European Commission

Education and Training Monitor 2017

Germany

Education and Training

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EUROPEAN COMMISSION

Education and Training Monitor 2017

Germany

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Volume 2 of the Education and Training Monitor 2017 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, with a focus on developments since mid-2016. 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 drivers of inequalities in education and measures to promote inclusion, building in particular on evidence from the OECD's 2015 Programme for International Skills Assessment (PISA), as well as recent developments in early school leaving and early childhood education and care. Section 4 looks at investment in education and training. Section 5 deals with policies to modernise school education, covering, inter alia, the teaching profession, digital and language skills. Section 6 discusses measures to modernise higher education. Finally, section 7 covers vocational education and adult learning.

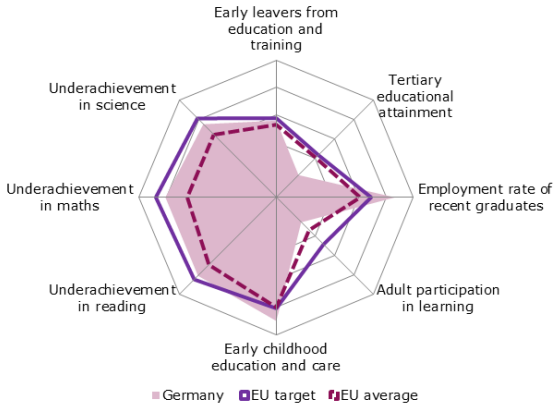
The manuscript was completed on 15 September 2017.
Additional contextual data can be found online (ec.europa.eu/education/monitor)

1. Key indicators

			Germany 2013	Germany 2016	EU average 2013	EU average 2016
ET 2020 benchmarks						
Early leavers from education and training (age 18-24)	Total		9.8%	10.2%	11.9%	10.7%
Tertiary educational attainment (age 30-34)	Total		32.9%	33.2%	37.1%	39.1%
Early childhood education and care (ECEC) (from age 4 to starting age of compulsory education)			96.5% [12]	97.4% [15]	93.9% [12]	94.8% [15]
Proportion of 15 year-olds with underachievement in:	Reading		14.5% [12]	16.2% [15]	17.8% [12]	19.7% [15]
	Maths		17.7% [12]	17.2% [15]	22.1% [12]	22.2% [15]
	Science		12.2% [12]	17.0% [15]	16.6% [12]	20.6% [15]
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-8 (total)		89.7%	90.2%	75.4%	78.2%
Adult participation in learning (age 25-64)	ISCED 0-8 (total)		7.9%	8.5%	10.7%	10.8%
Other contextual indicators						
Education investment	Public expenditure on education as a percentage of GDP		4.3%	4.2% [15]	5.0%	4.9% [15]
	Expenditure on public and private institutions per student in € PPS	ISCED 1-2	€6 826	€7 190 [14]	:	: [14]
		ISCED 3-4	€9 214	€9 529 [14]	:	: [14]
		ISCED 5-8	€12 469	€12 639 [14]	:	: [14]
Early leavers from education and training (age 18-24)	Native-born		8.6%	8.2%	11.0%	9.8%
	Foreign-born		19.5%	23.1%	21.9%	19.7%
Tertiary educational attainment (age 30-34)	Native-born		34.1%	34.0%	37.8%	39.9%
	Foreign-born		28.7%	30.7%	33.4%	35.3%
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4		86.5%	87.8%	69.4%	72.6%
	ISCED 5-8		94.1%	93.1%	80.7%	82.8%
Learning mobility	Inbound graduates mobility (bachelor)		3.3%	3.2% [15]	5.5%	6.0% [15]
	Inbound graduates mobility (master)		10.0%	10.8% [15]	13.6%	15.1% [15]

Sources: Eurostat (see section 9 for more details); OECD (PISA). Notes: data refer to weighted EU average, covering a different numbers of Member States depending on the source; b = break in time series, d = definition differs, e = estimated, p = provisional, u = low reliability, 12 = 2012, 14 = 2014, 15 = 2015. On learning mobility, the EU average is calculated by DG EAC based on available country data in all years. On tertiary education attainment, Germany includes post-secondary education (ISCED 4) in the measurement of progress towards its national Europe 2020 target. Further information is found in the respective section of Volume 1 (ec.europa.eu/education/monitor).

Figure 1. Position in relation to strongest (outer ring) and weakest performers (centre)



Source: DG Education and Culture calculations, based on data from Eurostat (LFS 2016) and OECD (PISA 2015). Note: all scores are set between a maximum (the strongest performers visualised by the outer ring) and a minimum (the weakest performers visualised by the centre of the figure).

2. Highlights

- The performance of 15-year-olds in science, mathematics and reading is stable overall but remains much lower for students with a migrant background. The influence of socioeconomic factors on educational outcomes has decreased but is still important.
- Public spending on education remains below the EU average. Financial planning will be confronted with specific challenges including demographic change, school infrastructure, teacher appointments, integration of refugees and inclusion of special-needs students.
- Participation in early childhood education is almost universal for 4- to 6-year-olds. Improving the supply and quality of early childhood education and care is a priority.
- Substantial efforts have been made to integrate refugees at all levels of education. However, difficulties in allocating them to appropriate schools in some regions exist.
- Enrolment and attainment levels in tertiary education are on the rise.
- Vocational education and training (VET) appears less attractive to young Germans, despite the fact that employment prospects for VET graduates remain very good.

3. Tackling inequalities and promoting inclusion

Educational outcomes are stable overall but vary between different groups. The 2015 OECD Programme for International Student Assessment (PISA) survey shows the proportion of low achievers increased by almost 5 percentage points (pps) in science, by almost 2 pps. in reading and remained almost unchanged in mathematics compared to 2012. A wide performance gap exists between non-migrants (11.8 %) and first-generation migrants (42.2 %): second-generation migrants only partially close the gap (31.1 %) (European Commission 2016a).

The impact of socioeconomic status on performance has decreased but is still significant. The share of top performers in the highest social quartile is above the OECD average in all areas tested, while the share of weak performers in that group is below average. In science, the difference in the rate of low achievers between the lowest and highest social quartiles is 23 pps, equivalent to a difference of almost 3 years of schooling[1]. These results mark an improvement in the equity of the education system since PISA 2006 (OECD 2016b). However, a national survey highlights regional differences within Germany with little progress in lessening the influence of socioeconomic factors on educational success since the first study (IQB 2016).

Early school leaving (ESL) is close to the Europe 2020 target. Germany's ESL rate was 10.2 % in 2016, slightly above the national Europe 2020 target of 10 %, which it had reached in 2013. Foreign-born students are almost three times more likely to leave school early than native students (23.1 % and 8.2 % respectively).

Provision of additional places in early childhood education and care (ECEC) remains a top priority. In 2015, 4- to 6-year-olds' participation in ECEC was 97.4 %[2]. Almost all children from the age of 3 attend childcare facilities while participation in ECEC is markedly lower for under 3-year-olds, especially among socioeconomically disadvantaged and migrant groups, but also in West Germany compared to East Germany (Autorengruppe Bildungsberichterstattung 2016). Legislation passed in April 2017 provides EUR 1.1 billion for 100 000 additional places, in response to the high demand for places for under 3-year-olds, which currently exceeds the supply by approximately 10 %. (Autorengruppe Bildungsberichterstattung 2016).

Measures are being taken to improve the quality of ECEC. In November 2016 the government and the federal states agreed a common strategy to improve ECEC quality and ensure

[1] The difference between mean scores equals 103 score points; a score difference of 38 points is associated with 1 year of schooling.
[2] Eurostat data.

sustainable financing. Common quality standards cover child-staff ratios, staff training and management. A 'quality development law' is under preparation. To further incentivise quality, the government has launched a new prize for ECEC to be awarded from 2018 to five early childhood centres[3].

While the number of newly-arrived migrants has fallen, integrating the large number of young refugees is a long-term challenge. The total number of newly-arrived migrants fell in 2016 to an estimated 280 000 (BAMF 2017b), from over 1 million in 2015. The majority of asylum seekers are under 30, with a considerable proportion aged 0-4[4] (BAMF 2017a). Unaccompanied minors make up a substantial share, with almost 36 000 applying for asylum in 2016. To get refugees into work and education Germany has focused strongly on VET. The Integration Act of 2016 gives refugees easier access to work, vocational training and universities (BAMF 2017c).

Regional differences exist in migrants' access to schooling. The right to schooling is managed differently throughout Germany, ranging from no restrictions regarding legal status to a requirement to be registered with a local authority no later than 6 months after arrival.[5] In some cases, a waiting time of up to 1 year has been reported for refugee children, with unaccompanied minors aged 16 and 17 often not being offered any schooling (FRA 2017). Refugee children who have access to schooling can be put into regular classes right away — in practice usually after introductory courses or coupled with support measures, which eases the transition into mainstream schooling (Koehler 2017).

Getting refugees into education requires additional financial efforts. It is estimated that an extra EUR 316 to 421 million are needed just to provide ECEC to children who arrived in 2015. Similarly, increased funding — between EUR 0.8 and 1.1 billion — will have to be made available for primary and lower secondary schools (Autorengruppe Bildungsberichterstattung 2016). In higher education, the government is spending EUR 100 million on around 450 integration initiatives at 162 institutions, ranging from legal advice to competency assessment, language training and practical support[6]. A dedicated website[7] informs refugees about studying in Germany. A new German Centre for Integration and Migration Research will be created in Berlin by end 2017.

Including special-needs students poses challenges. Inclusive educational practices are increasingly applied in both general and vocational education. In ECEC, 70 % of children with special needs attend mainstream groups (Autorengruppe Bildungsberichterstattung 2016). In primary and secondary education, 38 % of children with special educational needs were in mainstream schools in 2015 against 14 % in 2005, albeit with big regional differences[8]. Children needing learning support represent the biggest group in mainstream schools, followed by those with social and emotional development support needs (KMK 2016c and KMK 2016d). Regional and school-type differences, adequate funding and support for schools and teachers are the main issues in the debate. An opinion poll of teachers in spring 2017, commissioned by the federal union for teachers, identified several shortcomings: in teacher training, permanent provision of special-needs pedagogues, support by multi-professional teams and school buildings with disabled access (Forsa 2017).

4. Investing in education and training

Spending on education remains below the EU average. In 2015 government expenditure on education amounted to 4.2 % of GDP, compared to 4.9 % across the EU[9]. For education and research combined, spending remained at 9.1 % of GDP (Federal Ministry for Economic Affairs and Energy 2017), below Germany's own national investment target of 10 %, to be met by 2015. The

3 http://www.deutscher-kita-preis.de/.
4 78 192 children in that age group or 10.8 % of asylum seekers in 2016.
5 For more detailed information see: http://landkarte-kinderrechte.de/
6 https://www.bmbf.de/de/hochschulprogramme-fuer-fluechtlinge-verlaengert-3425.html.
7 https://www.study-in.de/refugees/.
8 https://www.aktion-mensch.de/themen-informieren-und-diskutieren/bildung/zahlen-und-fakten.html.
9 Complete comparability of public education expenditure can however not be achieved because of the different organisation of work-based components in VET in different Member States, where (private) expenditure by companies in Germany is considerable.

education proportion of total government expenditure stood at 9.6 % while the EU average was 10.3 % in 2015. In terms of expenditure per student Germany improved slightly, ranking seventh in the EU[10]. The need to increase public investment in education was addressed in a country-specific recommendation to Germany in 2017 European Semester (Council of the European Union 2017)[11].

New distribution of funding and responsibilities will support schools. In June 2017 constitutional changes entered into force which reorganised financial relations between the central government and federal states. From 2020 the government will provide the states with support of almost EUR 10 billion per year. In the education sector, support by the central government will focus on investments in school infrastructure in financially weak municipalities (Federal Ministry for Economic Affairs and Energy 2017).

Germany's population is on the rise. After years of demographic decline, Germany's population is growing again, reflecting both a higher fertility rate and the arrival of migrants. Eurostat projections based on 2015 population figures[12] show clear growth patterns even without taking into account the most recent large migrant inflows which reinforce the upward trend.

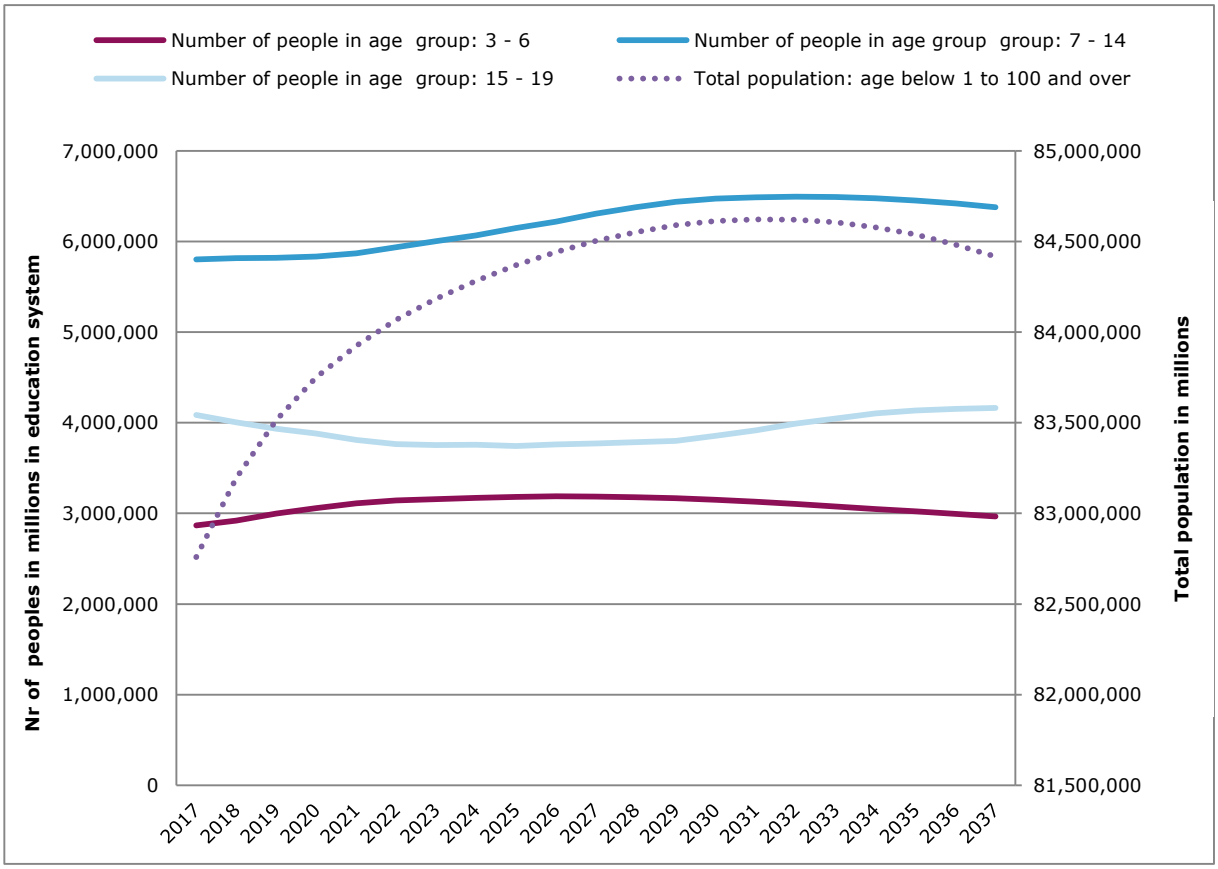
The population increase poses challenges for the education sector. For the lower age groups which impact on pre-primary, primary and lower-secondary education, growth of between 8 and 10 % is expected over the next 10 years. Based on 2015 projections, the number of those aged 15-19 potentially entering VET, post-secondary and tertiary education is estimated to shrink by 8 %. However, in 20 years' time numbers will exceed current levels. Taking into account the recently arrived refugees, this may happen even earlier. Demographic change poses significant challenges for the education system. Additional expenditure for school buildings and teachers could amount to EUR 4.7 billion annually (Klemm; Zorn 2017). Of particular concern are significant regional disparities: western Germany is seeing increasing numbers of primary school students and slightly decreasing numbers of upper secondary students, while in eastern Germany the situation is reversed.

10 Eurostat data 2014, all in PPS. With an amount of EUR 8 616 for ISCED levels 2-8 DE comes after LU, AU, UK, SE, NL, BE.

11 The text reads *'Accelerate public investment at all levels of government, especially in education, research and innovation, and address capacity and planning constraints for infrastructure investments'. See* http://data.consilium.europa.eu/doc/document/ST-9296-2017-INIT/en/pdf.

12 Population on 1 January 2015.

Figure 2. Population projection in Germany for different age groups (2017-2037)



Source: Eurostat (Population projection 2017-2040). Online data code: proj_15npms

5. Modernising school education

The longer duration of upper secondary education has been restored in two more federal states. The reform of 2004/2005 on the duration of *Gymnasium* education shortened secondary education from 9 to 8 years. This reduced the school leaving age from 19 to 18 and brought Germany closer to international norms. Since then, however, parental and teacher criticism of student stress and loss of education quality have triggered a gradual reversal of the reform. Two more federal states, North-Rhine Westphalia and Bavaria, are preparing to re-introduce the longer duration. The revision reinstates differences in schooling time especially between western and eastern states, which retain the 8-year programme.

All-day schools have been expanded but significant regional and school-type differences exist. To improve learning conditions and to support better work-life balance, Germany has continuously increased the proportion of all-day education offers in various types of schools since 2002. Yet regional differences range from 97.4 % of schools in Saxony to 35.8 % in Bavaria. Almost 40 % of all pupils participated in all-day schools at end-2015, most in the so-called open structure, where afternoon attendance is voluntary (KMK 2016a). Integrated forms with compulsory afternoon programmes are implemented with big regional differences and are criticised for their insufficient additional instruction time, financial support and personnel (Klemm; Zorn 2016).

Digital competences will be strengthened. The level of digital skills among Germans has constantly increased over recent years, especially among young people. While 67.5 % of all Germans possess basic digital skills, 87.6 % of those aged 16-24 do so (European Commission

2017)[13]. As part of a comprehensive digital policy (see box 1), the federal states adopted a strategy on 'Education in the digital world' in December 2016. This contains binding actions and concrete targets to adapt curricula, learning environments, learning processes and teacher training to digital change (KMK 2016b).

Renewing and diversifying the teaching force pose challenges. Teachers in Germany, at both primary and secondary levels, are on average among the oldest in the EU. 45 % are aged 50 or above, compared to 35 % in the rest of the EU. The necessary replacement of retired teachers has already led to supply gaps in some regions (KMK 2013). To solve the problem, more and more career changers are being accepted into the profession, often without prior pedagogical training but with tailored accompanying support after they take up teaching[14]. Shortages in specific subject areas pose a substantial challenge (KMK 2013). Students with a migrant background are less likely to become teachers: only 6 % of them opt for a teaching career compared to 12 % of non-migrant students (European Commission 2016b).

Box 1: Digital change in education

Several education initiatives are under way as part of the 'Digital agenda'. This was adopted by the federal government in 2014 to formulate strategic goals for digital change across all societal areas and to serve as a platform for comment and exchange with citizens.

The Ministry of Education and Research presented its digital strategy in October 2016, which includes the DigitalPakt#D*. This ties the offer to invest EUR 5 billion over 5 years in digital infrastructures for general and professional schools to the commitment by the states to put digital education into practice[15]. To further boost digital skills among young people, a 'Youth Informatics Competition' was launched for school students of all ages. This will complement the existing basic informatics certificate for children and the ambitious federal competition in informatics.*

In the VET sector, the federal government has started the Berufsbildung 4.0 which aims: to identify the impact of digital change on qualification requirements and - if necessary - develop recommendations for regulatory action; to support inter-company vocational training centres in the procurement of digital equipment, machines, facilities and software; and to fund innovative approaches for the use of digital media in VET.

To support digital change with research, the government will establish an internet institute in Berlin based on a consortium of five universities and two research institutes. Its mandate is to conduct interdisciplinary research on the ethical, legal, economic and social aspects of the internet and digitalisation. In addition, the Einstein Center Digital Future, a public-private partnership also located in Berlin, will create 50 professorships in the field of digitalisation to foster innovative, interdisciplinary research.

https://www.digitale-agenda.de/Webs/DA/DE/Handlungsfelder/5_BildungForschung/bildung-forschung_node.html

13 See DESI key indicators analysis.

14 Estimates find that this concern up to 10 % of all teachers hired in 2016, and in some federal states as much as one third of newly hired primary teachers (http://www.bdk-gymnasien.de/entschliessungen-pressemitteilungen/pressemitteilung-der-bdk-zur-lehrerversorgung-an-den-deutschen-schulen.html).

15 https://www.bmbf.de/pub/Bildungsoffensive_fuer_die_digitale_Wissensgesellschaft.pdf.

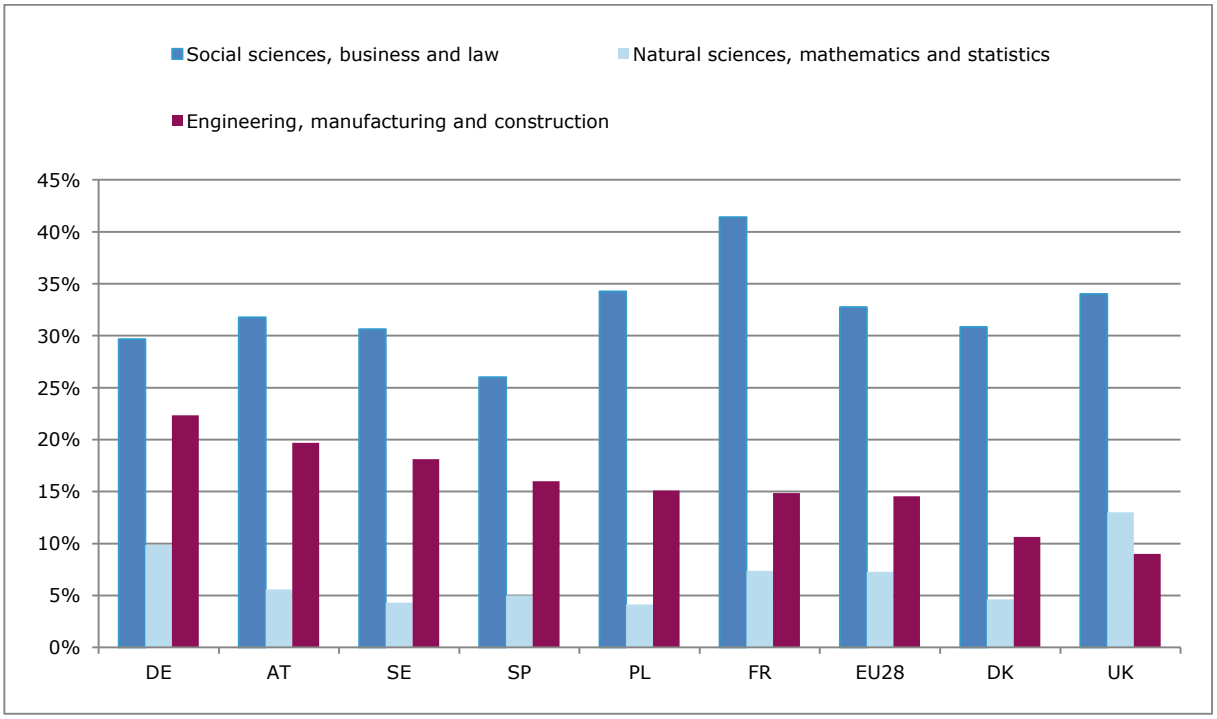
6. Modernising higher education

University education is becoming more widespread but is more difficult to accomplish for students with a migrant background. The rate of people obtaining a tertiary degree has more than doubled since 2000, reaching 33.2 % in 2016. This is still below the Europe 2020 target of 40%.[16]. There is no difference in attainment rate between men (33.4 %) and women (33 %) and only a marginal difference for foreign-born students (-3.3 pps). However, students with a migrant background face much bigger hurdles to complete their studies: they experience dropout rates of 43 % versus 29 % for the non-migrant student population (Ebert; Heublein 2017).

Higher education is closely linked to social background and faces changing demands. Upward mobility, i.e. young people earning tertiary degrees whose parents attained lower levels of education, is lower in Germany than the OECD average. This might be partially explained by the traditionally strong prevalence of VET (OECD 2016a). While the growing number of entrants into higher education (at the expense of VET education) is not universally considered a positive development (some dismiss it as an 'academisation craze'), higher education itself is changing. More and more institutions offer practical experience during studies to meet students' clear and growing preference in this regard (BMBF 2017b).

Germany has the EU's highest share of graduates in engineering, manufacturing and construction. At 22 %, Germany has more graduates in this field than any other Member State, well above the EU average of 15 % (see figure 3). Germany is also above the EU average for graduates in natural sciences, mathematics and statistics[17]. Over-qualification of university graduates relative to the jobs they hold is lower than in most EU member states. Nevertheless, almost one fifth of university graduates are in jobs that require skills below their education level (European Commission 2017).

Figure 3. Graduates by field of studies in 2015



Source: Eurostat (UOE, 2015). Online data code: *edic_uoe_grad02.*

16 The national target of 42%, which includes ISCED level 4 qualifications, has however been passed and has now reached 46.8 % (Federal Ministry for Economic Affairs and Energy, 2017).

17 Eurostat data 2015.

Supplementary financial support for excellent research and teaching has been extended. The Excellence Initiative which supports top-level research at universities will from 2018 provide EUR 533 million annually for 'excellence clusters' and 'excellence universities'. In addition, the Quality Pact on Teaching in Higher Education, established in 2010 with a budget of EUR 2 billion over 10 years, will be continued until 2020 with higher education institutions receiving EUR 820 million in additional funds for a range of measures. These include training for university staff coupled with special incentives for teaching commitment, conferences and workshops on best practices and networking (Federal Ministry for Economic Affairs and Energy 2017).

The quality assurance system in German higher education is being reorganised. In February 2016 large parts of the accreditation system were ruled unconstitutional[18]. Consequently, state education ministers presented a draft treaty between the federal and state levels which redefines the distribution of tasks and responsibilities[19]. One of the main innovations in the planned system concerns the future role of (private) accreditation agencies. They will undertake programme and quality management systems' evaluations and propose decisions to the (state-funded) Accreditation Council, which has the final say. It is envisaged that the treaty will come into force at the end of 2017.

7. Modernising vocational education and training and promoting adult learning

Employment rates for VET graduates continue to be high but fewer people are choosing this education path. The proportion of Germany's upper secondary students (ISCED 3) who are in VET slightly decreased in 2015 to 46.8 %, just below the EU average of 47.3 %. The employment rate of recent VET graduates in 2016, at 90.1 %, was markedly higher than the EU average of 75 %.

Despite its long and successful tradition, participation in VET is decreasing. In 2016, the number of unfilled apprenticeship positions reached a new record high of 43 500. At the same time 20 600 applicants did not find a suitable apprenticeship, pointing to a significant mismatch in qualifications and at sectoral and regional levels (BMBF 2017a). One factor behind this is the reduced number of small businesses offering vocational training. This is mostly due to a lack of suitable candidates in the past as well as the lower number of young people and their increased preference for tertiary education. Regarding young refugees, most are still in preparatory programmes or have just recently started an apprenticeship.

Several measures are being implemented to increase the attractiveness of VET. Extensive efforts are being made to better advertise the VET system. These involve in particular orientation and information campaigns at secondary schools (see also box 2), measures to attract higher education dropouts and improvements in VET training, for example, by placing a stronger focus on trainees gaining experience abroad.

Adult learning is below the EU average and needs to focus on the low-skilled. Adult participation in learning remained at 8.5 % in 2016, practically unchanged and below the EU average of 10.8 %. A major challenge lies in drawing in the low-skilled and unskilled, the long-term unemployed and older people. In Germany 7.5 million adults — many of them in employment — lack basic reading and writing skills (Grotlüschen 2016). The national decade for literacy and basic education was launched in November 2016 to improve literacy of low-skilled individuals and promoting basic skills. The Federal Ministry of Education and Research is investing EUR 180 million in it. Legislation on continuous professional training in force since August 2016 is to improve access for the low-skilled and long-term unemployed to a continuing vocational education and training (CVET) qualification. Since 2016 a new 'upward mobility student loan' for job-related VET gives financial support to those preparing for more than 700 types of qualifications, regardless of age.

18 Decision: 1 BvL 8/10.

19 https://www.kmk.org/aktuelles/artikelansicht/akkreditierungsstaatsvertrag-der-kmk-sichert-groesstmoegliche-qualitaet-von-studiengaengen-und-mobilitaet-fuer-studierende.html.

Box 2: ESF project to facilitate transition into labour market

The Berufseinstiegsbegleiter (BerEB) — 'career start coaches' — *programme helps young people who are expected to have difficulty obtaining a lower secondary school degree (*Hauptschulabschluss*) to get into vocational education and training.*

Coaches support students individually and continuously to help them attain a school leaving degree, get orientation for their choice of job profile and start vocational training. Measures start up to 2 years before leaving school and continue for up to 6 months after the start of vocational training, and in difficult cases even up to 24 months.

The programme, which runs until 2022, has funding of EUR 1 million, of which 50 % comes from the European Social Fund. Between 2014 and 2019 the programme aims to support roughly 113 000 participants at 3 000 schools.

http://www.esf.de/portal/DE/Foerderperiode-2014-2020/ESF-Programme/bmas/2014-11-17-Berufseinstiegsbegleitung.html

8. References

Autorengruppe Bildungsberichterstattung (2016), *Bildung in Deutschland 2016, Ein indikatorengestützter Bericht mit einer Analyse zu Bildung und Migration*.
http://www.bildungsbericht.de/de/bildungsberichte-seit-2006/bildungsbericht-2016/pdf-bildungsbericht-2016/bildungsbericht-2016

Council of the European Union (2017), *Council Recommendation on the 2017 National Reform Programme of Germany and delivering a Council opinion on the 2017 Stability Programme of Germany.*
http://data.consilium.europa.eu/doc/document/ST-9296-2017-INIT/en/pdf

Ebert, Julia; Heublein, Ulrich (2017), *Ursachen des Studienabbruchs bei Studierenden mit Migrationshintergrund*.
https://www.stiftung-mercator.de/de/publikation/ursachen-des-studienabbruchs-bei-studierenden-mit-migrationshintergrund-zentrale-ergebnisse/

European Union Agency for Fundamental Rights (FRA, 2017), *Current migration situation in the EU: Education*.
http://fra.europa.eu/en/publication/2017/current-migration-situation-eu-education

European Commission (2016a), *PISA 2015, EU performance and initial conclusions regarding education policies in Europe*.
https://ec.europa.eu/education/sites/education/files/pisa-2015-eu-policy-note_en.pdf

European Commission (2016b), *Study on the diversity within the teaching profession with a particular focus on migrant and/or minority background*.
http://ec.europa.eu/dgs/education_culture/repository/education/library/study/2016/teacher-diversity_en.pdf

European Commission (2017), Cedefop, *Skills panorama*.
http://skillspanorama.cedefop.europa.eu/en/countries/germany

Federal Ministry for Economic Affairs and Energy (2017), *Nationales Reformprogramm 2017*.
https://ec.europa.eu/info/sites/info/files/2017-european-semester-national-reform-programme-germany-de.pdf

Federal Ministry of Education and Research, BMBF (2017a), *Berufsbildungsbericht 2016*.
https://www.bmbf.de/pub/Berufsbildungsbericht_2016.pdf

Federal Ministry of Education and Research, BMBF (2017b), *Die wirtschaftliche und soziale Lage der Studierenden in Deutschland 2016*.
https://www.bmbf.de/pub/21._Sozialerhebung_2016_Hauptbericht.pdf

Federal Office for Migration and Refugees, BAMF (2017a), *Das Bundesamt in Zahlen 2016, Asyl*.
http://www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Broschueren/bundesamt-in-zahlen-2016-asyl.pdf?__blob=publicationFile

Federal Office for Migration and Refugees, BAMF (2017b), *Schlüsselzahlen Asyl 2016*.
http://www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Flyer/flyer-schluesselzahlen-asyl-2016.pdf?__blob=publicationFile

Federal Office for Migration and Refugees, BAMF (2017c), *Migration, Integration, Asylum*.
http://www.bamf.de/SharedDocs/Anlagen/EN/Publikationen/EMN/Politikberichte/emn-politikbericht-2016-germany.pdf?__blob=publicationFile

Forsa (2017), *Inklusion an Schulen aus Sicht der Lehrkräfte in Deutschland — Meinungen, Einstellungen und Erfahrungen Ergebnisse einer repräsentativen Lehrerbefragung*.
http://www.vbe.de/index.php?eID=tx_nawsecuredl&u=0&g=0&t=1501145301&hash=cf210a8fefa003dfcac6c1b97c5f2bb150ba95f7&file=fileadmin/vbe-pressetermine/2017-05-22_forsa-Inklusion_Text_Bund.pdf

Grotlüschen, Anke (2016), *UNESCO country profiles of formal and nonformal adult education opportunities in literacy, numeracy and other skills: Germany, Paper commissioned for the Global Education Monitoring Report 2016, Education for people and planet: Creating sustainable futures for all*.
http://unesdoc.unesco.org/images/0024/002475/247583e.pdf

Klemm, Klaus; Zorn, Dirk (2016), *Die landesseitige Ausstattung gebundener Ganztagsschulen mit personellen Ressourcen. Ein Bundesländervergleich*.
https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/IB_Studie_Die_landesseitige_Ausstattung_gebundener_Ganztagsschulen_mit_personellen_Ressourcen.pdf

Klemm, Klaus; Zorn, Dirk (2017), *Demographische Rendite adé, Aktuelle Bevölkerungsentwicklung und Folgen für die allgemeinbildenden Schulen*.
http://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/Demographische_Rendite_ade___final.pdf

Koehler, Claudia (2017), *Continuity of learning for newly arrived refugee children in Europe*.
http://nesetweb.eu/wp-content/uploads/2016/02/Refugee-children.pdf

Standing Conference of the Ministers of Education and Cultural Affairs, KMK (2013), *Lehrereinstellungsbedarf- und angebot in der Bundesrepublik Deutschland. Modellrechnung 2012-2025*.
http://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Dok_201_LEB_LEA_2013.pdf

Standing Conference of the Ministers of Education and Cultural Affairs, KMK (2016a), *Allgemeinbildende Schulen in Ganztagsform in den Ländern in der Bundesrepublik Deutschland, Statistik 2011 bis 2015.*
https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/GTS_2015_Bericht.pdf

Standing Conference of the Ministers of Education and Cultural Affairs, KMK (2016b), *Bildung in der digitalen Welt.*
https://www.kmk.org/fileadmin/Dateien/veroeffentlichungen_beschluesse/2016/2016_12_08-Bildung-in-der-digitalen-Welt.pdf

Standing Conference of the Ministers of Education and Cultural Affairs, KMK (2016c), *Sonderpädagogische Förderung in allgemeinen Schulen (ohne Förderschulen) 2015/2016*. https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Aus_SoPae_Int_2015.pdf

Standing Conference of the Ministers of Education and Cultural Affairs, KMK (2016d), *Sonderpädagogische Förderung in Schulen 2005 bis 2014*. https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Dok_210_SoPae_2014.pdf

Institute for Educational Quality Improvement, IQB (2016), *IQB-Bildungstrend 2015*. https://www.iqb.hu-berlin.de/bt/BT2015/Bericht

OECD (2016a), *Education at a Glance 2016: OECD Indicators*. http://dx.doi.org/10.1787/eag-2016-en

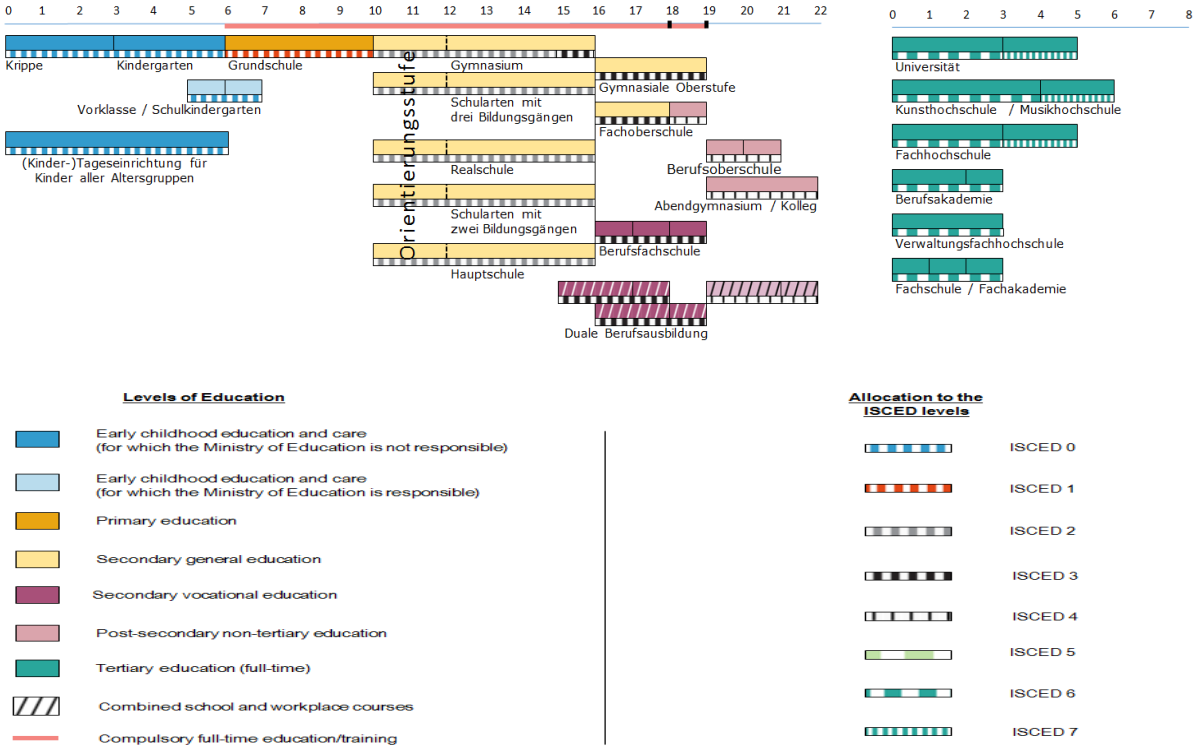
OECD (2016b), *PISA 2015, Country Note Germany*. http://www.oecd.org/pisa/pisa-2015-Germany.pdf

Vienna Institute of Demography and International Institute for Applied Systems Analysis, VID (2016), *European Demographic Datasheet 2016.* http://www.populationeurope.org/

9. Annex I. Key indicator sources

Indicator	Eurostat online data code
Early leavers from education and training	edat_lfse_02 + edat_lfse_14
Tertiary educational attainment	edat_lfse_03 + edat_lfs_9912
Early childhood education and care	educ_uoe_enra10 + tps00179
Employment rate of recent graduates	edat_lfse_24
Adult participation in learning	trng_lfse_03
Public expenditure on education as a percentage of GDP	gov_10a_exp
Expenditure on public and private institutions per student	educ_uoe_fini04
Learning mobility	educ_uoe_mobg03

10. Annex II. The structure of the education system



Source: European Commission/EACEA/Eurydice, 2016. *The Structure of the European Education Systems 2016/17: Schematic Diagrams.* Eurydice Facts and Figures. Luxembourg: Publications Office of the European Union.

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