



Germany

Education for All 2015 National Review

This report was prepared by the relevant national authorities in view of the World Education Forum (Incheon, Republic of Korea, 19-22 May 2015). It was submitted in response to UNESCO's invitation to its Member States to assess progress made since 2000 towards achieving Education for All (EFA).

The views and opinions expressed in this document are those of the authors and do not commit UNESCO. The designations employed and the presentation of material do not imply the expression of any opinion whatsoever on the part of UNESCO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The paper can be cited with the following reference: "Education for All 2015 National Review Report: Germany". For further information, please contact: efa2015reviews@unesco.org

Report on advances in the German education system with regard to the goals of “Education for All”

Kai Maaz, Stefan Kühne, Martin Baethge & Marko Neumann

Berlin, March 2015

Content

Section 1 – Introduction 3

Section 2 – Challenges faced by the education system at the turn of the millennium
and the associated key goals by the year 2015 4

Section 3 – Education policy measures to achieve the EFA goals 9

Section 4 – Advances in the EFA goal areas 12

 Goal 1 – Expanding early childhood care and education 12

 Goal 2 – Universalising primary/basic education 15

 Goal 3 – Meeting the learning needs of young people and adults 18

 Goal 4 – Improving adult literacy 21

 Goal 5 – Gender parity and equality in education 24

 Goal 6 – Quality of education 26

Section 5 – Future challenges 28

Bibliography..... 31

Annex 33

Section 1

Introduction

Through the Dakar Framework for Action “Education for All” (EFA) adopted at the World Education Forum in Dakar in 2000, Germany, together with most other countries in the world, pledged to meet six education goals (EFA goals) by 2015. This paper provides an overview of the related developments in this respect in Germany in the past 10 to 15 years.

To this end, the paper first presents the starting situation at the beginning of the millennium, outlining the major challenges and education goals which were particularly relevant to Germany at the turn of the millennium (*Section 2*). This is followed by a short overview of key education-related reform measures which have been implemented or initiated in Germany in recent years to meet the existing challenges (*Section 3*). *Section 4* describes the development of selected EFA-related education indicators. This is guided largely by the indicators proposed in the Guidelines for producing the national EFA-2015 Reviews. The paper reports mainly on indicators which were also the subject of Germany’s most recent national educational reporting (see Authoring Group Educational Reporting, 2014). Finally, the paper outlines the ongoing challenges faced by Germany now and in the coming years in achieving the EFA goals (*Section 5*).

Section 2

Challenges faced by the education system at the turn of the millennium and the associated key goals by the year 2015

After critical discussions of the state of the German education system and its expansion in the 1960s and 1970s, public and academic debate noticeably tailed off in the following years. In the course of Germany's educational expansion there was a clear development of the education system which led in the main to broad participation in education. A range of measures were designed to open up educational tracks and help more students from socially less advantaged families obtain higher educational certificates. Examples include the development of the higher education sector and the associated founding of the *Fachhochschulen* (universities of applied sciences), or the establishment of *Gesamtschulen* (comprehensive schools) in the general education sector. The expansion of education was connected to hopes that the quantitative development of the education system could help achieve two desiderata: first, closing the skills gap (Picht, 1964) found in relation to other European countries, which referred not only to the distribution of students among the different school types and the related low share of *Abitur* holders (i.e. the entrance qualification to higher education), but also to a shortfall in the level of competence of students. And second, reducing the social inequalities in participation in higher education, as pointed out in a number of studies (Dahrendorf, 1965a; Grimm, 1966; Peisert & Dahrendorf, 1967). Although there were clear indications of the need for educational action, which were pointed to in a range of empirical studies (Handl, 1985; Ditton, 1992; Köhler, 1992; Meulemann, 1992; Blossfeld & Shavit, 1993) and not least the TIMS Study (Baumert & Bos, 2000, 2000b), at the turn of the millennium Germany considered itself to be on the right path on the whole, both in terms of the level of education and also in relation to the extent of social inequalities in educational attainment and success. The results of the first PISA study marked a turning point in the perception of the German education system. Education moved to the centre of public debate. The findings from PISA pointed directly or indirectly to a range of central challenges which were the starting point for varied education policy discussions and reforms, and also led to lively research activity in the field of empirical educational research:

- (1) the, by international standards, rather poor competences of 15-year-olds in the key domains reading literacy, mathematics and natural sciences;
- (2) a, by international standards, excessively high proportion of students who, given their low competence levels, may be described as a risk group and might encounter problems transitioning into training which qualifies for entry into a profession;
- (3) the, by international standards, especially strong correlation between students' family background and their competence levels;
- (4) the long-known social and migration-related disparities in participation in the different educational tracks and secondary-level school types, which have again been a particular focus since PISA 2000;
- (5) the low permeability of the German education system;
- (6) the lack of broad access to good quality pre-school programmes;
- (7) the organisation of the transition into tertiary education with the aim of increasing the graduation rate in the tertiary education sector;
- (8) the transition into a vocational training course leading to a qualification, particularly for the so-called "risk group";

- (9) demographic change and its importance to the education system;
- (10) the fundamental shift in the social value of education.

The above challenges are discussed in more detail below.

(1) The, by international standards, rather poor competences of 15-year-olds in the key domains reading literacy, mathematics and natural sciences

The focus of the first PISA study was on reading literacy. According to PISA, reading literacy is a key prerequisite for the initial and further development of one's own knowledge and capabilities, and therefore a prerequisite for participating in society (see Artelt, Stanat, Schneider & Schiefele, 2001). The domains mathematics and natural sciences were also tested. The results of the competence levels published in December 2001 received great public attention. The average reading literacy of 15 year-olds was significantly below the OECD average. Levels were around one-half of a standard deviation below international leaders (e.g. Finland and Canada), and therefore fell substantially short. While average competence levels were thus below the international average, the distribution of performance levels in Germany was the largest by international standards. In the other test domains (basic education in mathematics and natural sciences) too, the results for German 15 year olds were significantly below the OECD average (Klieme, Neubrand & Lüdtke, 2001; Prenzel, Rost, Senkbeil, Häußler & Klopp, 2001).

(2) A, by international standards, excessively high proportion of students who, given their low competence levels, may be described as a risk group and who might encounter problems transitioning into training which qualifies for entry into a profession

By defining proficiency levels and describing them in terms of content at the level of domain-specific cognitive operations, PISA 2000 also resulted in the identification of risk groups. The authors who introduced the term "risk group" did so extremely cautiously (Artelt et al., 2001; Baumert & Schümer, 2001). Students are described as belonging to a risk group when they do not reach proficiency level I in reading literacy (Artelt et al., 2001). There is a potential risk if students do not achieve a result higher than proficiency level I (Baumert & Schümer 2001).

In the year 2000, 22.5 per cent of German 15-year-olds did not achieve a result higher than proficiency level I in reading literacy. This meant that almost one-fifth of the age cohort was expected to have difficulties transitioning to initial vocational training and, in all probability, to also have problems in overcoming the second hurdle, namely entering the labour market. Germany shares this problem with other economically comparable countries, but there is a significant variance in the size of the risk group. In Finland, the share of at-risk students in PISA 2000 was 6.9 per cent. Sweden could serve as a benchmark for Germany: with a similar immigration structure, 12.6 per cent of students were in the risk group.

(3) The, by international standards, especially strong correlation between the family background of students and their competence levels

Even though no participating country managed to uncouple competence acquisition in reading literacy, mathematics and natural sciences from social origin characteristics, the variability of the correlation showed that participating countries were able to deal with this transcultural problem to different degrees. In Germany the correlation was particularly close (Baumert & Schümer, 2001; Baumert & Maaz, 2010). The social gradient for Germany was the steepest. When social class in

Germany changed by one standard deviation, reading literacy followed by just under 45 points – more than double the figure for Finland. Taking other countries into consideration, Switzerland and Belgium also had steep social gradients, although at a somewhat higher level. For the United States too there was a gradient that, at a higher level, flattened out more than in Germany. By international standards, moreover, it was clear that the relationship between background and competence acquisition in the upper social strata clearly exhibits covariation. While differences in reading literacy between the different countries fall when comparing young people from privileged backgrounds, the gap widens in the lower social stratum. The close relationship between social origin and competence acquisition suggests that children from socially less advantaged families in particular find themselves in the group of at-risk students. While 9.9 per cent of children whose parents are in the upper service class achieve proficiency level I at most, in the group of children of unskilled and semi-skilled parents the figure was just under 30 per cent.

(4) The long-known social and migration-related disparities in participation in the different educational tracks and secondary-level school types, which have once again been a particular focus since PISA 2000

The PISA findings show that, by international standards, there is extremely high social selectivity in the German education system as regards participation in education. Attendance of the *Gymnasium* secondary school type by children from socially privileged families (i.e. families in the upper service class) was more than 50 per cent; this rate falls moving down the social strata to 10 per cent in families of unskilled and semi-skilled workers. The counterpart to this is attendance of the *Hauptschule* secondary school type, which rises from just over 10 per cent of children of parents in the upper service class to more than 40 per cent in the group of children from families of unskilled and semi-skilled workers. In attendance of *Hauptschule* and *Gymnasium* school types, therefore, the social disparities in participation in education became particularly apparent. In contrast, *Realschule* attendance shows an approximately equal distribution.

Following a particular educational track can be significant in two respects. First, if the acquisition of a specific leaving certificate is bound to attendance of a specific school type. Second, if institutional learning settings represent differential learning and development environments.

In terms of acquiring the *Allgemeine Hochschulreife* (i.e. the general higher education entrance qualification), the *Gymnasium* secondary school type is dominant in Germany. About three-quarters of school-leavers with the higher education entrance qualification have completed this leaving certificate at a general-education *Gymnasium*. Key alternatives to the general-education *Gymnasium* are the vocational *Fachgymnasium* or *Berufliches Gymnasium* (10.9%), and the *Integrierte Gesamtschule* or integrated comprehensive schools (6.5%).

Differential learning and development environments describe environments where young people are given, *independently of and in addition to* their different personal, intellectual, cultural, social and economic resources, according to the school type attended, differential development opportunities that are conditioned by the school environment and are generated both by the distribution process and by institutional working and learning conditions and pedagogical-didactic traditions specific to the type of school (Baumert & Köller, 2001). Such differential learning and development environments have been identified in a number of different studies (see overview in Becker, 2009).

In terms of the risk group mentioned, in Germany it proved to comprise mainly students from the *Hauptschule* and from special schools, which in turn are attended largely by students from less privileged social backgrounds, and students with a migration background. One in two students here

reached at most proficiency level I. Although the proportion of students who achieved proficiency level I at most was lower at the other school types, with 18 per cent at integrated comprehensive schools and with 9 per cent at the *Realschule* it was still disappointingly high (Baumert & Schümer, 2001; Naumann et al., 2010).

(5) The low permeability of the German education system

Education systems should be open and permeable. The German Education Council promoted this as far back as the early 1970s. Openness in the education system generally means the possibility of being able to rectify educational decisions without undue personal and social costs (Köller, Baumert, Cortina, Trautwein & Watermann, 2004; Maaz, 2006). The German education system was for a long time an extremely closed system. In the secondary school sector in particular mobility processes mainly took the shape of downward mobility, in the form of a change from a demanding educational track to a less demanding one. Upward mobility (e.g. changes from a *Realschule* to a *Gymnasium*) were rare. Thus the mobility rate (share of students in one school year changing school type) among 15 year-olds on the basis of the PISA-E sample in the year 2000 was 16.3 per cent. There were considerably more instances of downwards mobility (70%) than upward (30%; see Baumert, Cortina & Leschinsky, 2003, p. 90).

(6) The lack of broad access to good quality pre-school programmes

At the start of the new millennium, findings on the nature of the general education system were essentially the focus of interest. By international standards, in particular, it appeared that access to high-quality pre-school education programmes is an important condition for successful educational processes. The proportion of places available in 2000 varied between the old and the new *Länder* on the one hand and between care for children under three years of age and for those over three on the other. This applied in particular to the share of places available for the under-threes, which in the old *Länder* was only around 2 per cent at that time.

(7) The organisation of the transition into tertiary education with the aim of increasing the graduation rate in the tertiary education sector

In the post-school sector, the rates of transition into the tertiary education system were the focus of interest. This involved first raising the transition rate overall, in order to meet the changing demands of the professional world with fewer and fewer jobs for low-skilled workers on the one hand and more options for higher-skilled workers on the other hand. Secondly, a number of different research papers showed also that the extent of social disparities is extremely stable on starting a degree course, and so education potentials are not being fully exploited.

(8) The transition into a vocational training course leading to a qualification, particularly for the so-called “risk group”

In the non-academic training area it was a question of designing vocational education and training and the associated professional career paths in such a way as to attract well-qualified graduates from the general education system. A particular challenge lay in the qualification and professional integration of students who belong to the so-called risk group, and have comparatively little chance of obtaining an apprenticeship on the open training market.

(9) *Demographic change and its importance to the education system*

Even at the turn of the millennium it was clear that the age structure of the population living in Germany would change fundamentally, and that the group of adolescents going through the education system would scale down substantially. In parallel, the share of students with immigration experience will increase proportionately. The extent of this demographic change will differ greatly regionally.

(10) *The fundamental shift in the social value of education*

For years there has been a fundamental change in people's demand for education, which manifests as a sustained trend in demand for higher education. In the school system this can be observed, inter alia, in increasing transition to school types that allow the acquisition of the *Allgemeine Hochschulreife*. The intermediate school leaving certificate has become a minimum socially-accepted qualification, and the *Gymnasium* in many cases the most heavily attended type of school.

The central educational policy objective was to respond appropriately and sustainably to the challenges sketched out above. The Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany agreed, after the publication of the PISA results, on the definition of central fields of action. Here the focus was on the following challenges and goals:

1. measures to improve linguistic competence as early as in the pre-school sector
2. measures to strengthen the link between the pre-school sector and primary school with the aim of early school entry;
3. measures to improve primary school education and continuous improvement of reading literacy and of the basic understanding of mathematical and natural science correlations;
4. measures to provide efficient support of educationally disadvantaged children, with particular regard to children and young people from migrant backgrounds;
5. measures to ensure consistent continuing development und assure the quality of teaching and schools on the basis of binding standards and results-oriented evaluation;
6. measures to improve professionalism in teaching, with particular regard to diagnostic and methodical competence as an element of systematic school development;
7. measures to expand provision of all-day activities and care with the aim of increasing opportunities for education and support with particular regard to students with educational deficits and especially gifted students.

The following section is intended to provide an overview of key reform measures in Germany derived from the above.

Section 3

Education policy measures to achieve the EFA goals

The EFA goals have been achieved in Germany to varying degrees. To ensure the further development of the education system and the implementation of all EFA goals, a number of major and minor reforms and other changes have been initiated in recent years. The areas of action formulated by the Standing Conference in 2001 set out a conceptual framework for the development and implementation of changes. Some particularly key reforms and changes are discussed briefly below.

Legal entitlement to day care for children under three

The Children Promotion Act (*Kinderförderungsgesetz, KiföG*) entered into force in December 2008 with the aim of accelerating quantitative expansion and securing high-quality childcare and educational provision in the pre-school sector. This links in with the goal of opening up options for parents in the first place. One of the most important provisions of this Act is the legal entitlement to a place in day care for all children from the age of one year of age up to the age of three, in force since 1 August 2013. To this end, provision of family day care (child-minding services) has been stepped up significantly; 30 per cent of the new places are to be created in this area.

Flexible school-starting phase

Since PISA 2000 all *Länder* have made efforts to bring down the age of starting institutionalised learning in the school context. To this end the school-starting rules in many *Länder* have been amended so that children start school earlier, or at least have the option of doing so. These efforts have been coupled with the introduction of a flexible school-starting phase, which is designed to provide a suitable response to the different levels and processes of development at the beginning of schooling. This flexible school-starting phase has been implemented differently in the *Länder*.

Introduction of national education standards

With the *Konstanzer Beschluss* resolution, in 1997 the Standing Conference made quality assurance in the German school system its key focus. It agreed to investigate the outcomes of the German education system scientifically, and to compare them internationally in school performance studies such as TIMSS, PISA and PIRLS. The primary objective of these studies was, and remains, to obtain evidence-based findings on the strengths and weaknesses of the students in the central domains of competence. In addition to controlling school performance via curricula (input-driven control), the findings of the international school performance studies resulted in a process that will focus more on the effects and results of educational processes (output-driven control). This includes, as a key aspect, the binding definition and review of desired performance standards in central domains of competence. To this end, with a view to quality development and quality assurance, in December 2003 the Standing Conference adopted cross-*Länder* educational standards for the intermediate school leaving certificate, initially for the subjects German, mathematics and first foreign language (English and French). The corresponding standards for the *Hauptschulabschluss* secondary general school certificate followed in October 2004, together with standards for the primary school sector in the subjects German and mathematics. In December 2004 educational

standards for the natural science subjects (biology, physics and chemistry) were adopted for the intermediate school leaving certificate. This was followed, in October 2012, by educational standards for the *Allgemeine Hochschulreife* in the subjects German, mathematics and advanced foreign language (English and French). Educational standards are an important instrument in national education monitoring and are designed to serve the aims of quality assurance and quality development in education. With the exception of the standards for the *Allgemeine Hochschulreife*, which are based on a different approach involving the development of a pool of *Abitur* examination papers, the achievement of the educational standards is examined through regular comparisons between the *Länder*.

Teaching development through comparative tests

Comparative tests, which are carried out in addition to international and national school performance studies, serve the state-wide school year-based evaluation of the individual schools and classes following the cross-*Länder* educational standards. The results of the comparative tests are reported to the schools as quickly as possible so that they can be incorporated into classroom teaching and school development. In the primary sector comparative tests are carried out in grade 3 (VERA 3), and in the secondary sector in grade 8 (VERA 8).

All-day programmes at school

With the investment programme “Future Education and Care” (2003 to 2009) the Federal Government supported the establishment and expansion of all-day schools in all 16 *Länder*. The programme agreed jointly by the Federation and the *Länder* was equipped with a total of four billion euros and included four priorities: (1) the establishment of new all-day schools, (2) the expansion of existing schools into all-day schools, (3) the creation of additional all-day places at existing all-day schools, and (4) the qualitative development of existing all-day schools. The main objectives of the expansion of all-day schooling are to improve the quality of education and individual support, and to reduce social disparities in educational achievement. The all-day school programme is a good example of a successful joint project of the Federation and *Länder*. It has brought together teaching practice within schools, education administrations and educational research. From 2004 to 2014, with the aid of ESF funding, the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung – BMBF*) promoted the accompanying programme “*Ideen für mehr! Ganztägig Lernen*” (Ideas for more! All-day learning) with a total of around 40 million euros, and accompanying research with a total of around 16 million euros, including the “*Studie zur Entwicklung von Ganztagschulen*” (Study on the development of all-day schools, 2005-2015) and the research priority “*Ganztägige Bildung, Erziehung und Betreuung*” (All day training, education and care) (2008-2011).

Changes in the secondary school structure

The demographic trend and the associated sharp decline in enrolment, rising educational aspirations, and the continuing strong social disparities in educational attainment demand corresponding changes at the level of the secondary school structure. The *Länder* have responded to this need, albeit sometimes in quite different ways. At lower secondary level most *Länder* currently provide, alongside the *Gymnasium*, essentially only one other secondary school type. Thus, a clear trend towards a two-tier school system has been identified. The organisation of the non-*Gymnasium* school

types (to obtain the *Abitur* for instance) still varies considerably between the *Länder* however. The traditional tripartite school system consisting of the *Hauptschule*, *Realschule* and *Gymnasium* is no longer found in its pure form in any of the *Länder*.

Central final examinations

With the aim of ensuring uniform performance requirements and increasing the comparability of educational qualifications, central final examinations for the intermediate school leaving certificate and the *Abitur* have been introduced in recent years in almost all *Länder*. However, it should be noted that in each case these are central final examinations at the level of individual *Länder*, not Germany-wide standardised tests. Currently there is some cross-*Länder* cooperation on the production of examination papers, but the specific design of the final examinations still varies between the *Länder*, in some cases quite significantly. From the 2016/2017 academic year a shared pool of *Abitur* examination papers will be available for potential use by the *Länder*.

Language promotion

Promoting competencies in the academic language is one of the key challenges for quality assurance and the further development of the education system, and is the main key to tackling educational inequalities, especially with regard to students with a migration background. Language promotion is, therefore, explicitly addressed in the Standing Conference fields of action. The biggest project is the Federation-*Länder* initiative “*Bildung durch Sprache und Schrift* (BiSS)” (Education through language and writing), which aims to promote language learning and reading and develop diagnostics for language issues.. The focus of this initiative is to bring together, evaluate and develop many measures to provide language training. This project seeks to give children better language education both in day-care centres for children and at school. BiSS is a joint initiative of the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung – BMBF*), the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth (*Bundesministerium für Familie, Senioren, Frauen und Jugend – BMFSFJ*), the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany (*Ständige Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland – KMK*) and the Conference of the Ministers of Youth and Family Affairs (*Jugend- und Familienministerkonferenz – JFMK*).

Strengthening vocational learning and vocational orientation in the general education system

In the large-scale international comparative tests, and in the national comparisons between the *Länder*, special emphasis is placed on levels of development in students’ core competences (German, mathematics, foreign language and science). These are undoubtedly crucial to the next stage, the transition to the training system. To ensure a successful transition to vocational training, however, beyond a set of general education subjects more vocationally-oriented content is important. This includes, inter alia, the areas business/economy, labour and technology, as well as a good-quality vocational orientation. In recent years, a number of measures to strengthen vocational and work-oriented learning have been implemented in all 16 *Länder*, primarily in non-*Gymnasium* tracks but also in some *Gymnasium* tracks.

Section 4

Advances in the EFA goal areas

Goal 1 – Expanding early childhood care and education

In the last decade Germany has made a multitude of efforts to ensure demand-based education and care provision for children under the age of three. The expansion of provision for the under-threes instigated by the Day Care Expansion Act (TAG) in 2005 and continued through the Children Promotion Act (KiföG) in 2008 aimed to ensure sufficient places in day care for children under three by 1 August 2013. Since that date there has been a legal entitlement to a place in day care for all children aged one and two.

The expansion of day-care provision for the under-threes in recent years has not only developed considerable dynamics with regard to the growth in the number of places and establishments, but has also been accompanied by changes in the forms of care available and in the provider landscape.

In March 2013 there were around 48,800 early childhood education and care establishments. Since 2006 this number has risen by 3,500, or just under 8 per cent (Tab. 1-1). Looking at the age structure in these establishments it is clear that the expansion of provision for the under-threes has been achieved largely by setting up new groups in existing childcare facilities, and less so by opening new facilities. In Western Germany, day-care centres have long catered primarily for children from the age of three up to starting school; with the introduction of the legal entitlement for children from the age of one they now also increasingly cater for younger children. In Eastern Germany, day-care centres traditionally also catered for children under the age of three.

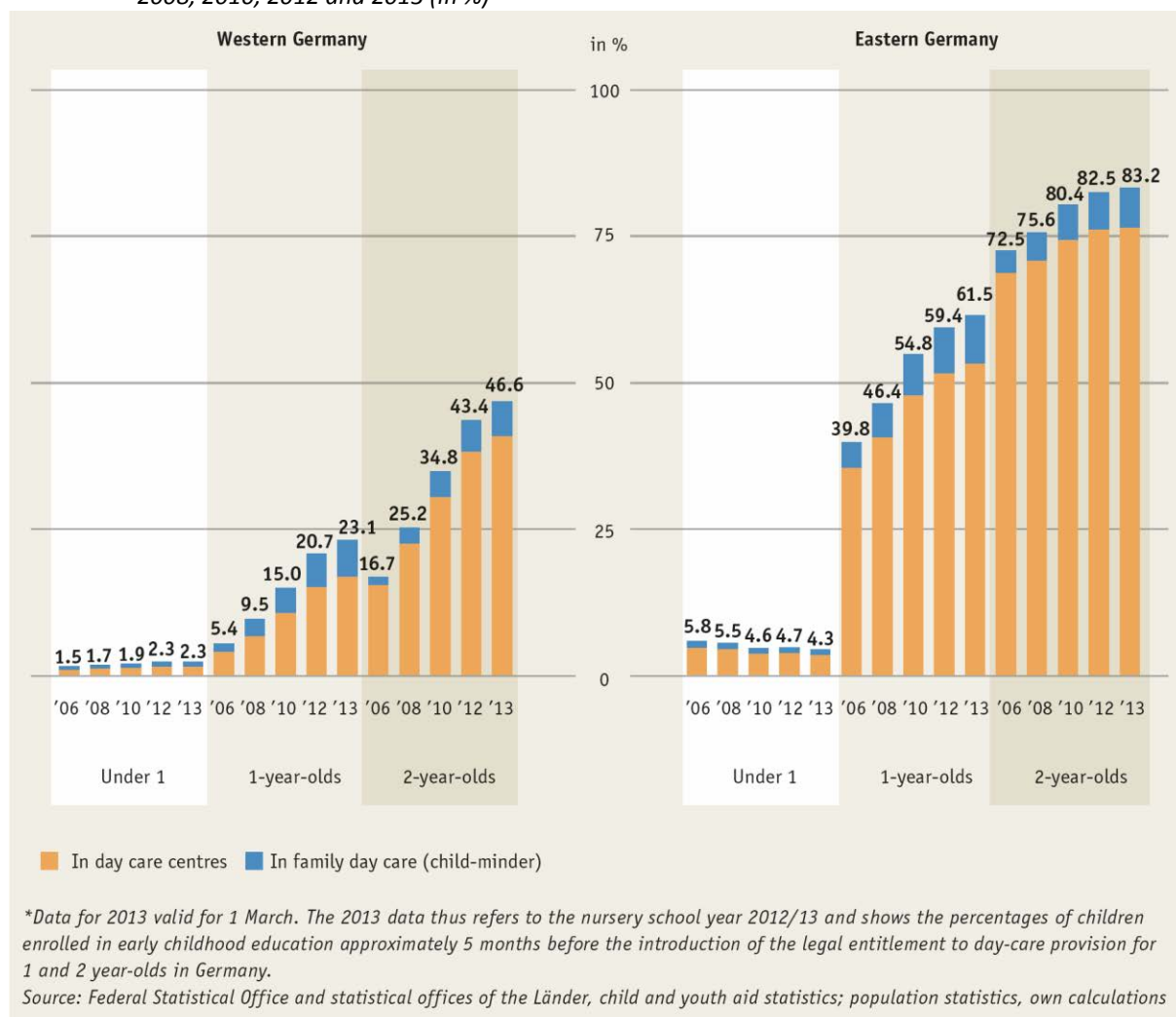
Through the Children Promotion Act (KiföG) moreover, publicly funded family day care (child-minders) as a form of early childhood education was treated as equivalent to day-care centres for children under the age of three. In 2013 there were just under 44,000 child minders looking after a total of around 139,700 children (Tab. 1-2); over two-thirds of these children were under three years old. Before family day care (child-minders) for the under-threes was upgraded by the Children Promotion Act, in Western Germany family day-care (child-minding) often took the shape of help from neighbours and friends, or was organised by parents themselves. Now the profession of child-minder is anchored in law and is subject to approval, has an educational mandate and has to be provided by trained providers where at all possible. The number of child minders who look after four or more children as a professional service has therefore grown almost threefold.

The development of the provider landscape is also marked by a proportional decrease in the number of children in publicly funded establishments and a growing relevance of private providers. However, there are also shifts within the ranks of the latter. In provision for the under-threes, since 2006 the share of religious providers has risen across Germany from 21 to 27 per cent; in provision for three to six year-olds it fell slightly to 41 per cent at the last count. Offers by private commercial providers and day-care centres for children of company employees remain marginal.

The expansion of early childhood education and care is also reflected in rising participation rates (Tab. 1-3): the enrolment of children aged between three and six in day-care centres and family day care (child-minders) has been very high for a number of years, and is even over 95 per cent for

the over-fours. Comparable rates also apply to three year-olds in Eastern Germany, while in Western Germany 87 per cent of this age-group make use of family day care (child-minders). This share has risen significantly since 2006 (74%); in terms of time spent in day care, too, there is a distinct increase in the number of children in all-day care.

Fig. 1-1: Children under the age of 3 in day care by age group for Western and Eastern Germany in 2006, 2008, 2010, 2012 and 2013 (in %)



Source: Federal Statistical Office and statistical offices of the Länder, child and youth aid statistics; population statistics, own calculations

With regard to the under-threes, in March 2013 almost 600,000 children were in some form of day care. Just a few months before the introduction of the legal entitlement to a place in day care for one and two year-olds in August 2013, 29 per cent of three year-olds were thus in day-care centres or family day care (Fig. 1-1). In Western Germany, participation in education had tripled since 2006, at around 24 per cent in 2013. In Eastern Germany, the share of under-threes in day care was, at just under 50 per cent, twice as high – even more than 20 years after German unification, this difference can be traced back primarily to the different care traditions and cultures in the two parts of the country.

At national level, family day care (child-minders) is used by nearly 5 per cent of children under three. As regards daily hours of day care, a further shift towards longer periods of care is evident in

Western Germany (Tab. 1-4). The share of under-threes in all-day care has grown from 33 to 43 per cent. In Eastern Germany this share has even increased from 62 to 75 per cent.

On the whole, this expansion is accompanied by an increase in expenditure on early childhood education and care, rising from 11.3 billion euros to 15.3 billion euros between 2005 and 2011 (Tab. 1-5). Public spending was particularly crucial to this, increasing from 8.1 to 12.3 billion euros in this period. Measured against the economic output of the Federal Republic of Germany, however, spending rose only slightly, from 0.5 to 0.6 per cent of GDP.

The expansion of day-care provision to the under-threes also had an impact on the training landscape and the labour market for educational professionals. Numbers of teaching staff in day-care centres, who work with mixed age-groups or with groups of children about to start school, reached a new high in 2013 at approximately 444,200 employees. Added to these, as indicated above, are around 44,000 child-minders (Tab. 1-6). The unusually strong staffing increase in day-care centres is due, in Western Germany, not only to the expansion of provision for the under-threes but also to the expansion of the hours of day-care provision, as well to as a general improvement in staffing ratios. In Eastern Germany, besides the expansion of provision for the under-threes, there were also demographic increases in the all age groups. Although the proportion of male staff in day-care centres has increased slightly, with a 96 per cent share of women it is still an almost exclusively female employment market.

Monitoring of the staffing ratio shows a steady improvement which cannot, however, be demonstrated over time. Staff deployment is highest in groups caring for children under three exclusively (Tab. 1-7). Once older children join the mix, the ratio of children to teaching staff increases. The proportion of staff over the age of 50 has increased considerably: in Western Germany from just below 7 per cent in 1990 to 23 per cent in 2013, and in Eastern Germany since 1991 by 20 percentage points to 33 per cent. Parallel to the increased staff requirements, however, capacities in child-care worker training courses have increased markedly. The expansion of provision for the under-threes and the significant increase in teaching staff in day-care centres has been handled easily through increased training capacities, especially for child-care workers. Despite staff shortages in some metropolitan areas, this does not appear to have led to a nationwide increase in low-skilled workers.

Goal 2 – Universalising primary/basic education

In the Federal Republic of Germany, school attendance in the primary and lower secondary sector is almost 100 per cent, as compulsory education for children and young people is laid down by law. Nevertheless there are still differences in participation in school education, such as how and when children start school, the type of school attended, and the associated changes between types of school, in repetition of grades, and not least in the types of certificate obtained.

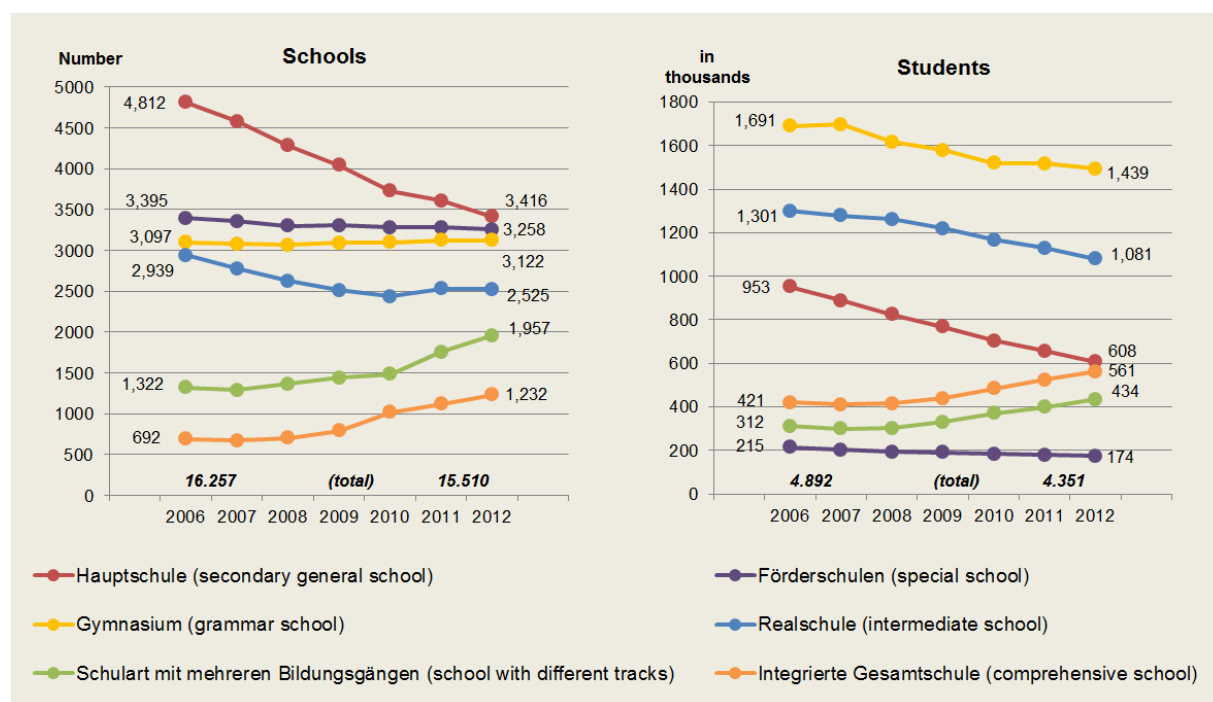
In the last decade the date of school enrolment has been brought forward in 8 out of 16 *Länder* with the aim of lowering the age at which children enrol. After a slight rise in later school enrolment from 2008 onwards, which led some *Länder* to put back the enrolment date due to a lack of acceptance by parents, the percentage of late entrants has fallen, most recently to 6.6 per cent (Tab. 2-1, Tab. 2-2). Girls are more often enrolled early, and more rarely enrolled late, than boys.

It is also worth noting that the number of direct enrolments in *Förderschulen*, i.e. schools for children with special needs, fell between 2006 and 2012 by 4,500 to 23,000, while the relative share of children enrolled overall remained constant at 3.3 per cent due to demographic changes (Tab. 2-3). At the same time, around 5,600 more children with special needs were enrolled in mainstream schools in 2012 than in 2006. Relative to all enrolments of children with special needs, therefore, the share of integrative schooling has increased considerably from 19 to 34 per cent.

Transitioning into the structured lower secondary level reveals other differences in participation connected to institutional structures which are organised differently depending on the *Land*. In Germany, essentially, three educational tracks can be identified, each with different requirement profiles, each geared to the acquisition of a specific school-leaving certificate (*Hauptschulabschluss*, *Mittlerer Abschluss* or *Hochschulreife*). Given the falling demographic trend, which in rural areas in particular makes it increasingly difficult to maintain a highly differentiated choice of school types, and against the background of a long-term change in demand for education, which can be observed, inter alia, in increasing transition to school types that allow the acquisition of the *Hochschulreife*, in all *Länder* new non-*Gymnasium* school types have been created or have arisen from the merger of existing school types.

The number of such schools offering several different educational tracks increased by around 50 per cent between 2006 and 2012 alone (Fig. 2-1). In the case of the *Gesamtschule*, or comprehensive school, the increase is to almost double. Student numbers at these two types of school have together increased by 35 per cent to just under a million. By contrast, stand-alone *Hauptschulen* and *Realschulen* are seeing considerable falls in numbers. In the case of *Hauptschulen* the numbers of establishments and of students have both fallen by around a third since 2006. Viewed overall, there is a clear trend towards a two-pillar model which, alongside the *Gymnasium*, only provides for one other school type and allows students to acquire the *Allgemeine Hochschulreife* in different ways. Vocational schools are also increasingly contributing to this situation, as increasing numbers of young people are obtaining the secondary general school certificate at vocational schools after leaving general education schools.

Fig. 2-1: Number of general schools and students in lower secondary education (grade 5 to 10) from 2006 to 2012 by school type



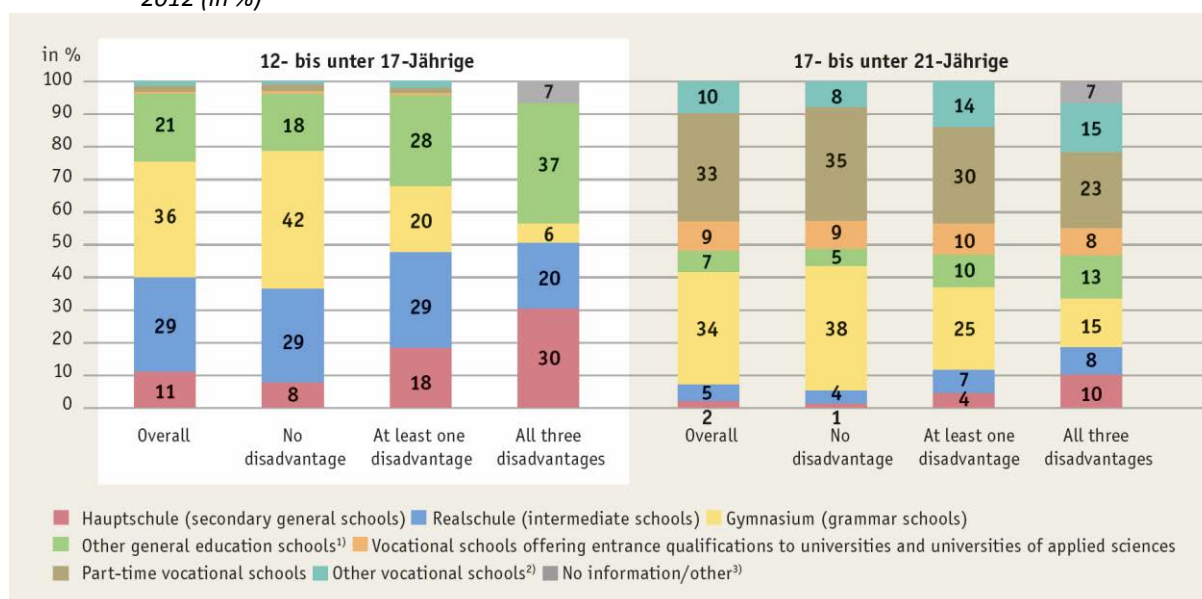
Source: Federal Statistical Office and statistical offices of the Länder, school statistics

In terms of participation in educational tracks which lead to the highest possible educational certificates, on the whole positive trends may be observed. There is a weaker link between school attendance and family background – at least in the case of older students compared with younger students (Fig. 2-2). Thus 42 per cent of students aged 12 to under 17 growing up without any disadvantage (unemployment, at risk of poverty or with a poor level of education) attended a *Gymnasium*. In the case of children growing up with at least one of these disadvantages, the figure is only half as high (20%).

For the 17 to 20 year-olds, however, the situation is rather different: 35 per cent of young people in this group with at least one disadvantage attend the *Gymnasium* or vocational schools which lead to the *Hochschulreife* – compared with 47 per cent who are not affected by any of the disadvantages. A majority of young people from lower social conditions appear therefore only to take up the opportunity of acquiring the *Hochschulreife* at a later stage. This may be regarded as an indication that a differentiation between educational tracks in the upper secondary level helps tackle educational disadvantages.

Largely due to the demographic trend the relative expenditure on school education has risen in recent years (Tab. 2-4). At state schools (both general education and vocational) in 2011 spending was 6,000 euros per student. In 2001 it was just 4,500 euros. Particularly evident are the increases in the Eastern German *Länder* (apart from Berlin) where, after German unification, since the 1990s the largest fall in student figures has taken place. The annual expenditure per student rose here between 2001 and 2011 from 4,200 to 6,900 euros.

Fig. 2-2: Distribution of students aged 12 to 16 and 17 to 20 by type of school and level of disadvantage* in 2012 (in %)



* Types of disadvantages: parents who were unemployed, at risk of poverty or with a poor level of education (ISCED 0-2)

- 1) Primary schools, orientation stages independent of school type (years 5 to 6 for the transition to secondary stage, schools with different tracks, comprehensive schools, Waldorf schools, special needs schools)
- 2) Vocational schools, offering a year-10 intermediate school certificate (Mittlerer Abschluss), vocational preparation years, basic vocational training years, full-time vocational schools awarding qualifications in a specific occupation, one-year health schools

Source: Federal Statistical Office and statistical offices of the Länder, Microcensus 2012

Absolute total expenditure on the primary and lower secondary sector (ISCED 1 to 4) has also increased: in 2011 it was 82.1 billion euros, 6 billion euros above 2005 levels (Tab. 1-5; Goal 1). Taking into account the general-education tracks only, the absolute increase from 50.1 to 58.9 billion euros is even higher. As in the early childhood sector, this increase in expenditure also reflects the general overall economic development in the Federal Republic of Germany, as the share of expenditure for general-education tracks improved only marginally from 2.2 to 2.3 per cent of GDP.

Goal 3 – Meeting the learning needs of young people and adults

Comparative tests have shown over the years that the competences of 15 year-old students in Germany are average by international standards. Due in particular to positive developments in the lower performance range, however, in the PISA study the literacy and numeracy competences of 15 year-olds have improved since 2000 (Tab. 3-1). The relative improvements in the literacy and numeracy competences of 15 year-olds over the last decade cannot, however, be clearly ascribed to individual causes. Here a number of factors come together, such as a change in the composition of the student body, the implementation of educational standards, more cognitively activating and more demanding teaching concepts, and a generally improved school and education climate, and numerous measures to improve the quality of both school and teaching. Notwithstanding, there continue to be considerable disparities in the competence levels of students by social background and migrant background (see Goal 5).

Social disparities are also evident in the level of education of the population. Children from working-class backgrounds (above all from families of unskilled workers) have much lower chances of getting into higher education than children of parents in the lower and upper service classes, and more frequently end their education with (at most) a *Hauptschulabschluss*. Strong differences in the level of education still exist between young people with and without a migrant background.

Differences in the level of education by age document the strong expansion of formal education in Germany in recent decades (Tab. 3-2). Not even a fifth of young people aged between 20 and 25 now have a *Hauptschulabschluss*, but nearly half of them have the *Hochschulreife*. Almost the opposite is true of the 60 to 65 year-old age cohort: half of them have a *Hauptschulabschluss*, but only one-fifth have the *Hochschulreife*.

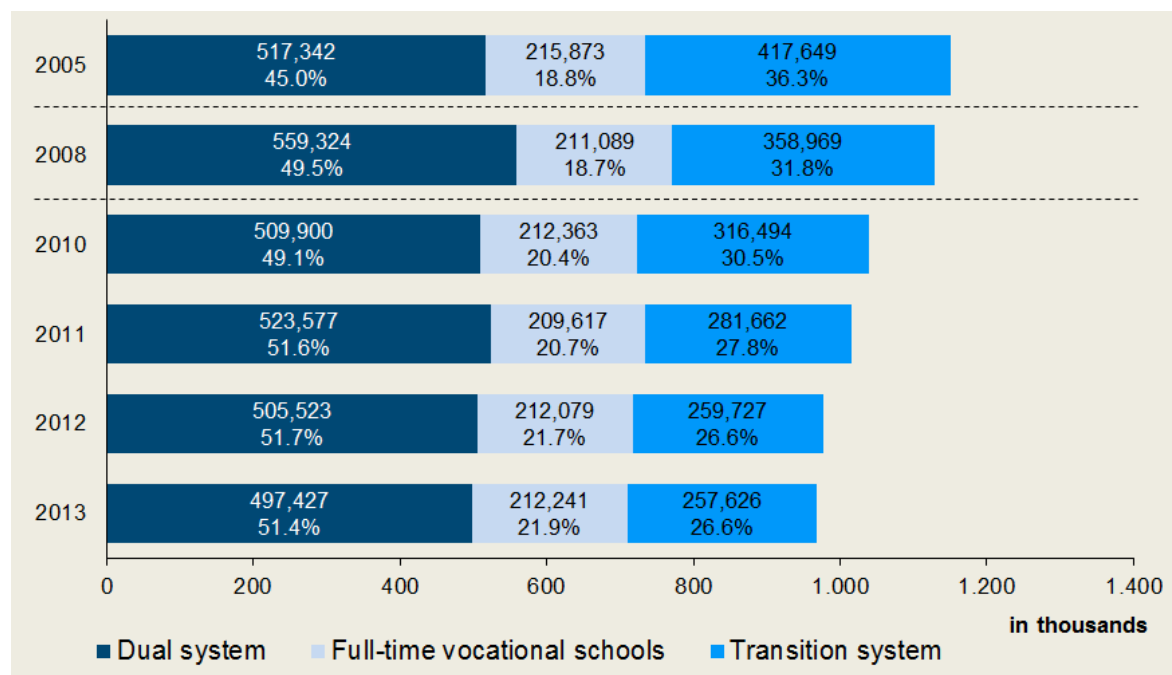
The social disparities continue in vocational education and training. Here, the internationally highly recognised German training system has, over the last two decades, been subject to developments which, while they do not call into question its performance, do present a challenge and affect in particular the previously disadvantaged groups in vocational education and training, namely the low-skilled and young people with a migrant background: the number of training places available in the dual system of vocational education and training has fallen by almost one fifth since the turn of the millennium, and the average training rate of companies by 10 per cent; vocational schools are no longer extending their full-time education offers.

The two social characteristics which have the greatest impact on selection in entering vocational education and training continue to be the prior level of schooling and nationality (migrant background). Only around a quarter of young people without a *Hauptschulabschluss* have currently obtained a training place in full-time vocational schools or in the dual system (Tab. 3-3). In the case of young people with a *Hauptschulabschluss* around three-fifths obtain a full vocational qualification, while two-fifths initially enter the transition system. Young men much more frequently than young women have to detour through the transition system (a ratio of 60 to 40).

The most serious consequence of this development can be seen in the fact that, in a period of demographically induced demand for training, up to two-fifths of new entrants into vocational education and training do not receive fully qualifying training and end up in the transition sector, in which they only complete pre-vocational training (Fig. 3-1). With a decline in demand in recent years

also primarily due to demographic reasons, the number and share of young people who end up in transition measures has indeed fallen considerably; but, at more than a quarter of a million young people or more than 25 per cent of new entrants, the level of young people who are excluded from vocational education and training is still extremely high and continues to represent the central issue of vocational training policy.

Fig. 3-1: Distribution of new entrants into the three sectors of vocational training from 2005 to 2013



Source: Federal Statistical Office and statistical offices of the Länder, *Integrierte Ausbildungsberichterstattung* (school statistics, higher education statistics and other); Federal Employment Agency, own calculations

In all categories of school-leaving certificates, the situation regarding the transition of young foreigners into a vocational training place remains much less favourable than that of their German counterparts. While, based on school-leavers as a whole, one in four young Germans enters the transition system, for non-Germans the figure is almost half that, i.e. twice as high a share of all new entrants into the training system. In the lower categories of school-leaving qualifications, for young foreigners the rates of new entrants without a *Hauptschulabschluss* joining the transition system are 85 per cent, for those with a *Hauptschulabschluss* around 60 per cent. Even for young people with a *Mittlerer Abschluss* the share of young foreigners in the transition system is twice as high as that of Germans.

Goal 4 – Improving adult literacy

Adult literacy, understood above all as reading literacy, has played a serious role in political and economic debate in Germany only since around the turn of the millennium. This can be traced back to the fact that representative and internationally comparative studies with validly measured adult reading literacy have been carried out only since the end of the 1990s. The International Adult Literacy Survey (IALS), executed in three waves between 1994 and 1998 in 20 different countries including Germany, was ground-breaking in this respect. In an international comparison of reading literacy spearheaded by the Scandinavian countries, Germany is in sixth place, with an average 25 points behind Sweden (300 points) as the leader.

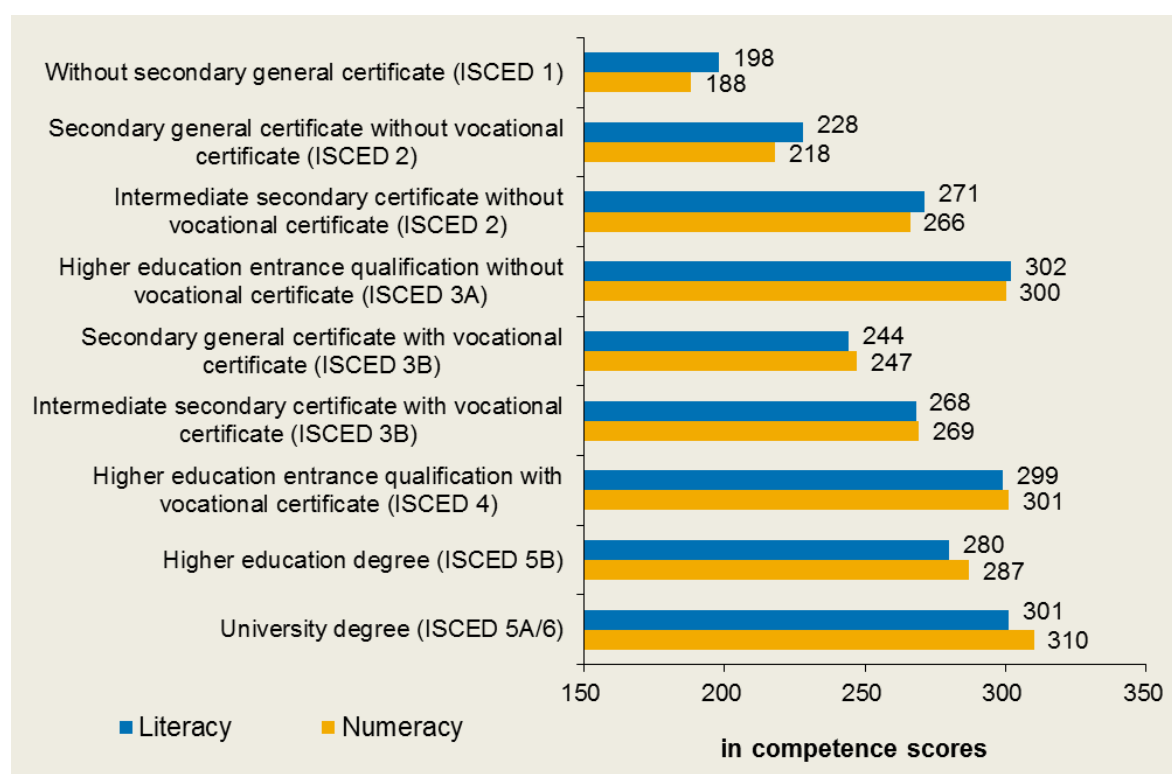
With the Programme for the International Assessment of Adult Competencies (PIAAC) in 2013, in which 24 countries took part, the OECD presented a new study of basic competences which adults need in order to cope with their everyday professional and non-professional life. The three basic competences examined were literacy, numeracy, and problem solving in technology-rich environments. These three areas of competences may, because of their focus on everyday knowledge rather than didactic theories, together be seen as a supranational definition of valid basic literacy. In the PIAAC results they are also closely interconnected.

By international standards, Germany is three points below the OECD average in reading literacy, and three points above it in basic numeracy; both values are of statistical significance. More revealing than the position of German adults by international standards are the differences within Germany in terms of socio-structural composition.

Level of education has the strongest impact on the two basic competences literacy and numeracy (Fig. 4-1, Tab. 4-2). With an OECD average of 273 points in literacy and 269 points in basic numeracy, adults without a *Hauptschulabschluss* (ISCED 1) achieved only 198 points in literacy and 188 points in basic numeracy. The difference between these scores and those in the highest educational attainment, the *Abitur* (ISCED 3A), is 100 competence points or two PIAAC proficiency levels. At the lower levels of school-leaving certificates, however, completing vocational training improves the level of competence for those completing *Hauptschule* education with vocational training by almost 20 points for literacy and 30 points for basic numeracy. Whether the positive effect vocational training has on basic skills is down to selection processes in choosing training entrants from among *Hauptschule* graduates, or is a general effect of vocational training, must remain unanswered.

Looking at other social characteristics, it is at first glance surprising that women have a lower average reading literacy than men, although in the last two decades they have achieved a higher average level of general education (measured in terms of school-leaving certificates) than men (Tab. 4-3); this might be due to the fact that the historical legacy of an underprivileged status of women in higher education has not yet been compensated statistically.

Fig. 4-1: Literacy and numeracy* of adults (aged 16 to 65) in 2012 by highest educational attainment



* Mean tests scores

Source: OECD, PIAAC 2012, own calculations

Further strong social differences in the proficiency level are generated by age (Tab. 4-3). Around two-fifths of the youngest age group (adults aged between 16 and 29) are in the lowest two proficiency levels, and around two-thirds of adults aged between 50 and 65. The ratios are reversed in the highest two proficiency levels (at three-fifths to one-third). Employment status and migrant background also show a significant correlation with the level of competence in reading. For those with a migrant background the difference is 20 points to the disadvantage of adults with a migrant background, who thus fall well below the OECD average, while adults without a migrant background remain above both the OECD and the German averages. Almost the same ratio is to be observed in terms of employment status, with the unemployed 20 points below the employed as regards literacy.

The literacy data may conceal a serious issue which has already been identified by policymakers in Germany: that of more widespread functional illiteracy than previously assumed. It stands to reason that, among the 17 per cent of adults in Germany who achieve only the lowest level of literacy in PIAAC, there is a considerable share of the functional illiterates identified in 2011 by the “Leo-Level One Study” (Grotlüschen/Rieckmann 2011). Against the hitherto four million people estimated in public debate, the Level One study shows that in total about 7.5 million adults aged between 18 and 64, i.e. more than 14 per cent, are affected by functional illiteracy.

The Federation and the *Länder* have responded to the new data and adopted an agreement on a joint National Strategy for Literacy and Basic Education of Adults in Germany 2012-2016 (*Vereinbarung über eine gemeinsame nationale Strategie für Alphabetisierung und Grundbildung Erwachsener in Deutschland 2012-2016*). They start from the understanding that the minimum level

of literacy is closely connected to other basic social participation skills such as numeracy, computer literacy, and social literacy inter alia. The literacy strategy for adults does not simply start with continuing education institutions, but in the working and social environment too, and also incorporates social stakeholder groups (e.g. churches, local authorities, trade unions; cf. “Agreement” of 7 September 2012). The Federal Government is also funding a variety of research initiatives in this area.

Goal 5 – Gender parity and equality in education

Participation in education and level of education of boys and girls, and of men and women

The issue of gender-related inequalities in participation in education and in the level of education is, in Germany, to be regarded against the background of two premises. Firstly, there has been a significant decline in discrimination against girls in Germany in recent decades which, in the higher education sectors, has even led to inequalities at the expense of male adolescents. On the other hand, in the pre-school (from age 4) and compulsory school sectors, given the participation rates of around 95 per cent and almost 100 per cent respectively, on the whole almost no gender-related differences can be observed (Tab. 5-1).

Due to compulsory education in Germany, all girls and boys attend a general education school, usually for at least 9 or 10 years. Inequalities in school attendance are found largely only after the common primary school as students move into secondary education; over the last 20 years a consistently higher proportion of girls in Germany have attended the *Gymnasium* (academic track). This trend is also reflected in the qualifications achieved in the general education schools (Tab. 5-2). Looking at the years 2004 and 2012, the share of girls who left school without a *Hauptschulabschluss* was, at 6 per cent in 2004 and 5 per cent in 2012, significantly lower than that of boys, at 11 per cent in 2004 and 7 per cent in 2012. The share of girls who achieved the *Hauptschulabschluss* was 26 per cent in 2004 and 20 per cent in 2012, while a larger share of boys than girls obtained the *Hauptschulabschluss*, at 34 per cent in 2004 and 27 per cent in 2012. Conversely, in both years a significantly greater share of girls attained the *Allgemeine Hochschulreife*, which formally certifies eligibility to study any subject at any university or other institution of higher education in Germany. Widening this to include the opportunities available in Germany to obtain a higher education entrance qualification outside the general education school sector, including the *Fachhochschulreife*, which qualifies for admission to the universities of applied sciences, in 2012 63 per cent of female school-leavers obtained this qualification against only 54 per cent of male school-leavers (Tab. 5-3).

In terms of numbers actually starting a course of study, in 2012 for the first time the share of new female students was higher than that of new male students, while in 2005 numbers were still equal (Tab. 5-3). With regard to those entering vocational training, no gender-based differences could be detected on the whole in recent years. The shares of men and women among new entrants in vocational training remained balanced in both 2012 and 2004. However, there are clear differences when the figures are broken down into full-time vocational education at school, and dual vocational education and training. While the share of female new entrants in dual vocational education and training in 2012 was 41 per cent, at 72 per cent they were over-represented among new entrants into full-time vocational education at school.

As a whole Germany has succeeded in making up the past disadvantages of women in educational participation and in the level of education in the various education sectors. However, it should be noted that considerable differences can still be identified in terms of subsequent employment opportunities and career positions, and these may adversely affect the income and employment stability of women.

Gender distribution of teachers in general education and vocational schools

In terms of the share of male and female teachers, a clear trend towards feminisation has taken place in Germany in recent decades. In 2012 male/female teacher ratios were balanced only in the field of vocational schools (Tab. 5-4). The lowest proportion of male teachers was in the primary school sector (12 per cent). At the *Gymnasium*, the proportion of male teachers was 43 per cent, at other types of secondary school 34 per cent. The share of male teachers at all school types overall fell by 5 percentage points between 2002 and 2012.

Social inequalities in participation in education and competence development

One of the central results of the PISA 2000 study was the, by international standards, particularly close relationship between social background and educational achievement. At 45 performance points per change in standard deviation for reading literacy, the social gradient, which depicts the relationship between socioeconomic status (ISEI, see Ganzeboom, de Graaf & Treiman, 1992; Ganzeboom & Treiman, 2003) and the level of competence achieved, was particularly narrow in Germany (see Tab. 5-5). Socioeconomic status explained 16 per cent of the variance in reading literacy. In 2009, at just 35 points (explained variance 13%), the social gradient was significantly lower than nine years ago, but is still slightly above the OECD average. For numeracy no corresponding decline was discernible (Tab. 5-6). Thus, the social gradient in mathematics was 38 points in 2003 and 40 points in 2012 (explained variance of 16% in each case), which was still significantly higher than the OECD average.

Changes in the degree of interrelation between participation in education and social origin can be shown with the aid of the PISA data on the classification of social origin in Germany according to Erikson, Goldthorpe and Portocarero (EGP, cf. Erikson, Goldthorpe & Portocarero, 1979. Erikson & Goldthorpe, 2002). This considers attendance rates at the *Gymnasium*, on the one hand, and the other secondary schools as a whole on the other hand, focusing on changes between the years 2000 and 2012 (Tab. 5-7). Overall, the *Gymnasium* attendance rate increased over that period from 28 to 36 per cent. Particularly strong and statistically significant increases in secondary school participation were determined for students from the EGP class of skilled workers (V, VI) (from 16 to 27 per cent), and for unskilled and semi-skilled workers (VII) (from 11 to 19 per cent), while for the upper and lower service class (I, II) there were no statistically significant changes. Despite these differential changes in the individual EGP classes, *Gymnasium* participation in the upper EGP classes was still substantially higher than in the lower EGP classes, so that significant differences in participation in education as a function of social origin are still to be assumed.

In the area of secondary schools, therefore, in terms of both participation in education and competence acquisition there is to some extent evidence of a decline in social disparities in recent years. Nevertheless, there remain significant correlations between social background and educational achievement.

Goal 6 – Quality of education

Teacher training (teaching qualification in mathematics)

In the question of to what extent students are taught by teachers with appropriate subject-specific education, data for mathematics are available from the review of the achievement of national educational standards in comparisons between the *Länder* (Tab. 6-1). In the primary school sector, 27 per cent of teachers taught mathematics without a subject-specific teaching qualification in the 2010/11 school year. In the lower secondary sector, the corresponding share (2011/12 school year) was 14 per cent, and thus significantly lower.

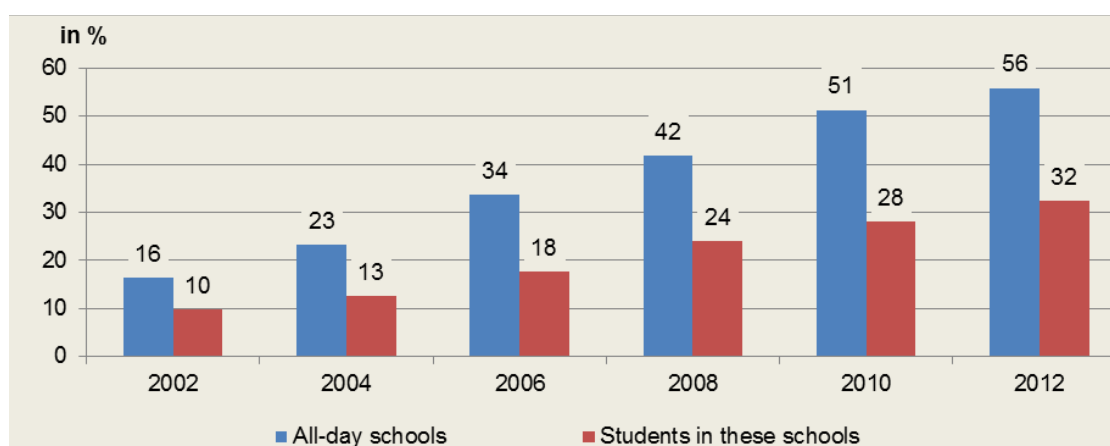
Class size and student-teacher ratio

The number of children per class declined slightly over the period 2002–2012 in the pre-school sector, at primary school and at lower secondary level (Tab. 6-2). The decrease in class size corresponds to the demographic trend and the associated long decline in student numbers. In the general education upper secondary sector it is not possible to calculate class sizes as students can only be assigned to specific learning groups to a limited extent. Using the student-teacher ratio instead, changes can be seen in all education sectors (including the general upper secondary level), clearly showing that the student-teacher ratio has fallen substantially in recent years (Tab. 6-3).

All-day programmes at school

The number of schools offering all-day programmes in Germany has increased significantly in recent years, from just under 5,000 in 2002 to more than 15,700 in 2012 (Fig. 6-1).

Fig. 6-1: All-day schools in primary and lower secondary education from 2002 to 2012* (percentage of all schools) and students within these schools (percentage of all students)



* Missing data on private schools in Bremen (to 2008), Hessen, Lower Saxony und Saxony Anhalt (from 2006).

Source: Standing Conference of the Ministers of Education and Cultural Affairs (2014), *Allgemein bildende Schulen in Ganztagsform in den Ländern in der Bundesrepublik Deutschland*

While the proportion of schools with all-day programmes in 2002 was about 16 per cent, in 2012 56 per cent of all schools had an all-day programme available. The expansion of all-day programmes was higher than average at schools offering several educational tracks, at *Gymnasien* and at *Hauptschulen*. Correspondingly, the number and share of students attending schools with all-day

programmes increased significantly. While in 2002 around 10 per cent of students attended establishments with all-day programmes, in 2012 this was already more than 30 per cent. Most of these all-day programmes are, however, open programmes in which students and/or their parents decide whether, and to what extent, they participate each school year. The impact of all-day programmes at school depends on their quality and the intensity of student participation (Fischer & Klieme 2013; Fischer & Züchner 2014). In view of the quantitative expansion which has taken place and is still ongoing in the *Länder*, the focus is currently above all on measures to ensure and improve the quality of all-day programmes in order to meet the expectations associated with their expansion.

Section 5

Future challenges

The developments outlined show that a whole series of reforms has been launched in the German education system in recent years. This is most evident in the expansion of, and institutional differentiation in, early childhood education, the further differentiation of the general education and vocational schools, and the expansion of all-day programmes at school, but also in the sharp increase in the numbers of those who have qualified to study in higher education.

In many education sectors, under the pressure of increased demand, the focus was on the quantitative expansion of the education institutions. Even against the background of the continuing falling demographic trend, which make it imperative to better use all educational potentials, qualitative aspects of the design of educational institutions and educational processes are becoming increasingly important. These can be described as challenges in the following priority fields of action:

Early childhood education and care

In the course of the quantitative expansion of the primary sector, quality issues have largely remained unanswered; these include, for instance, staffing ratios appropriate to children and age group, or the group age structure best suited to care provision. Current discussions are focusing on the need for more places, but also on the side-effects of the expanded provision for the under-threes and the legal entitlement to such offers. The differences emerging at local community level in parental preferences for different types and extents of care provision, make local needs analyses necessary above all. The planning of future expansion must therefore take due account of the heterogeneous demographic trend in the regions, and of the frequently associated unequal financial resources of local authorities, which is already leading to considerable imbalances in the quantity and quality of care provision.

Quality of all-day schools

Following the international trend, demand by the German population for all-day programmes at school has increased significantly in recent years. The degree of expansion is very different in the *Länder* and local communities, with clear East-West differences and regional differences in the *Länder*. Differentiated quality criteria for the organisation of schools with all-day programmes, and common standards for all school types and regions that take into account both the specifics of the individual school and the local school context, the multi-professional composition of the teaching staff, and the targeted inclusion of non-school stakeholders, appear vital.

Reduction of social disparities

Changes in school structures, which tend to result in a two-pillar model, have created the basic prerequisites for securing a broad, community-based education offer in the secondary school sector in many *Länder*, and allowed flexibility in educational tracks. Nevertheless, the social disparities in educational attainment which have been documented for years are proving extremely persistent, although the extent of such disparities has been reduced slightly in terms of both educational

participation and competence acquisition. Given the demographic trend, efforts to reduce social inequalities in particular need to be intensified.

Transition from general education to vocational training

The German vocational education and training system is faced with a decline in the numbers of training places on offer, and continuing serious problems in the transition from general education schools into a fully qualifying vocational training at school so that, especially for young people with special needs, better ways of transitioning to vocational training need to be provided. The current range of measures in the transition sector have only offered a limited solution to the professional integration of young people with at most a *Hauptschulabschluss* and/or a migrant background. It is therefore important to increasingly raise the question of how to systemise teaching content and at the same time of how to coordinate the transition system in political terms. Answering this question requires multi-institutional design concepts which can bring together institutions of the education system (general and vocational schools), of the social system (youth welfare services), and of the labour market (companies, employment agencies), each with their own guiding principles. For young people with at most a *Hauptschulabschluss* and/or with a migrant background in particular, new forms of transition must be developed. Given the demographic trend, and with regard to the United Nations Convention on the Rights of Persons with Disabilities, such new developments should be given a high political priority.

Developments in the higher education sector

In light of the ongoing discussion about the knowledge society, there have long been calls for an expansion of higher education. These calls have won public support not least as a result of the international criticism of the relatively low student and graduate rates in comparison with other early industrialised western societies, as shown each year for example by the OECD in “Education at a Glance”. The Federation and the *Länder* have agreed a target of 40 per cent as a benchmark for the rate of new entrants in higher education. This quota has been exceeded each year since 2008 and has reached a share of over 50 per cent of the age cohort each year since 2011. The increase in the rate of new entrants led to a further increase in funding for the Higher Education Pact by the Federation and the *Länder*. University graduation rates, the other critical point of the German higher education system, have increased significantly since the mid-1990s and are now, at over 30 per cent, approaching the OECD average. However, the problem of excessively high drop-out rates remains serious, especially in Bachelor’s study programmes, which have now been implemented nationwide.

Inclusion of people with disabilities

The United Nations Convention on the Rights of Persons with Disabilities represents binding international law. It commits to the creation of an inclusive education system at all levels and in all education sectors. Its implementation in Germany has met a number of structural problems: structural contradictions that complicate the process of inclusion arise from the heterogeneity of diagnoses and the resulting allocation of students to a specific type of educational institution, from the traditionally established institutional conditions, aiming primarily at separate education programmes as the best possible places for promoting people with disabilities, as well as from different professional self-conceptions. The respective diagnostic procedures used therefore lead to different student allocations and scarcely comparable results. Moreover, depending on the type of

disability, these take very different forms in the individual *Länder* and regions. The different responsibilities and approaches in the interaction of the social system and the education system impact negatively on the people concerned. This is particularly true of the approval and allocation of resources. Assignments specific to the individual and those of a systemic nature require clear coordination. In addition, initial, further and continuing training for teaching staff must increasingly make inclusion an integral part of the training. Currently, the staff employed in the education and support of people with disabilities do not always have the relevant specialist qualifications.

To address these challenges, therefore, concepts which extend across education sectors are also essential because institutional changes in one education sector can lead to unintended consequences for others. Here, policymakers face the task of organising the necessary coordination processes between different educational levels and stakeholders. To this end it seems important that the Federation and the *Länder* agree on consensual goals which can be operationalised and will allow appropriate measures to be taken in the fields of activity indicated, and guarantee the implementation of an inclusive education system in Germany.

Bibliography

- Artelt, C., Stanat, P. Schneider, W. & Schiefele, U. (2001). Lesekompetenz. Testkonzeption und Ergebnisse. Opladen 2001 (gedruckt; Sammelwerksbeitrag) In J. Baumert, E. Klieme, M. Neubrand, M. Prenzel, U. Schiefele, W. Schneider, P. Stanat, K.-J. Tillmann & M. Weiß (Hrsg.), PISA 2000. Basiskompetenzen von Schülerinnen und Schülern im internationalen Vergleich (S. 323-407). Opladen: Leske + Budrich.
- Autorengruppe Bildungsberichterstattung (2008). Bildung in Deutschland 2008. Ein indikatorengestützter Bericht mit einer Analyse zu Übergängen im Anschluss an den Sekundarbereich I. Bielefeld: W. Bertelsmann.
- Autorengruppe Bildungsberichterstattung (2010). Bildung in Deutschland 2010. Ein indikatorengestützter Bericht mit einer Analyse zu Perspektiven des Bildungswesens im demografischen Wandel. Bielefeld: W. Bertelsmann.
- Autorengruppe Bildungsberichterstattung (2012). Bildung in Deutschland 2012. Ein indikatorengestützter Bericht mit einer Analyse zur kulturellen Bildung. Bielefeld: W. Bertelsmann.
- Autorengruppe Bildungsberichterstattung (2014). Bildung in Deutschland 2014. Ein indikatorengestützter Bericht mit einer Analyse zur Bildung von Menschen mit Behinderungen. Bielefeld: W. Bertelsmann.
- Baumert, J., Bos, W. & Lehmann, R. (Hrsg.). (2000a). TIMSS/III. Dritte Internationale Mathematik- und Naturwissenschaftsstudie – Mathematische und naturwissenschaftliche Bildung am Ende der Schullaufbahn: Bd. 1. Mathematische und naturwissenschaftliche Grundbildung am Ende der Pflichtschulzeit. Opladen: Leske + Budrich.
- Baumert, J., Bos, W. & Lehmann, R. (Hrsg.). (2000b). TIMSS/III. Dritte Internationale Mathematik- und Naturwissenschaftsstudie – Mathematische und naturwissenschaftliche Bildung am Ende der Schullaufbahn: Bd. 2. Mathematische und physikalische Kompetenzen am Ende der gymnasialen Oberstufe. Opladen: Leske + Budrich.
- Baumert, J., Cortina, K. & Leschinsky, A. (2003). Grundlegende Entwicklungen und Strukturprobleme im allgemein bildenden Schulwesen. In Cortina, K., Baumert, J., Leschinsky, A. Mayer, Karl Ulrich & Trommer, L. (Hrsg.) Das Bildungswesen in der Bundesrepublik Deutschland (S. 90). Reinbek: Rowohlt.
- Köller, O., & Baumert, J. (2001). Leistungsgruppierungen in der Sekundarstufe I: Ihre Konsequenzen für die Mathematikleistung und das mathematische Selbstkonzept der Begabung. Zeitschrift für Pädagogische Psychologie, 15, 99-110.
- Baumert, J. & Maaz, K. (2010). Bildungsungleichheit und Bildungsarmut – Der Beitrag von Large-Scale-Assessments. In G. Quenzel & K. Hurrelmann (Hrsg.), Bildungsverlierer. Neue Ungleichheiten (S. 159-179). Wiesbaden: VS-Verlag für Sozialwissenschaft.
- Baumert, J. & Schümer, G. (2001). Familiäre Lebensverhältnisse. Bildungsbeteiligung und Kompetenzerwerb. In J. Baumert, E. Klieme, M. Neubrand, M. Prenzel, U. Schiefele, W. Schneider, P. Stanat, K.-J. Tillmann & M. Weiß (Hrsg.), PISA 2000. Basiskompetenzen von Schülerinnen und Schülern im internationalen Vergleich (S. 323-407). Opladen: Leske + Budrich.
- Becker, M. (2009). Kognitive Leistungsentwicklung in differenziellen Lernumwelten: Effekte des gegliederten Sekundarschulsystems in Deutschland. Berlin: Max-Planck-Institut für Bildungsforschung.
- Blossfeld, H.-P. & Shavit, Y. (1993). Persisting barriers. Changes in educational opportunities in thirteen countries. In Y. Shavit & H.-P. Blossfeld (Eds.), Persistent inequality. Changing educational attainment in thirteen countries (pp. 1-23). Boulder: Westview Press.
- Dahrendorf, R. (1965). Bildung ist Bürgerrecht. Plädoyer für eine aktive Bildungspolitik. Hamburg: Nannen.
- Ditton, H. (1992). Ungleichheit und Mobilität durch Bildung. Theorie und empirische Untersuchung über sozialräumliche Aspekte von Bildungsentscheidungen. Weinheim: Juventa.
- Erikson, R., Goldthorpe, J. H. & Portocarero, L. (1979). Intergenerational class mobility in three Western European societies: England, France and Sweden. British Journal of Sociology, 30 (4), 415-441.
- Erikson, R. & Goldthorpe, J. (2002). Intergenerational Inequality. A Sociological Perspective", Journal of Economic Perspectives, vol. 16, n° 3, pp. 31-44.

- Fischer, N. & Klieme, E. (2013). Quality and effectiveness of German all-day schools: Results of the study on the development of all-day schools. In J. Ecarius, E. Klieme, L. Stecher & J. Woods (Eds.), *Extended Education – an International Perspective* (p. 27-52). Opladen: Budrich.
- Ganzeboom, H. B. G., DeGraaf, P. M., & Treiman, D. J. & DeLeeuw, J. (1992). A standard international socio-economic Index of occupational status. *Social Science Research*, 21 (1), 1-56.
- Ganzeboom, H. B. G. & Treiman, D. J. (2003). Three internationally standardised measures for comparative research on occupational status. In J. H. P. Hoffmeyer-Zlotnik & C. Wolff (Eds.), *Advances in cross-national comparison. A European working book for demographic und socio-economic variables* (pp. 159-193). New York: Kluwer.
- Grimm, S. (1966). *Die Bildungsabstinenz der Arbeiter. Eine soziologische Untersuchung*. München: Barth.
- Grotluschen, A. & Rieckmann, W. (2011). *leo. – Level-One Studie. Die Literalität von Erwachsenen auf den unteren Kompetenzniveaus*. Presseheft. Hamburg.
- Handl, J. (1985). Mehr Chancengleichheit im Bildungssystem: Erfolg der Bildungsreform oder statistisches Artefakt? *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 37 (4), 698-722.
- Klieme, E., Neubrand, M. & Lüdtke, O. (2001). Mathematische Grundbildung: Textkonzeption und Ergebnisse. In J. Baumert, E. Klieme, M. Neubrand, M. Prenzel, U. Schiefele, W. Schneider, P. Stanat, K.-J. Tillmann & M. Weiß (Hrsg.), *PISA 2000: Basiskompetenzen von Schülerinnen und Schülern im internationalen Vergleich*. Opladen: Leske + Budrich.
- Kultusministerkonferenz (2002). *PISA 2000 – Zentrale Handlungsfelder. Zusammenfassende Darstellung der laufenden und geplanten Maßnahmen in den Ländern*.
- Köhler, H. (1992). *Bildungsbeteiligung und Sozialstruktur in der Bundesrepublik. Zu Stabilität und Wandel der Ungleichheit von Bildungschancen*. Berlin: Max-Planck-Institut für Bildungsforschung Berlin (Studien und Berichte, 53).
- Köller, O., Baumert, J., Cortina, K. S., Trautwein, U., & Watermann, R. (2004). Öffnung von Bildungswegen in der Sekundarstufe II und die Wahrung von Standards: Analysen am Beispiel der Englischleistungen von Oberstufenschülern an integrierten Gesamtschulen, beruflichen und allgemein bildenden Gymnasien. *Zeitschrift für Pädagogik*, 50, 679-700.
- Konsortium Bildungsberichterstattung (2006). *Bildung in Deutschland. Ein indikatorengestützter Bericht mit einer Analyse zu Bildung und Migration*. Bielefeld: W. Bertelsmann
- Maaz, K. (2006). *Soziale Herkunft und Hochschulzugang. Effekte institutioneller Öffnung im Bildungssystem*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Meulemann, H. (1992). Expansion ohne Folgen? Bildungschancen und sozialer Wandel in der Bundesrepublik. In W. Glatzer (Hrsg.), *Entwicklungstendenzen der Sozialstruktur* (S. 123-156). Frankfurt a.M.: Campus.
- Peisert, H. & Dahrendorf, R. (1967). *Der vorzeitige Abgang vom Gymnasium. Studien und Materialien zum Schulerfolg an den Gymnasien in Baden-Württemberg 1953-1963*. Villingen: Neckar-Verlag (Schriftenreihe des Kultusministeriums Baden-Württemberg zur Bildungsforschung, Bildungsplanung, Bildungspolitik, Reihe A Nr. 6).
- Picht, G. (1964). *Die deutsche Bildungskatastrophe. Analyse und Dokumentation*, Freiburg i. Br. 1964, 2. Aufl., München 1965.
- Prenzel, M., Rost, J., Senkbeil, M. Häußler, P. & Klopp, A. (2001). Naturwissenschaftliche Grundbildung: Textkonzeption und Ergebnisse. In J. Baumert, E. Klieme, M. Neubrand, M. Prenzel, U. Schiefele, W. Schneider, P. Stanat, K.-J. Tillmann & M. Weiß (Hrsg.), *PISA 2000: Basiskompetenzen von Schülerinnen und Schülern im internationalen Vergleich*. Opladen: Leske + Budrich.
- Züchner, I. & Fischer, N. (2014). Kompensatorische Wirkungen von Ganztagschulen - Ist die Ganztagschule ein Instrument zur Entkopplung des Zusammenhangs von sozialer Herkunft und Bildungserfolg? *Zeitschrift für Erziehungswissenschaft*, 17, 349-367..

Annex

Tab. 1-1: Number of day care centres 2006 to 2013 for Eastern Germany and Western Germany

| Day Care Centres | 2006 | 2008 | 2010 | 2012 | 2013 | Change | |
|---|--------|--------|--------|--------|--------|--------------|--------------|
| | | | | | | 2013 to 2006 | 2013 to 2012 |
| | Number | | | | | | Percentage |
| Germany | | | | | | | |
| Total | 45,252 | 46,543 | 47,412 | 48,308 | 48,798 | +7.8 | +1.0 |
| Number of day care centres for children age 3 and below | 605 | 1,006 | 1,386 | 1,631 | 1,725 | +185.1 | +5.8 |
| Western Germany | | | | | | | |
| Total | 36,313 | 37,526 | 38,247 | 38,940 | 39,308 | +8.2 | +0.9 |
| Number of day care centres for children age 3 and below | 516 | 928 | 1,299 | 1,525 | 1,612 | +212.4 | +5.7 |
| Eastern Germany | | | | | | | |
| Total | 8,939 | 9,017 | 9,165 | 9,368 | 9,490 | +6.2 | +1.3 |
| Number of day care centres for children age 3 and below | 89 | 78 | 87 | 106 | 113 | +27.0 | +6.6 |

Source: Federal Statistical Office and statistical offices of the *Länder*, Child and Youth Aid Statistics; population statistics, own calculations

Tab. 1-2: Number of child minders and number of children which are minded 2006 and 2013

| Year | Total | Minded children | | | | |
|---------------------|---------|-----------------|------|------|------|------------|
| | | 1 | 2 | 3 | 4 | 5 and more |
| | Number | Percentage | | | | |
| 2013 | 43,953 | 23.2 | 20.1 | 16.3 | 14.6 | 25.7 |
| 2006 | 30,427 | 47.2 | 23.9 | 13.6 | 7.3 | 8.0 |
| Change 2006 to 2013 | +13,526 | -24.0 | -3.8 | +2.7 | +7.3 | +17.8 |

Source: Federal Statistical Office and statistical offices of the *Länder*, Child and Youth Aid Statistics, own calculations

Tab. 1-3: Enrollment* in day care centres 2006 und 2013, by type of day care, age of children, Eastern and Western Germany (Percentage)**

| Age group | 2006 | | | 2013 | | |
|-----------------------|---------------------|--------------------------------|---------------|---------------------|--------------------------------|---------------|
| | Total ¹⁾ | Thereof | | Total ¹⁾ | Thereof | |
| | | Day care centres ¹⁾ | Child minding | | Day care centres ¹⁾ | Child minding |
| | Percentage | | | | | |
| Germany | | | | | | |
| 3-year-olds and below | 13.6 | 12.1 | 1.6 | 29.3 | 24.8 | 4.5 |
| 3- to 6-year-olds | 87.6 | 87.1 | 0.5 | 94.1 | 93.5 | 0.6 |
| Western Germany | | | | | | |
| 3-year-olds and below | 8.0 | 6.8 | 1.2 | 24.2 | 19.8 | 4.3 |
| 3- to 6-year-olds | 86.8 | 86.2 | 0.5 | 93.7 | 93.2 | 0.5 |
| 5-year-olds | 93.4 | 93.0 | 0.4 | 98.1 | 97.9 | 0.2 |
| Eastern Germany | | | | | | |
| 3-year-olds and below | 39.3 | 36.2 | 3.2 | 49.8 | 44.5 | 5.3 |
| 3- to 6-year-olds | 91.9 | 91.2 | 0.6 | 95.7 | 95.0 | 0.6 |

* The enrolment share divides the number of children in day care and child minders by the population of corresponding age at December 31 of the previous year.

** Children enrolled both in day care centres and children minders were counted twice until 2011. From 2012 on, these children are excluded from the calculation.

1) The categories 3- to 6-year-olds and 5-year-olds take children into account which attend pre-primary institutions or school.

Source: Federal Statistical Office and statistical offices of the *Länder*, Child and Youth Aid Statistics; school statistics; population statistics, *Behörde für Arbeit, Soziales, Familie und Integration der freien Hansestadt Hamburg* (BASFI) (Authority for labor, social affairs, family and integration of the Hanseatic City Hamburg), own calculations

Tab. 1-4: Children in day care* 2006 and 2013, by minded time, age and group of Länder

| Group of Länder | 2006 | | 2013 | |
|------------------------------------|------------------------------|---------------------------|------------------------------|-----------------------------|
| | Children in day care centres | More than 7 hours per day | Children in day care centres | More than 35 hours per week |
| | Number | Percentage | Number | Percentage |
| | 3-years-olds and below | | | |
| Germany | 286,905 | 47.7 | 596,289 | 51.9 |
| Western Germany | 137,667 | 32.5 | 394,148 | 40.1 |
| Eastern Germany | 149,238 | 61.7 | 202,141 | 74.8 |
| Children aged 3 to school entrance | | | | |
| Germany | 2,358,948 | 25.2 | 2,261,237 | 43.6 |
| Western Germany | 1,947,891 | 17.6 | 1,808,162 | 36.3 |
| Eastern Germany | 411,057 | 61.3 | 453,075 | 72.9 |

* Children enrolled both in day care centres and children minders were counted twice in 2006. In 2013 these children are excluded from the calculation.

Children whose day care is interrupted during lunchtime are counted to the category of 5 to 7 hours day care time, even if the actual day care time is longer than 7 hours. However, the Educational Reporting 2012 treats interrupted day care time as a separate category, resulting in different values for the 5 to 7 hours day care time category.

Source: Federal Statistical Office and statistical offices of the *Länder*, Child and Youth Aid Statistics, Research Data Centres of the Federal Statistical Office and the statistical offices of the *Länder*, own calculations

Tab. 1-5: Expenditures in education 2005 and 2011*, by education sector and financing sectors

| Data area | | 2005 | | | 2011 | | |
|-----------|---|-----------------|---------------|----------|-----------------|---------------|----------|
| | | Total | Public sector | % of GDP | Total | Public sector | % of GDP |
| | | in billion Euro | | | in billion Euro | | |
| A | Education budget in international demarcation (ISCED) | 127.6 | 101.6 | 5.7 | 154.3 | 130.0 | 5.9 |
| A30 | Expenditure on educational institutions operated by public and private bodies | 114.5 | 93.6 | 5.1 | 133.9 | 115.2 | 5.1 |
| A31 | ISCED 0 – Preprimary ¹⁾ | 11.3 | 8.1 | 0.5 | 15.3 | 12.3 | 0.6 |
| A32 | ISCED 1–4 – Primary levels school years - Post secondary non-tertiary sector | 76.2 | 62.4 | 3.4 | 82.1 | 72.2 | 3.1 |
| | Among | | | | | | |
| | Schools of general education | 50.1 | 48.7 | 2.2 | 61.0 | 58.9 | 2.3 |
| | Vocational Schools ²⁾ | 7.5 | 7.3 | 0.3 | 8.5 | 8.3 | 0.3 |
| | Dual-system vocational schools ³⁾ | 16.9 | 4.6 | 0.8 | 10.3 | 2.7 | 0.4 |
| A33 | ISCED 5/6 – Tertiary sector ⁴⁾ | 24.6 | 20.7 | 1.1 | 34.3 | 28.6 | 1.3 |
| | Among | | | | | | |
| | Research and Development at universities and colleges of higher education | 9.2 | 7.5 | 0.4 | 13.4 | 11.0 | 0.5 |
| A34 | Not allocated by ISCED-level ⁵⁾ | 2.4 | 2.4 | 0.1 | 2.2 | 2.1 | 0.1 |
| A40 | Expenditure of private households on educational goods and services outside of educational institutions | 5.0 | 0.0 | 0.2 | 5.6 | 0.0 | 0.2 |
| A50 | Expenditure to promote the attendance of ISCED-classified educational institutions | 8.1 | 8.1 | 0.4 | 14.7 | 14.7 | 0.6 |
| B | Additional education-relevant expenditure in national demarcation | 14.0 | 6.4 | 0.6 | 21.5 | 10.8 | 0.8 |
| B10 | Vocational training in enterprises ⁶⁾ | 7.9 | 1.2 | 0.4 | 10.2 | 1.6 | 0.4 |
| B20 | Expenditure on other educational opportunities | 4.8 | 3.9 | 0.2 | 10.5 | 8.4 | 0.4 |
| | Among | | | | | | |
| | day care | 1.5 | 1.1 | 0.1 | 6.0 | 4.6 | 0.2 |
| B30 | Assistance for participation in training and further education ⁷⁾ | 1.3 | 1.3 | 0.1 | 0.8 | 0.8 | 0.0 |
| A+B | Education budget total | 141.6 | 108.0 | 6.3 | 175.7 | 140.7 | 6.7 |

** Calculation considers payment transactions between regional authorities (*Gebietskörperschaften*) (initial funds), Demarcation after the concept 2009. In sums there may be deviations due to roundings of the subtotals.

1) Kindergartens, pre-school classes, school kindergartens.

2) Excluding specialised colleges, specialised academies, vocational academies, schools of the health-care system (tertiary system).

3) Expenditure in the areas of company-based, extra-company and inter-company vocational education in the dual-system without *Berufsschulen*, included subsidies of the *Bundesagentur für Arbeit*.

4) Excluded: expenditure for health treatments; included expenditures for specialised colleges, specialised academies, vocational academies, schools of the health-care system (tertiary system), research and development in universities, *Studentenwerke*.

5) Expenditures are not allocated by ISCED-level (included esteemed expenditure for training for civil servants, service of administration and *Studienseminare*).

6) Estimation of costs for intern and extern training (without costs for personal) based on the number of employed persons (without trainees) and the averaged costs for training per person (compare continuing vocational training survey – CVTS). There may be double countings of the extern further trainings (e.g. at universities) which cannot be adjusted.

7) Expenditure of the *Bundesagentur für Arbeit* for further vocational training. There may be double countings (e.g. vocational further training and dual-system training) which cannot be adjusted.

8) Calculated according to the methods of the *FuE-Statistik* (in accordance with OECD notification/Frascati handbook).

Source: Federal Statistical Office and statistical offices of the *Länder*, *Bildungsbudget* (education budget) 2005/06 and *Budget für Bildung, Forschung und Wissenschaft* (education, research and science budget) 2011/12

Tab. 1-6: Educational staff in day care centres and state approved child minders 2006/2007 and 2013 (number)

| | Educational staff in day care centres | | Child minders | |
|-----------------|---------------------------------------|---------|---------------|--------|
| | 2007 | 2013* | 2006 | 2013 |
| | Number | | | |
| Germany | 326,310 | 444,232 | 30,427 | 43,953 |
| Western Germany | 255,718 | 350,967 | 25,552 | 37,496 |
| Eastern Germany | 70,592 | 93,265 | 4,875 | 6,457 |

* Staff concerned exclusively with school children and management staff is not taken into account.

Staff with primarily management tasks and secondary tasks as team leaders, educational assistants, assistants to children with handicaps, or group-hoppers are categorised as educational staff. Differing values in B2 occur due to different categorisations.

Source: Federal Statistical Office and statistical offices of the *Länder*, Child and Youth Aid Statistics; Research Data Centres of the Federal Statistical Office and the statistical offices of the *Länder*, own calculations

Tab. 1-7: Group size, staffing ratio 2013, by type of group* and group of *Länder* (Median)**

| Group of <i>Länder</i> | Rather homogeneous age groups | | Rather heterogeneous age groups | | | Groups for children in the range of 3 years to school entry |
|---|-------------------------------|----------------------------|---------------------------------|-----------------------------|--------------------------------|---|
| | Only 3-year-olds and below | Only 4-year-olds and below | Children of all ages | Children older than 2 years | | |
| | | | | With one or two 2-year-olds | With three or more 2-year-olds | |
| Median (full-time employment equivalents/full-day day care equivalents) | | | | | | |
| 2013 | | | | | | |
| Germany ¹⁾ | 4.6 | 4.7 | 7.1 | 8.9 | 8.1 | 9.6 |
| Western Germany | 3.8 | 4.1 | 6.6 | 8.7 | 7.9 | 9.1 |
| Eastern Germany ¹⁾ | 6.3 | 7.9 | 10.5 | 12.1 | 10.8 | 12.7 |

* Institutions without a fixed group structure are not reported, since a staffing ratio is not meaningful here.

** Except the hours spent for management. The reported staffing ratio does not represent the actual teacher-child relation in the groups.

1) Berlin is excluded: Statistically, virtually all Berlin child care facilities are recorded as operating without a fixed group structure, regardless if facilities operate in a fixed group scheme. Due to that fact, no further assertions are possible on the use of group structures by children below the age of 3 and how deployment in these groups is managed.

Source: Federal Statistical Office and statistical offices of the *Länder*, Child and Youth Aid Statistics; Research Data Centres of the Federal Statistical Office and the statistical offices of the *Länder*, own calculations

Tab. 2-1: Percentage of late entrants in the school years 2000/01 to 2012/13, by gender (percentage)

| Year | Total | Thereof | |
|-----------------------|-------|---------|-------|
| | | Men | Women |
| 2000/01 | 7.1 | 8.8 | 5.2 |
| 2001/02 ¹⁾ | 6.8 | 8.5 | 5.0 |
| 2002/03 | 6.4 | 7.8 | 4.9 |
| 2003/04 | 5.6 | 7.0 | 4.1 |
| 2004/05 | 5.7 | 7.1 | 4.1 |
| 2005/06 | 4.8 | 5.8 | 3.7 |
| 2006/07 | 4.8 | 6.0 | 3.6 |
| 2007/08 | 5.5 | 6.7 | 4.2 |
| 2008/09 | 6.0 | 7.4 | 4.5 |
| 2009/10 | 6.7 | 8.1 | 5.1 |
| 2010/11 | 7.5 | 8.9 | 5.9 |
| 2011/12 | 6.0 | 7.4 | 4.5 |
| 2012/13 | 6.6 | 8.2 | 4.9 |

1) 2001 Bremen is excluded.

Source: Federal Statistical Office, Statistical Offices of the *Länder*, school statistics

Tab. 2-2: Percentage of late school entrants in the school years 2000/01 to 2012/13, by Land (percentage)

| Land | 2000/01 | 2003/04 | 2006/07 | 2009/10 | 2012/13 |
|---|------------|---------|-------------|-------------|-------------|
| | Percentage | | | | |
| Germany ¹⁾ | 7.1 | 5.6 | 4.8 | 6.7 | 6.6 |
| Western Germany ¹⁾ | 6.6 | 5.3 | 4.8 | 6.8 | 6.6 |
| Eastern Germany ²⁾ | 10.4 | 7.2 | 5.1 | 5.8 | 6.8 |
| <i>Länder with effective date 6th June 2012</i> | | | | | |
| HB | 12.2 | 4.9 | 2.3 | 2.1 | 1.9 |
| HH | 5.6 | 3.8 | 2.9 | 2.6 | 2.2 |
| HE | 7.8 | 6.5 | 7.9 | 9.7 | 9.8 |
| MV | 14.6 | 10.2 | 6.9 | 5.3 | 6.2 |
| SL | 6.4 | 5.1 | 5.2 | 4.9 | 3.0 |
| SN | 13.6 | 9.6 | 3.4 | 4.6 | 5.8 |
| ST | 7.7 | 4.2 | 3.0 | 2.0 | 2.0 |
| SH | 9.0 | 7.1 | 6.0 | 1.5 | 1.6 |
| <i>Länder with early school entrants in 2012²⁾</i> | | | | | |
| BW | 6.5 | 5.8 | 7.0 | 10.0 | 9.8 |
| BY | 4.4 | 4.0 | 6.1 | 15.3 | 11.6 |
| BE ³⁾ | 10.5 | 6.2 | • | 4.6 | 8.2 |
| BB | 7.7 | 8.0 | 14.9 | 11.0 | 11.0 |
| NI | 7.7 | 6.4 | 5.8 | 5.1 | 5.7 |
| NW | 6.6 | 4.9 | 0.9 | 0.6 | 2.4 |
| RP | 7.4 | 5.4 | 5.2 | 6.9 | 4.7 |
| TH | 7.3 | 4.9 | 6.2 | 7.9 | 6.9 |

1) In 2001 Bremen is excluded.

2) Entrants with early effective dates are highlighted in bold.

3) Late entrants were summarised in the category „Others or without information“ in Berlin in 2006.

Source: Federal Statistical Office, Statistical Offices of the *Länder*, school statistic

Tab. 2-3: Entrants with special needs in the school years 2006/07 and 2012/13, by institution

| Year | Entrants of students with special needs | | | | |
|---------|---|----------------------------|-----------------------|----------------------------|---|
| | Special Needs Schools | | Other general schools | | |
| | Number | Percentage of all entrants | Number | Percentage of all entrants | Percentage of all entrants with special needs |
| 2006/07 | 27,489 | 3.5 | 6,302 | 0.8 | 18.6 |
| 2012/13 | 23,023 | 3.3 | 11,921 | 1.7 | 34.1 |

Source: Federal Statistical Office, Statistical Offices of the *Länder*, school statistic, Special analysis for the Educational Report 2014

Tab. 2-4: Expenditure* per student in public schools and vocational schools 2001 to 2011, by groups of *Länder* (in Euro)**

| Groups of <i>Länder</i> | 2001 | 2003 | 2005 | 2007 | 2009 | 2011 |
|--------------------------------------|-------|-------|-------|-------|-------|-------|
| Germany | 4,500 | 4,600 | 4,700 | 5,000 | 5,500 | 6,000 |
| Western Germany, without city states | 4,400 | 4,500 | 4,600 | 4,800 | 5,300 | 5,800 |
| Eastern Germany, without city states | 4,200 | 4,800 | 5,000 | 5,300 | 6,000 | 6,900 |
| City states | 5,400 | 5,400 | 5,500 | 5,700 | 6,300 | 7,100 |

* The indicator comprises personnel expenditure (including imputed social contributions), other current and capital expenditure; since 2002 new budgetary classification. The scope is schools and school administrations. Data is rounded.

** Results based on calculation method 2005, that includes school administration.

Source: Federal Statistical Office, Statistical Offices of the *Länder*, expenditure by student

Tab. 3-1: Changes over time in literacy and mathematics performance (15-years-old students) (PISA scores)

| Time of assessment | Literacy | Mathematics |
|--|----------|-------------|
| Mean scores | | |
| 2000 | 484 | X |
| 2003 | 491 | 503 |
| 2006 | 508 | 504 |
| 2009 | 495 | 513 |
| 2012 | 497 | 514 |
| 2000/2003–2012 | 13 | 11 |
| Percentage of students below level II | | |
| Percentage | | |
| Changes since first inquiry | -6.1 | -3.9 |
| Percentage of students on level V and VI | | |
| Percentage | | |
| Changes since first inquiry | +0.1 | +1.2 |

Source: Klieme, E. et al. (2010), PISA 2009, p. 60, p. 62, p. 170 and p. 171; Prenzel, M. et al. (2013), PISA 2012, p. 85, p. 228 and p. 231.

Tab. 3-2: Population 2012, by qualification, age and gender (percentage)

| Age | Still in education | With certificate | | | | | Without general school certificate ⁴⁾ |
|------------|--------------------|---|---|---|---|---------------------|--|
| | | Secondary general school certificate (<i>Hauptschulabschluss</i>) ²⁾ | Certificate of a two-year full-time vocational school | Intermediate school leaving certificate | General higher education entrance qualification ³⁾ | Certificate unknown | |
| Percentage | | | | | | | |
| 2012 | | | | | | | |
| Total | | | | | | | |
| Total | 3.7 | 35.6 | 6.9 | 22.1 | 27.3 | 0.2 | 3.8 |
| 20–25 | 2.9 | 18.0 | – | 31.3 | 44.1 | 0.2 | 3.3 |
| 60–65 | – | 45.4 | 13.2 | 15.5 | 21.6 | 0.2 | 3.9 |
| Men | | | | | | | |
| Total | 3.9 | 35.5 | 7.0 | 20.0 | 29.5 | 0.2 | 3.7 |
| 20–25 | 2.9 | 22.0 | – | 31.4 | 39.5 | / | 3.7 |
| 60–65 | – | 43.3 | 12.7 | 13.0 | 27.1 | / | 3.5 |
| Women | | | | | | | |
| Total | 3.6 | 35.6 | 6.9 | 24.2 | 25.1 | 0.2 | 3.9 |
| 20–25 | 2.9 | 13.7 | – | 31.3 | 49.0 | / | 2.8 |
| 60–65 | – | 47.4 | 13.6 | 17.9 | 16.3 | / | 4.4 |
| 2004 | | | | | | | |
| Total | | | | | | | |
| Total | 4.5 | 43.6 | 7.1 | 19.3 | 21.7 | 1.0 | 2.8 |
| 20–25 | 2.7 | 22.3 | – | 34.2 | 36.2 | 1.4 | 3.1 |
| 60–65 | / | 63.7 | 2.7 | 14.6 | 15.5 | 1.1 | 2.5 |
| Men | | | | | | | |
| Total | 4.5 | 42.9 | 7.2 | 17.1 | 24.5 | 1.1 | 2.7 |
| 20–25 | 2.9 | 26.6 | – | 33.1 | 32.7 | 1.5 | 3.2 |
| 60–65 | – | 61.3 | 2.6 | 11.6 | 20.7 | 1.4 | 2.4 |
| Women | | | | | | | |
| Total | 4.4 | 44.3 | 6.9 | 21.5 | 19.1 | 0.9 | 2.9 |
| 20–25 | 2.5 | 17.9 | – | 35.4 | 39.9 | 1.2 | 3.0 |
| 60–65 | / | 65.9 | 2.8 | 17.5 | 10.4 | 0.8 | 2.5 |

1) Including persons which did not specify their general school education.

2) Including *Volksschulabschluss* (the former name for compulsory school).

3) Including qualification for specialised colleges of higher education.

4) Including qualifications based on a maximum of seven school years.

Source: Federal Statistical Office and Statistical Offices of the *Länder*, Microcensus 2004 and 2012

Tab. 3-3: New entrants in the vocational sector 2004 und 2012, by migration status and prior school education

| Sector | Total | Thereof | | Thereof with | | | | |
|------------------------------|---------|---------|---------|---|--------------------------------------|---------------------------------------|---|--|
| | | German | Migrant | No secondary general school certificate | Secondary general school certificate | Intermediate school level certificate | General higher education entrance qualification | Qualification unknown/ other qualification |
| 2012 | | | | | | | | |
| Number | | | | | | | | |
| Dual system | 505,523 | 469,831 | 16,089 | 18,033 | 141,253 | 224,394 | 116,390 | 5,453 |
| Full-time vocational schools | 212,079 | 196,308 | 11,599 | 468 | 38,045 | 120,760 | 50,818 | 1,988 |
| Transition system | 259,727 | 215,022 | 17,976 | 51,308 | 133,474 | 65,779 | 4,465 | 4,701 |
| Percentage (column) | | | | | | | | |
| Dual system | 51.7 | 53.3 | 35.2 | 25.8 | 45.2 | 54.6 | 67.8 | 44.9 |
| Full-time vocational schools | 21.7 | 22.3 | 25.4 | 0.7 | 12.2 | 29.4 | 29.6 | 16.4 |
| Transition system | 26.6 | 24.4 | 39.4 | 73.5 | 42.7 | 16.0 | 2.6 | 38.7 |
| 2004 | | | | | | | | |
| Number | | | | | | | | |
| Dual system | 535,322 | • | • | 24,942 | 151,530 | 267,395 | 86,655 | 4,800 |
| Full-time vocational schools | 211,531 | • | • | 867 | 30,746 | 136,652 | 36,795 | 6,471 |
| Transition system | 488,073 | • | • | 135,382 | 194,567 | 146,845 | 3,673 | 7,606 |
| Percentage (column) | | | | | | | | |
| Dual system | 43.3 | • | • | 15.5 | 40.2 | 48.5 | 68.2 | 25.4 |
| Full-time vocational schools | 17.1 | • | • | 0.5 | 8.2 | 24.8 | 28.9 | 34.3 |
| Transition system | 39.5 | • | • | 84.0 | 51.6 | 26.7 | 2.9 | 40.3 |

Source: Federal Statistical Office and Statistical Offices of the Länder, *Integrierte Ausbildungsberichterstattung (Schulstatistik, Hochschulstatistik, Personalstandstatistik – für Beamtenausbildung im mittleren Dienst)* (Integrated reporting on training (school statistics, higher education statistics, staffing statistics – for middle grade civil servant training), Federal Employment Agency, *Bestand von Teilnehmern in ausgewählten Maßnahmen der Arbeitsmarktpolitik mit SGB-Trägerschaft des Teilnehmers*, own calculations

Tab. 4-1: Literacy and numeracy proficiency of adults (16- to 65-years-olds) 2012, by country (score points*)

| Country | Literacy | | Numeracy | |
|----------------------------------|-----------------------------|-------|----------|-------|
| | Mean score (standard error) | | | |
| Japan | 296 | (0.7) | 288 | (0.7) |
| Finland | 288 | (0.7) | 282 | (0.7) |
| Flanders (Belgium) ¹⁾ | 275 | (0.8) | 280 | (0.8) |
| Netherlands | 284 | (0.7) | 280 | (0.7) |
| Sweden | 279 | (0.7) | 279 | (0.8) |
| Norway | 278 | (0.6) | 278 | (0.8) |
| Denmark | 271 | (0.6) | 278 | (0.7) |
| Slovak Republic | 274 | (0.6) | 276 | (0.8) |
| Czech Republic | 274 | (1.0) | 276 | (0.9) |
| Austria | 269 | (0.7) | 275 | (0.9) |
| Estonia | 276 | (0.7) | 273 | (0.5) |
| Germany | 270 | (0.9) | 272 | (1.0) |
| OECD average | 273 | (0.2) | 269 | (0.2) |
| Australia | 280 | (0.9) | 268 | (0.9) |
| Canada | 273 | (0.6) | 265 | (0.7) |
| Cyprus ¹⁾ | 269 | (0.8) | 265 | (0.8) |
| South Korea | 273 | (0.6) | 263 | (0.7) |
| England and Northern Ireland | 272 | (1.0) | 262 | (1.1) |
| Poland | 267 | (0.6) | 260 | (0.8) |
| Ireland | 267 | (0.9) | 256 | (1.0) |
| France | 262 | (0.6) | 254 | (0.6) |
| United States ¹⁾ | 270 | (1.0) | 253 | (1.2) |
| Italy | 250 | (1.1) | 247 | (1.1) |
| Spain | 252 | (0.7) | 246 | (0.6) |

* Arithmetic means and standard errors in brackets.

1) Country with unusually high level of persons without proficiency measurement: these results are interpretable only to a limited degree.

Source: Rammstedt (2013), Grundlegende Kompetenzen Erwachsener im internationalen Vergleich, Ergebnisse von PIAAC 2012, Waxmann, p. 44 and 58.

Tab. 4-2: Average literacy and numeracy proficiencies among adults (16- to 65-years-olds) 2012, by highest completed level of education (proficiency scores)*

| Highest completed level of education according to the International Standard Classification of Educational Levels (ISCED) | | Average proficiency | |
|---|---|------------------------------|-------|
| | | Mean scores (standard error) | |
| Literacy proficiency | | | |
| ISCED 1 | No secondary general school certificate (<i>Hauptschulabschluss</i>) ¹⁾ | 198 | (4.5) |
| ISCED 2 | Secondary general school certificate without vocational training | 228 | (2.8) |
| ISCED 2 | Intermediate school certificate (<i>Realschulabschluss</i>) ²⁾ without vocational training | 271 | (3.5) |
| ISCED 3A | General or discipline-specific higher education entrance qualification (<i>Abitur/Fachabitur</i>) ³⁾ without vocational training | 302 | (3.1) |
| ISCED 3B | <i>Hauptschulabschluss</i> ¹⁾ and apprenticeship in the dual system ⁴⁾ | 244 | (1.6) |
| ISCED 3B | Intermediate school leaving certificate and apprenticeship in the dual system ⁴⁾ | 268 | (1.5) |
| ISCED 4 | General higher education entrance qualification and apprenticeship in the dual system ⁴⁾ | 299 | (2.5) |
| ISCED 5B | Trade and technical school qualification | 280 | (2.3) |
| ISCED 5A/6 | Bachelor degree/Master degree of a university or a <i>Fachhochschule</i> ⁵⁾ | 301 | (1.6) |
| Numeracy proficiency | | | |
| ISCED 1 | No secondary general school certificate (<i>Hauptschulabschluss</i>) ¹⁾ | 188 | (6.3) |
| ISCED 2 | Secondary general school certificate without vocational training | 218 | (3.0) |
| ISCED 2 | Intermediate school certificate (<i>Realschulabschluss</i>) ²⁾ without vocational training | 266 | (4.1) |
| ISCED 3A | General or discipline-specific higher education entrance qualification (<i>Abitur/Fachabitur</i>) ³⁾ without vocational training | 300 | (3.6) |
| ISCED 3B | <i>Hauptschulabschluss</i> ¹⁾ and apprenticeship in the dual system ⁴⁾ | 247 | (1.8) |
| ISCED 3B | Intermediate school leaving certificate and apprenticeship in the dual system ⁴⁾ | 269 | (1.6) |
| ISCED 4 | General higher education entrance qualification and apprenticeship in the dual system ⁴⁾ | 301 | (3.2) |
| ISCED 5B | Trade and technical school qualification | 287 | (2.5) |
| ISCED 5A/6 | Bachelor degree/Master degree of a university or a <i>Fachhochschule</i> ⁵⁾ | 310 | (1.7) |

* Arithmetic means and standard errors in brackets

1) Completed primary school grades, but left school without a *Hauptschulabschluss* (general education school leaving certificate obtained on completion of grade 9) or a leaving certificate from the *Volksschule* (the former name for compulsory school)

2) General education school leaving certificate obtained on completion of grade 10 at a *Realschule* or, under certain circumstances, at other lower secondary level school types. It can also be obtained at a later stage during vocational training at upper secondary level

3) General higher education entrance qualification entitling holder to study all subjects at a higher education institution, or a discipline-specific qualification entitling the holder to study only certain subjects

4) Combination of in-company training and training at vocational school at upper secondary level

5) University of applied sciences/technical college

Source: Rammstedt (2013), Grundlegende Kompetenzen Erwachsener im internationalen Vergleich, Ergebnisse von PIAAC 2012, p. 102 and 103.

Tab. 4-3: Average literacy scores and literacy levels, by adults (16- to 65-years-olds) 2012, by socio-structural characteristics

| Gender/age/highest completed level of education/migration background/employment characteristics | Average literacy proficiency | Total | Proficiency levels ¹⁾ | | | |
|---|------------------------------|-------|----------------------------------|---------|---------|-------------------|
| | | | Level 1 and below | Level 2 | Level 3 | Level 4 and above |
| | | | Percentage | | | |
| Total | 270 | 100 | 18 | 34 | 37 | 11 |
| Gender | | | | | | |
| Men | 272 | 100 | 17 | 33 | 38 | 12 |
| Women | 267 | 100 | 19 | 36 | 36 | 9 |
| Age | | | | | | |
| 16 to 29 years-olds | 281 | 100 | 12 | 29 | 44 | 15 |
| 30 to 49 years-olds | 273 | 100 | 17 | 32 | 38 | 13 |
| 50 to 65 years-olds | 256 | 100 | 24 | 42 | 30 | 4 |
| Highest completed level of education | | | | | | |
| Low degree | 244 | 100 | 36 | 35 | 24 | / |
| Intermediate degree | 265 | 100 | 18 | 40 | 35 | 7 |
| High degree | 293 | 100 | 6 | 25 | 49 | 20 |
| Migration background | | | | | | |
| Without migration background | 276 | 100 | 14 | 32 | 41 | 13 |
| Migration background | 257 | 100 | 25 | 38 | 29 | 7 |
| Employment characteristics | | | | | | |
| Employed | 274 | 100 | 15 | 34 | 39 | 12 |
| Unemployed | 255 | 100 | / | 38 | 30 | / |
| Outside the labour force | 256 | 100 | 27 | 35 | 29 | 8 |

1) There may be deviations due to rounding figures.

2) Arithmetic mean.

Source: OECD, PIAAC 2012, own calculations.

Tab. 5-1: Participants in education and population 2012/13, by education sector, age and gender (percentage)

| Age | Participants in education | | | | | Population |
|--------|---------------------------|--------------------------------------|-----------------|--------------------|-------------------------------|------------|
| | Total | Education sector | | | | |
| | | Child day care centres ¹⁾ | General schools | Vocational schools | Higher education institutions | |
| | Percentage | | | | | |
| 0-3 | 28.6 | 28.6 | 0.0 | 0.0 | 0.0 | 2,035,685 |
| 3-6 | 94.8 | 94.2 | 0.6 | 0.0 | 0.0 | 2,072,485 |
| 6-10 | 99.2 | 7.8 | 91.5 | 0.0 | 0.0 | 2,803,290 |
| 10-16 | 99.8 | 0.0 | 99.2 | 0.6 | 0.0 | 4,648,695 |
| 16-19 | 92.3 | 0.0 | 49.9 | 41.0 | 1.4 | 2,402,875 |
| Male | | | | | | |
| 0-3 | 28.5 | 28.5 | 0.0 | 0.0 | 0.0 | 1,043,701 |
| 3-6 | 94.6 | 94.0 | 0.6 | 0.0 | 0.0 | 1,062,951 |
| 6-10 | 99.3 | 8.2 | 91.1 | 0.0 | 0.0 | 1,438,578 |
| 10-16 | 99.9 | 0.0 | 99.2 | 0.7 | 0.0 | 2,384,619 |
| 16-19 | 92.9 | 0.0 | 48.2 | 43.3 | 1.4 | 1,235,181 |
| Female | | | | | | |
| 0-3 | 28.8 | 28.8 | 0.0 | 0.0 | 0.0 | 991,984 |
| 3-6 | 95.0 | 94.4 | 0.6 | 0.0 | 0.0 | 1,009,534 |
| 6-10 | 99.1 | 7.3 | 91.9 | 0.0 | 0.0 | 1,364,712 |
| 10-16 | 99.7 | 0.0 | 99.2 | 0.6 | 0.0 | 2,264,076 |
| 16-19 | 91.7 | 0.0 | 51.7 | 38.4 | 1.5 | 1,167,694 |

1) Age limit based on year of birth; Kindergarten and children's day nursery (*Kinderkrippen*) are included.

Source: Federal Statistical Office and statistical offices of the *Länder*, Child and Youth Aid Statistics 2013, school statistics 2012/13, higher education statistics 2012/13, population statistic 2012

Tab. 5-2: Differences between boys and girls 2004 and 2012, by level of education and gender

| Level of education | Total | | Gender | | | |
|---|---------|---------|------------|------|-------|------|
| | | | Men | | Women | |
| | 2004 | 2012 | 2004 | 2012 | 2004 | 2012 |
| | Number | | Percentage | | | |
| No secondary general school certificate | 82,212 | 47,648 | 10.5 | 7.0 | 6.3 | 4.9 |
| Secondary general school certificate | 288,124 | 189,292 | 33.6 | 27.2 | 25.5 | 20.2 |
| General higher education entrance qualification | 263,509 | 357,084 | 24.4 | 36.7 | 32.3 | 46.0 |

Source: Authoring Group Educational Reporting 2006, 2012 and 2014; Federal Statistical Office and Statistical Offices of the *Länder*, school statistics, population statistic 2012, own calculations

Tab. 5-3: Differences between men and women regarding vocational training, university entrance qualification and university studies 2004 and 2012

| Data area | Total | | Differed by | | | |
|--|---------|---------|-------------|------|-------|------|
| | | | Men | | Women | |
| | 2004 | 2012 | 2004 | 2012 | 2004 | 2012 |
| | Number | | Percentage | | | |
| New entrants dual system | 535,322 | 469,830 | 57.9 | 59.5 | 42.1 | 40.5 |
| New entrants full-time vocational schools | 211,531 | 196,308 | 29.7 | 27.6 | 70.3 | 72.4 |
| New entrants dual system and vocational training total | 746,853 | 666,138 | 49.9 | 50.1 | 50.1 | 49.9 |
| Ratio of students having university entrance qualification ¹⁾ | 399,372 | 500,957 | 39.4 | 53.9 | 45.6 | 63.2 |
| Ratio of students starting university | X | X | 37.5 | 53.6 | 37.4 | 55.6 |

1) The ratio of students having university entrance qualification is based on 2005.

Source: Authoring Group Educational Reporting 2006, 2012 and 2014; Federal Statistical Office and Statistical Offices of the *Länder*, *Berufsbildungsstatistik, Bundesagentur für Arbeit, Bestand von Teilnehmerinnen und Teilnehmern in ausgewählten Maßnahmen der Arbeitsmarktpolitik mit SGB-Trägerschaft des Teilnehmers*; OECD Employment Outlook, *Arbeitskräfteerhebung*

Tab. 5-4: Full-time teachers* in general and vocational schools 2002 and 2012, by gender

| Type of school | 2002 | | | 2012 | | |
|----------------------------------|---------|------------|-------|---------|------------|-------|
| | Total | Thereof | | Total | Thereof | |
| | | Men | Women | | Men | Women |
| | Number | Percentage | | Number | Percentage | |
| Primary schools | 188,463 | 14.58 | 85.42 | 193,474 | 11.84 | 88.16 |
| Secondary schools ¹⁾ | 250,169 | 38.55 | 61.45 | 208,699 | 33.52 | 66.48 |
| Grammar schools | 155,142 | 50.80 | 49.20 | 179,348 | 42.60 | 57.40 |
| Special needs schools | 69,619 | 26.70 | 73.30 | 71,270 | 23.42 | 76.58 |
| Vocational schools ²⁾ | 116,800 | 59.56 | 40.44 | 122,883 | 51.53 | 48.47 |
| Total | 780,193 | 37.28 | 62.72 | 775,674 | 32.14 | 67.86 |

* Not considered are teachers of the following types of school: evening schools, education colleges, pre-school classes, school kindergartens, Free Waldorf Schools, evening intermediate/grammar schools.

1) Includes: orientation stage independent of school type, secondary general schools, schools with different courses of education, intermediate schools, and integrated comprehensive schools.

2) Includes: dual-system vocational schools, pre-vocational training year, basic vocational training year, vocational extension schools, full-time vocational schools (*Berufsfachschule*), specialised upper secondary schools (*Fachoberschulen*), specialised grammar schools, two-year full-time vocational schools, trade and technical schools, and specialised academies.

Source: Federal Statistical Office and Statistical Offices of the *Länder*, school statistic, own calculation

Tab. 5-5: Changes between PISA literacy performance 2000 and 2009 in social disparities*, by country

| Country | PISA 2000 | | | PISA 2009 | | |
|-----------------|-----------|-------|----------------|-----------|-------|----------------|
| | b | (SE) | R ² | b | (SE) | R ² |
| Australia | 32 | (2.1) | 10.2 | 29 | (1.1) | 9.2 |
| Austria | 35 | (2.1) | 10.9 | 37 | (2.0) | 14.2 |
| Belgium | 38 | (2.2) | 14.0 | 14 | (1.4) | 18.9 |
| Canada | 26 | (1.0) | 7.4 | 23 | (1.1) | 6.5 |
| Switzerland | 40 | (2.2) | 15.9 | 33 | (1.7) | 12.0 |
| Czech Republic | 43 | (1.7) | 15.0 | 42 | (2.1) | 14.0 |
| Germany | 45 | (2.1) | 15.8 | 35 | (2.0) | 12.5 |
| Denmark | 29 | (1.9) | 9.3 | 27 | (1.3) | 10.6 |
| Spain | 27 | (1.6) | 10.2 | 28 | (1.6) | 11.5 |
| Finland | 21 | (1.8) | 5.5 | 20 | (1.4) | 5.2 |
| France | 31 | (1.9) | 12.8 | 34 | (2.5) | 12.2 |
| United Kingdom | 38 | (1.6) | 14.8 | 33 | (1.4) | 11.5 |
| Greece | 28 | (2.5) | 10.3 | 31 | (2.2) | 11.8 |
| Hungary | 39 | (2.4) | 16.8 | 41 | (2.1) | 19.2 |
| Ireland | 30 | (1.8) | 9.9 | 30 | (1.8) | 10.0 |
| Iceland | 19 | (1.4) | 4.7 | 21 | (1.6) | 5.2 |
| Italy | 26 | (1.9) | 8.1 | 31 | (1.0) | 10.7 |
| Japan | m | m | m | 21 | (1.9) | 4.0 |
| Korea | 15 | (2.1) | 3.5 | 24 | (2.3) | 6.0 |
| Luxembourg | m | m | m | 41 | (1.4) | 17.4 |
| Mexico | 32 | (2.3) | 14.9 | 26 | (1.0) | 11.5 |
| Netherlands | m | m | m | 31 | (2.0) | 11.1 |
| Norway | 30 | (2.0) | 7.6 | 29 | (1.7) | 8.7 |
| New Zealand | 32 | (2.1) | 9.7 | 40 | (1.8) | 14.5 |
| Poland | 35 | (2.7) | 12.4 | 31 | (1.8) | 10.8 |
| Portugal | 38 | (2.1) | 15.1 | 34 | (1.9) | 15.1 |
| Slovak Republic | m | m | m | 30 | (1.8) | 9.9 |
| Sweden | 27 | (1.5) | 8.8 | 33 | (2.4) | 11.6 |
| Turkey | m | m | m | 28 | (2.3) | 10.0 |
| United States | 34 | (2.7) | 11.3 | 36 | (2.2) | 12.0 |
| Chile | 39 | (1.8) | 17.7 | 31 | (1.6) | 14.2 |
| Estonia | m | m | m | 26 | (1.8) | 9.8 |
| Israel | 34 | (2.3) | 10.6 | 36 | (2.2) | 12.3 |
| Slovenia | m | m | m | 32 | (1.4) | 13.2 |
| OECD average | 30 | (0.4) | 10.5 | 31 | (0.7) | 11.4 |

* The social background is indicated by the highest International Socio-Economic Index of Occupational Status in the family (HISEI), m: missing data. Significant differences ($p < .05$) between PISA 2000 and 2009 are highlighted in bold.

Source: PISA Konsortium Deutschland (2010), PISA 2009, p. 241

Tab. 5-6: Development of the social gradient* according to mathematic performance of 15-year-olds 2003 and 2012, by country

| Country | 2003 | | | 2012 | | |
|-----------------|--|-------|----------------------|--|-------|----------------------|
| | Increase of the social gradient (standard error) | | Variance explanation | Increase of the social gradient (standard error) | | Variance explanation |
| Australia | 29 | (1.3) | 9.6 | 28 | (1.1) | 8.1 |
| Belgium | 41 | (1.7) | 15.3 | 35 | (1.8) | 12.5 |
| Chile | ● | ● | ● | 34 | (2.1) | 17.7 |
| Denmark | 27 | (1.6) | 9.1 | 28 | (1.6) | 11.7 |
| Germany | 38 | (1.9) | 15.5 | 40 | (2.0) | 15.6 |
| Estonia | ● | ● | ● | 24 | (1.5) | 8.2 |
| Finland | 22 | (1.3) | 7.2 | 24 | (1.4) | 7.0 |
| France | 32 | (2.0) | 13.0 | 38 | (1.8) | 15.9 |
| Greece | 30 | (2.2) | 10.5 | 30 | (1.7) | 13.1 |
| Ireland | 26 | (1.8) | 10.0 | 28 | (1.6) | 10.5 |
| Iceland | 15 | (1.5) | 2.7 | 26 | (1.9) | 7.2 |
| Israel | ● | ● | ● | 42 | (3.0) | 16.2 |
| Italy | 28 | (1.9) | 8.3 | 29 | (1.1) | 9.3 |
| Japan | 21 | (2.8) | 4.4 | 22 | (2.4) | 4.9 |
| Canada | 24 | (1.1) | 7.5 | 25 | (1.1) | 7.8 |
| Korea | 22 | (2.7) | 5.5 | 26 | (2.7) | 5.0 |
| Luxembourg | 34 | (1.6) | 13.8 | 41 | (1.3) | 19.7 |
| Mexico | 26 | (2.1) | 9.5 | 20 | (0.9) | 7.5 |
| New Zealand | 29 | (1.6) | 9.1 | 38 | (1.6) | 14.3 |
| Netherlands | 31 | (2.0) | 12.6 | 31 | (2.2) | 10.4 |
| Norway | 27 | (1.5) | 8.9 | 25 | (1.9) | 6.4 |
| OECD average | 29 | (0.4) | 10.5 | 32 | (0.3) | 11.7 |
| Austria | 30 | (1.9) | 10.6 | 33 | (2.0) | 12.0 |
| Poland | 32 | (1.6) | 12.6 | 33 | (2.2) | 13.5 |
| Portugal | 34 | (1.7) | 14.8 | 38 | (1.9) | 16.8 |
| Sweden | 28 | (1.8) | 9.2 | 29 | (1.7) | 9.6 |
| Switzerland | 30 | (1.7) | 9.4 | 30 | (1.7) | 10.0 |
| Slovak Republic | 33 | (1.8) | 13.1 | 45 | (2.9) | 17.9 |
| Slovenia | ● | ● | ● | 36 | (1.4) | 14.4 |
| Spain | 25 | (1.4) | 8.2 | 30 | (1.1) | 12.2 |
| Czech Republic | 33 | (1.7) | 12.6 | 39 | (2.2) | 13.9 |
| Turkey | 36 | (5.6) | 11.8 | 28 | (2.6) | 8.3 |
| Hungary | 38 | (2.0) | 16.9 | 41 | (2.8) | 18.3 |
| United States | 30 | (1.4) | 10.3 | 30 | (1.6) | 11.1 |
| United Kingdom | ● | ● | ● | 31 | (1.7) | 10.3 |

* The term „social gradient“ refers to a statistical measure which is based on a regression between the variables socioeconomic status (HISEI) and performance. It indicates the increase in score points if the HISEI rises by one standard deviation.

Source: Prenzel, M. et al. (2013), PISA 2012, p. 269

Tab. 5-7: Percentage of students 2000 and 2012, by type of school and EGP class categories

| EGP Class Categories | PISA 2000 | | | | PISA 2012 | | | |
|--|----------------|-------|------------------------|-------|----------------|-------|------------------------|-------|
| | Grammar School | | Other types of schools | | Grammar School | | Other types of schools | |
| | % | (SE) | % | (SE) | % | (SE) | % | (SE) |
| Higher-grade professionals (I) | 52 | (2.0) | 48 | (2.0) | 58 | (2.7) | 42 | (2.7) |
| Lower-grade professionals (II) | 45 | (2.0) | 55 | (2.0) | 43 | (2.8) | 57 | (2.8) |
| Routine non manual (sales and services) (III) | 24 | (2.6) | 76 | (2.6) | 32 | (3.7) | 68 | (3.7) |
| Self-employees (IV) | 26 | (1.7) | 74 | (1.7) | 26 | (2.7) | 74 | (2.7) |
| Manual supervisors/low grade technicians and skilled workers (V, VI) | 16 | (1.2) | 84 | (1.2) | 27 | (2.5) | 73 | (2.5) |
| Unskilled workers and farm labours (VII) | 11 | (1.0) | 89 | (1.0) | 19 | (2.0) | 81 | (2.0) |
| In total | 28 | (1.0) | 72 | (1.0) | 36 | (2.1) | 64 | (2.1) |

Note: Significant differences ($p < .05$) between PISA 2000 and 2012 are highlighted in bold. The category „Other types of schools“ includes: *Hauptschulen*, *Realschulen*, integrated comprehensive schools, schools with different educational pathways, special schools and vocational schools.

Source: Prenzel, M. et al. (2013), PISA 2012, p. 269

Tab. 6-1: Percentage of (mathematic) teachers in primary (2011) and secondary (2012) education without mathematic teaching qualification, by Land (percentage)

| | Primary Education (school year 2010/11) | Secondary education (school year 2011/12) |
|-------------------------------|--|--|
| | Percentage | |
| Germany | 27.3 | 13.6 |
| Baden-Wurttemberg | 44.9 | 8.9 |
| Bavaria | 15.8 | 18.9 |
| Berlin | 37.6 | 19.1 |
| Brandenburg | 14.7 | 4.0 |
| Bremen | 46.4 | 36.4 |
| Hamburg | 48.1 | 25 |
| Hesse | 40.0 | 12.8 |
| Mecklenburg-Western-Pomerania | 13.3 | 3.6 |
| Lower Saxony | 39.7 | 16.2 |
| North Rhine-Westphalia | 27.3 | 13.1 |
| Rhineland-Palatinate | 24.7 | 20.7 |
| Saarland | 33.3 | 24.5 |
| Saxony | 2.9 | 3.1 |
| Saxony-Anhalt | 5.1 | 8.8 |
| Schleswig-Holstein | 38.2 | 10.9 |
| Thuringia | 1.3 | 1.9 |

Source: Richter, D., Kuhl, P., Reimers, H. & Pant, H. A. (2012). Aspekte der Aus- und Fortbildung von Lehrkräften in der Primarstufe. In P. Stanat, H. A. Pant, K. Böhme & D. Richter (Hrsg.), Kompetenzen von Schülern am Ende der vierten Jahrgangsstufe in den Fächern Deutsch und Mathematik. Ergebnisse des IQB-Ländervergleichs 2011 (p. 237-250). Münster: Waxmann, p. 240.; Richter, D., Kuhl, P., Haag, N. & Pant, H. A. (2012). Aspekte der Aus- und Fortbildung von Mathematik- und Naturwissenschaftslehrkräften im Ländervergleich. In H. A. Pant, P. Stanat, U. Schroeders, A. Roppelt, T. Siegle & C. Pöhlmann (Hrsg.), IQB-Ländervergleich 2012. Mathematische und naturwissenschaftliche Kompetenzen am Ende der Sekundarstufe I (p. 367-390). Münster: Waxmann, p. 375.

Tab. 6-2: Students per class 2003 to 2012, by education sector

| Sector | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|-----------------|------------|------|------|------|------|------|------|------|------|------|
| | Percentage | | | | | | | | | |
| Elementary | 12.3 | 12.1 | 11.1 | 11.0 | 11.1 | 10.9 | 10.7 | 11.1 | 11.2 | 11.3 |
| Primary | 22.1 | 22.0 | 22.1 | 22.1 | 21.9 | 21.7 | 21.5 | 21.2 | 21.0 | 20.8 |
| Lower secondary | 24.9 | 25.0 | 24.9 | 24.9 | 24.9 | 24.8 | 24.6 | 24.5 | 24.4 | 24.3 |
| Upper secondary | X | X | X | X | X | X | X | X | X | X |

Source: Standing Conference of the Ministers of Education and Cultural Affairs (2014), Students, classes, teachers and provided lessons

Tab. 6-3: Students per teacher 2003 to 2012, by education sector

| Sector | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|-----------------|------------|------|------|------|------|------|------|------|------|------|
| | Percentage | | | | | | | | | |
| Elementary | 11.6 | 11.4 | 10.2 | 10.1 | 9.8 | 9.4 | 9.4 | 9.7 | 9.7 | 9.8 |
| Primary | 20.0 | 20.0 | 19.8 | 19.4 | 19.0 | 18.5 | 17.8 | 17.4 | 17.0 | 16.6 |
| Lower secondary | 16.5 | 16.5 | 16.4 | 16.1 | 15.9 | 15.7 | 15.3 | 14.9 | 14.6 | 14.3 |
| Upper secondary | 12.7 | 13.2 | 13.4 | 13.5 | 13.4 | 13.6 | 13.4 | 13.2 | 13.0 | 12.6 |

Source: Standing Conference of the Ministers of Education and Cultural Affairs (2014), Students, classes, teachers and provided lessons