between public and private education systems. Private spending in education is significant, while public spending is static compared to GDP. Planned reforms, reflecting political uncertainties, have been slowed down. The process to modernise vocational education and training is ongoing. Adult participation in education is slowly rising.

**Sweden**
Tertiary educational attainment and graduate employment rates are high. The population’s digital skills are among the best in the EU. There is a serious teacher shortage, and a large number of teachers lack formal qualifications. School segregation and inequality are serious and growing concerns.

**United Kingdom**
Efforts are being made to tackle the high proportion of teachers leaving the profession. In England, school academies are growing in number but many are facing financial pressures. The consequences of Brexit for UK higher education are unclear but policy responses to address the potential loss of EU research funding and reduced student inflows will be needed. England will introduce new qualifications as part of ongoing reforms of upper secondary VET.
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