EUROPEAN
COMMISSION

Brussels, 30.5.2017
SWD(2017) 165 final

COMMISSION STAFF WORKING DOCUMENT
Accompanying the document

Communication

on school development and excellent teaching for a great start in life

{COM(2017) 248 final}

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1. Introduction

This staff working document complements the Communication on 'School development and excellent teaching for a great start in life'. It provides additional evidence and information on the different statements made in the Communication and points to further sources of information.

Following the structure proposed in the Communication, the staff working document examines key challenges for school education systems at three levels: the school, its staff and the education system. These levels of intervention reflect the growing complexity of school education systems, which are increasingly decentralised and involve a greater number of stakeholders than previously[1].

The staff working document takes a systemic view on school education policies. The need for inclusive education, and especially the integration of children and young people with an immigrant background, is addressed throughout the document as an important guiding principle for the future development of school education policies. Likewise, digital and entrepreneurial education play an important role for innovation and development in school education. They are therefore addressed at different places in the staff working document, not as stand-alone chapters.

Education and Training 2020 (ET 2020)[2], the strategic framework for cooperation in education and training in the EU, lays down the context for exchanges and peer learning in the field of school education. During the last few years, ET 2020 working groups bringing together representatives from all Member States have developed policy guidance on subjects such as early childhood education and care, reduction of early school leaving, governance of school education systems and teacher education. This staff working document summarises key results of this process to date.

The chapter *'Developing better and more inclusive schools'* makes reference to relevant research findings on aspects such as inclusion, dealing with diversity and fostering school development. It presents results of the ET 2020 Working Group on Schools which in 2014 and 2015 further developed the concept of the 'whole school approach' as a key approach to reducing early school leaving. The chapter also presents key findings of the ET 2020 Thematic Working Group on Early Childhood Education and Care (2012-2014).

The chapter *'Supporting teachers and school leaders for excellent teaching and learning'* draws on evidence from studies and international surveys on teachers and school leaders. It reflects the findings of the ET 2020 Working Group on Schools Policy (2014-2015) and preceding EU-level working groups which addressed policy issues linked to teacher education, professional development and school leadership.

The chapter *'Governance of school education systems: becoming more effective, equitable and efficient'* presents recent research findings and data analysis, as well as first results on quality assurance of the current ET 2020 Working Group on Schools (2016-18)[3]. On quality assurance in particular, it presents topics which are crucial for the future development of school education systems, but which have only recently become a subject of discussion at European or international level.

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[1] OECD (2016), *Governing education in a complex world*, Paris, OECD Publishing.

[2] Council Conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training ('ET 2020'), OJ 2009/C 119/02.

[3] ET 2020, Working Group Mandates 2016-2018, http://ec.europa.eu/dgs/education_culture/repository/education/policy/strategic-framework/expert-groups/2016-2018/et-2020-group-mandates_en.pdf

This staff working document draws on evidence from a wide range of research and studies, including work by the Eurydice network, the Joint Research Centre, data provided by Eurostat and the latest data from international surveys such as the Programme for International Student Assessment (PISA 2015) and the Teaching and Learning International Survey (TALIS 2013).

2. Developing better and more inclusive schools

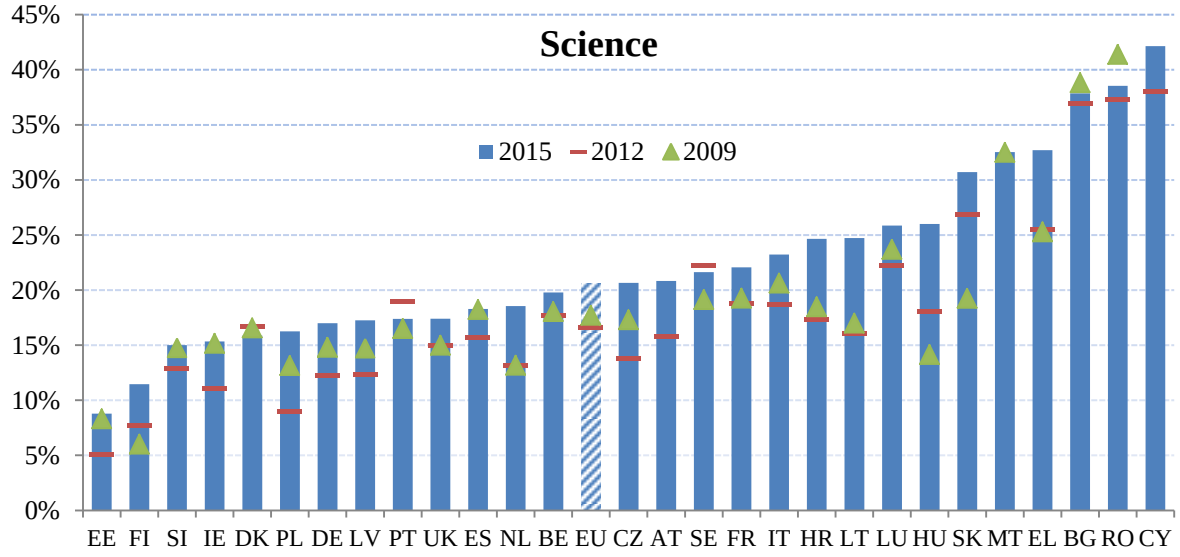
As outlined in the Communication on school development and excellent teaching, schools have a crucial role in ensuring that all learners develop the competences they need and reach their full potential, irrespective of their background. Over the last decade, this task has become more challenging: diversity and inequality have increased both in society and schools, and there are growing competence requirements[4]. The complexity of learning environments and learners' needs mean that schools cannot address these challenges alone.

The challenge of insufficient educational outcomes

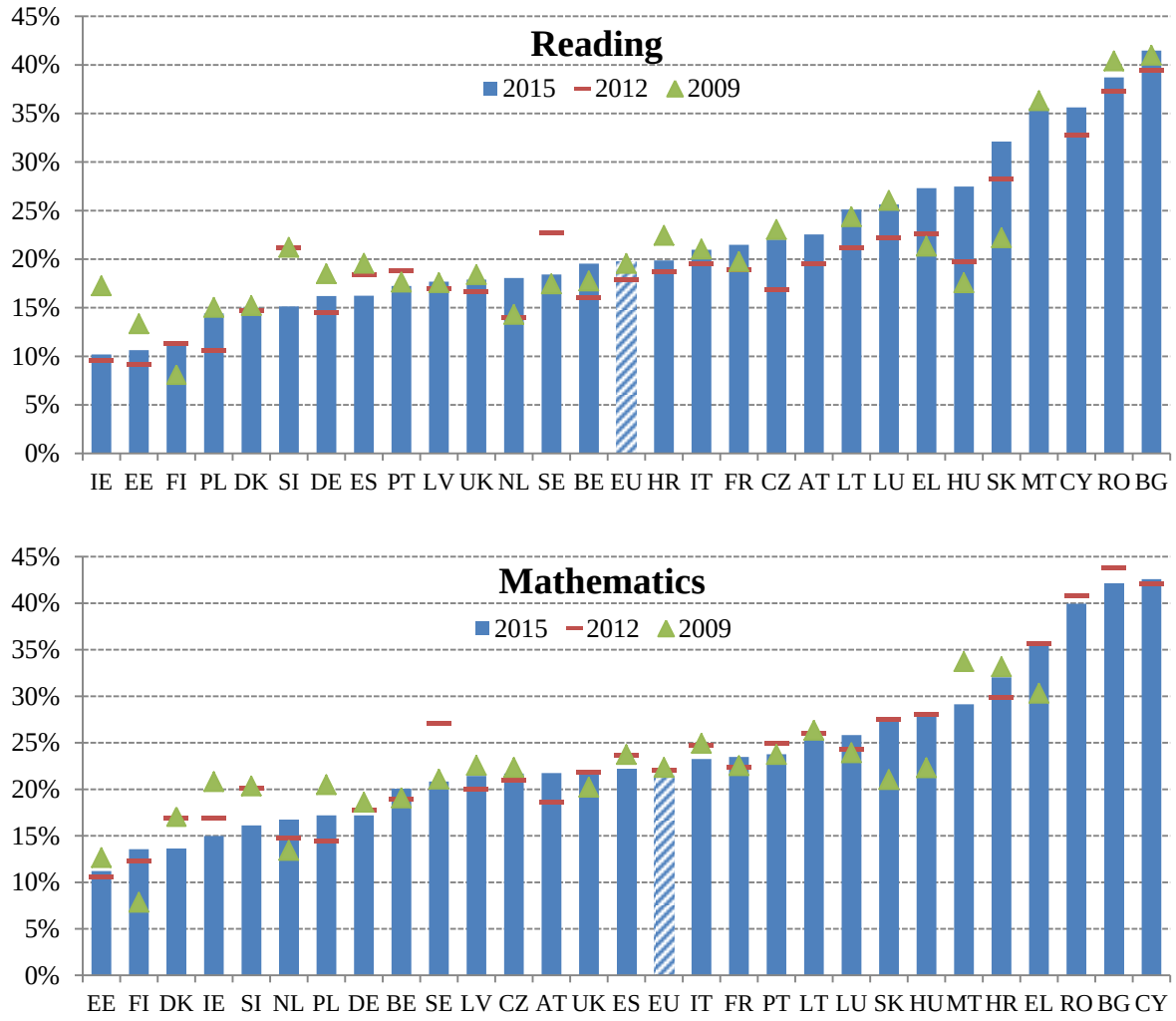
The OECD PISA 2015 survey[5] shows that a considerable (and increasing) share of young people has severe difficulties in acquiring sufficient basic skills. The proportion of low achievers[6] increased between 2012 and 2015 from 16.6 % to 20.6 % in science and from 17.8 % to 19.7 % in reading; in mathematics it stagnated at around 22 % (Figure 2.1).

At the same time, the proportion of pupils achieving very good results in Europe is relatively low: even the best-performing EU Member States are outperformed by some other advanced countries. For instance, the proportion of top performers[7] in science is 24 % in Singapore and 15 % in Japan. No EU Member State matches this performance (Figure 2.2).

Figure 2.1. Proportion of low achievers in PISA

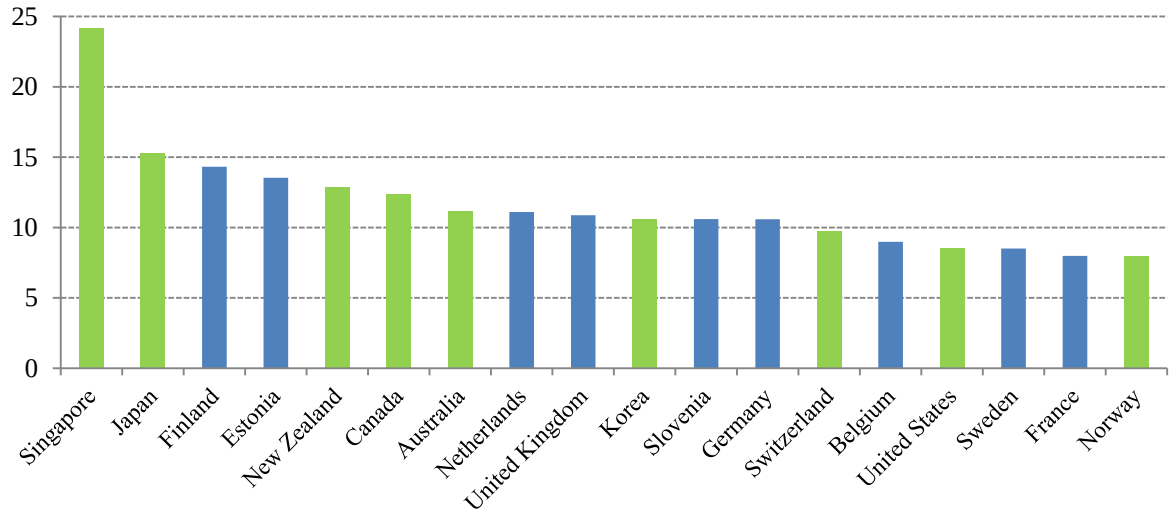


[4] European Commission (2016), Analytical underpinning for a New Skills Agenda for Europe, SWD (2016)195.
[5] OECD (2016), *PISA 2015 results (Volume I): Excellence and Equity in Education*, Paris, OECD Publishing; European Commission (2016), *PISA 2015: EU performance and initial conclusions regarding education policies in Europe*.
[6] Pupils who scored below PISA level 2, i.e. the minimum level of proficiency required to participate fully in modern society.
[7] Pupils who scored at PISA level 5 or above.



Source: European Commission (2016), *PISA 2015: EU performance and initial conclusions regarding education policies in Europe*

Figure 2.2. Advanced countries with the highest proportion of top performers in science in PISA 2015 (%)



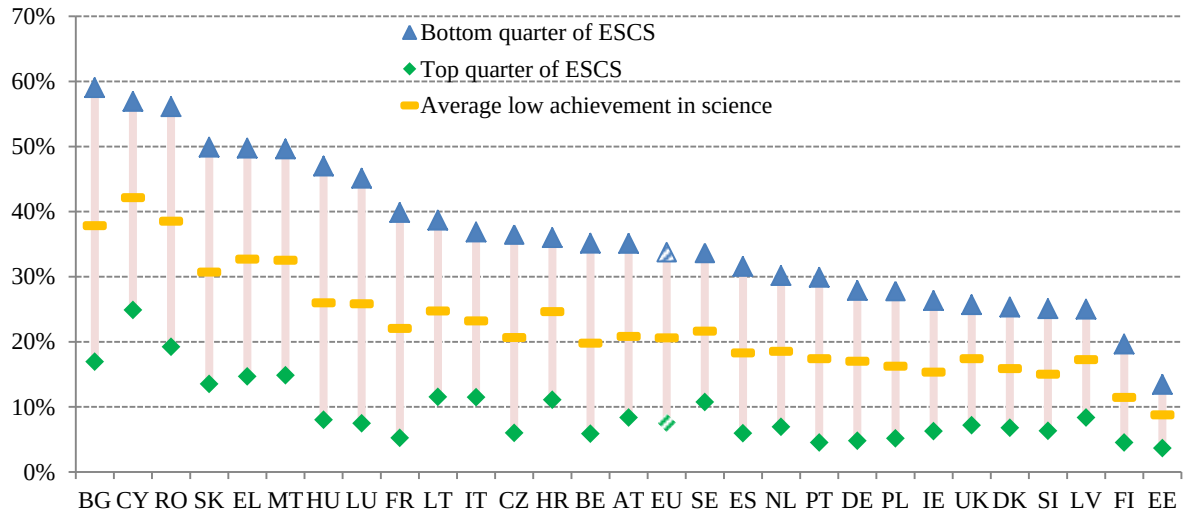
Source: OECD (2016), *PISA 2015 results (Volume I): Excellence and Equity in Education*

Educational outcomes in relation to socio-economic status and migration background

The OECD PISA surveys have also consistently shown that socio-economic status[8] is still one of the main determinants for success in education and especially for acquiring basic skills. In many countries, schools tend to reproduce existing patterns of socio-economic advantage, rather than contributing to a more equitable distribution of learning opportunities and outcomes. Figure 2.3 displays the proportion of low achievers in science in PISA 2015 in the bottom and upper quarters of PISA's socio-economic index. The EU average proportion of low achievers in science within the bottom quarter of the 2015 PISA student population is around 34 %, 26 percentage points more than among the students with the highest socio-economic status. In some EU Member States this proportion even exceeds 50 %, i.e. less than half of 15-year-olds from lower socio-economic backgrounds reach the minimum level of proficiency in science.

In almost all Member States, the basic skill levels of students with an immigrant background[9] lag behind those of non-immigrant students. Their performance is usually strongly correlated with their socio-economic status. Figure 2.4 compares the difference in science performance between students with and without an immigrant background. Since many immigrant students come from a lower socio-economic status, the disadvantage for immigrant students is smaller in almost all Member States when adjusting for socio-economic status, although it remains significant in a number of countries.

Figure 2.3. Low achievers in science by socio-economic status (ESCS) in PISA 2015

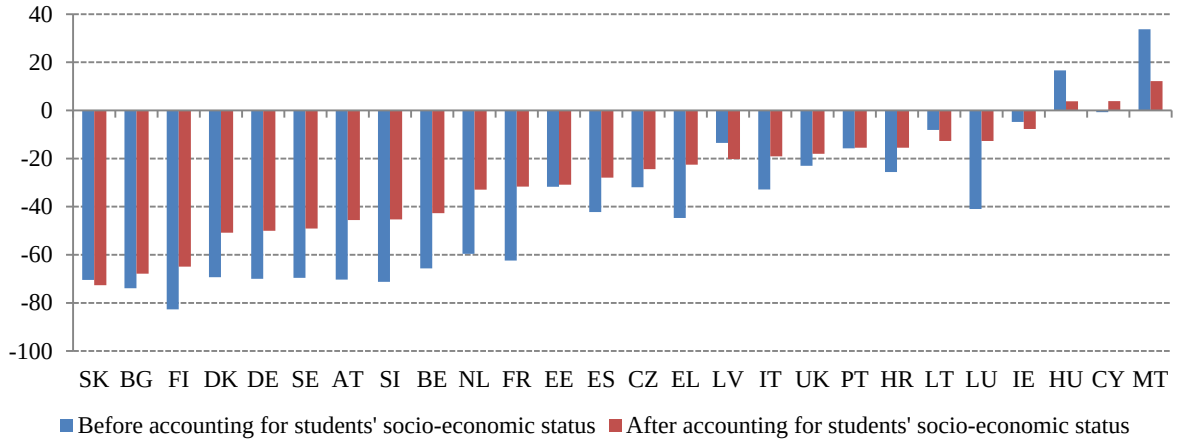


Source: European Commission (2016), *PISA 2015: EU performance and initial conclusions regarding education policies in Europe*

[8] In PISA, a student's socio-economic status is estimated by the index of economic, social and cultural status (ESCS). The index is derived from several variables related to students' family background: parents' education, parents' occupations, a number of home possessions that can be taken as proxies for material wealth, and the number of books and other educational resources available at home.

[9] In PISA, students have an immigrant background if they are foreign-born (first-generation) or if they are native-born whose parents are both foreign-born (second-generation).

Figure 2.4. Difference in science performance (points score) in PISA 2015 between immigrant and non-immigrant students, before and after accounting for socio-economic status



Source: European Commission (2016), *PISA 2015: EU performance and initial conclusions regarding education policies in Europe*

Early school leaving

Despite progress in the last few years, early school leaving[10] remains a challenge in quite a number of Member States, showing a strong regional and socio-economic dimension. The early school leaving rate at EU level was at 10.7 % in 2016, practically stagnant compared to 2015 (11 %). The data for 2016 also show that in some countries there was hardly any improvement in recent years, and in others the early school leaving rate is still almost twice as high as the EU target of 10 % (Table 2.1).

The early school leaving rate of foreign-born young people is especially high; in some countries it is twice as high as the rate for native-born young people. Regional differences point to another complexity of the phenomenon: both regions and individual schools are confronted with very different situations when it comes to early school leaving (Figure 2.5). Early school leaving rates are strongly correlated with socio-economic status, with immigration, with the situation of local labour markets and the resources available in the community to support young people in their educational development.

The gender gap in early school leaving rates remains substantial in the EU, with an average male rate of 12.2 % and a female rate of 9.2 %. Women have lower early school leaving rates than men in nearly all EU Member States with the exception of BG and RO, where the rate is only marginally higher for women. The differences between men and women are especially striking in some southern Member States (ES, IT, MT, PT), but also in some northern (DK, FI) and Baltic countries (EE, LT, LV).

[10] The indicator is based on the EU Labour Force Survey. It is defined as the percentage of the population aged 18-24 with at most lower secondary education and who were not in further education or training during the last 4 weeks preceding the survey. Lower secondary education refers to ISCED (International Standard Classification of Education) 2011 level 0-2 for data from 2014 onwards and to ISCED 1997 level 0-3C short for data up to 2013. Data are, however, comparable over time for all Member States.

Table 2.1. Early school leaving by sex and country of birth (%)

	2013	2016					2020
	Total	Total	Men	Women	Native-born	Foreign-born	TARGET
EU-28	11.9	10.7	12.2	9.2	9.8	19.7	10
Belgium	11	8.8	10.2	7.4	7.6	17.8	9.5
Bulgaria	12.5	13.8	13.7	13.9	13.8	:	11
Czech Rep.	5.4	6.6	6.6	6.6	6.6	:	5.5
Denmark	8	7.2b	8.5b	5.9b	7.2b	(7.9)b	10
Germany	9.8	10.2	10.9	9.4	8.2	23.1	10
Estonia	9.7	10.9	14.3	7.4	10.9	:	9.5
Ireland	8.4	6.3	7.8	4.6	6.5	5.2	8
Greece	10.1	6.2	7.1	5.3	5.5	18.1	10
Spain	23.6	19	22.7	15.1	16.1	32.9	15
France	9.7	8.8	10.1	7.5	8.2	16.3	9.5
Croatia	4.5	(2.8)	(3.5)	(2)	(2.7)	:	4
Italy	16.8	13.8	16.1	11.3	11.8	30.0	16
Cyprus	9.1	7.7	11.4	4.3	4.6	18.2	10
Latvia	9.8	10	13.7	6.2	10.1	:	10
Lithuania	6.3	4.8	(6)	(3.6)	4.8	:	9
Luxembourg	6.1	5.5	6.8	(4.2)	4.1	8.5	10
Hungary	11.9	12.4	12.9	11.8	12.4	:	10
Malta	20.5	19.6	23.1	15.8	19.5	:	10
Netherlands	9.3	8	10.1	5.8	7.9	8.3	8
Austria	7.5	6.9	7.7	6	5.5	14.7	9.5
Poland	5.6	5.2	6.4	3.9	5.2	:	4.5
Portugal	18.9	14	17.4	10.5	14.0	14.3	10
Romania	17.3	18.5	18.4	18.7	18.6	:	11.3
Slovenia	3.9	4.9	6.7	(3.1)	4.4	(15.6)	5
Slovakia	6.4	7.4	7.6	7.2	7.4	:	6
Finland	9.3	7.9	9	6.9	7.6	(15.1)	8
Sweden	7.1	7.4	8.2	6.4	5.9	15.2	7
UK	12.4	11.2	12.8	9.5	11.5	9.4	-

Source: Eurostat, Labour Force Survey. Online data code: *edat_lfse_14* and *edat_lfse_02*. Note: b = break in time series; () = data lack reliability due to small sample size; : = data either not available or not reliable due to very small sample size.

The long-term decline of the early school leaving rate is a positive trend. Nevertheless, it may be partly caused by the impact of the latest economic crisis, especially in countries with high youth unemployment. More difficult access to the labour market may mean that young people decide to remain longer in education: it does not necessarily mean that reforms in school

education have been able to provide more young people with attractive and promising learning pathways[11].

Early school leaving is the result of a complex interplay of factors, which need qualitative analysis to be understood and appropriately addressed [12]. In 2011, the Council Recommendation on Reducing Early School Leaving recommended comprehensive strategies against early school leaving, including prevention and intervention measures as well as compensation measures that help re-engage young people who have dropped out of education[13].

Since then, most EU Member States have improved their data collection to better quantify and analyse the problem. Student register-based data can also be used to monitor absenteeism, thus functioning as an early warning system. Besides a variety of measures to help young people at risk to remain in education and training, most Member States have also put in place policies to increase the flexibility and permeability of educational pathways. These measures aim to facilitate a smooth transition between education levels or different types of education, helping especially young people at risk of dropping out[14].

As for the specific challenges of young people with a migration background, policies ensuring language support for students whose mother tongue differs from the language of instruction are widespread; sometimes language support comes with systematic provision of lessons or assistance in the migrant students' mother tongue. Also the combination of high-quality and well-organised language support and school guidance services at secondary level are an effective measure to prevent and reduce early school leaving among young people with an immigrant background.

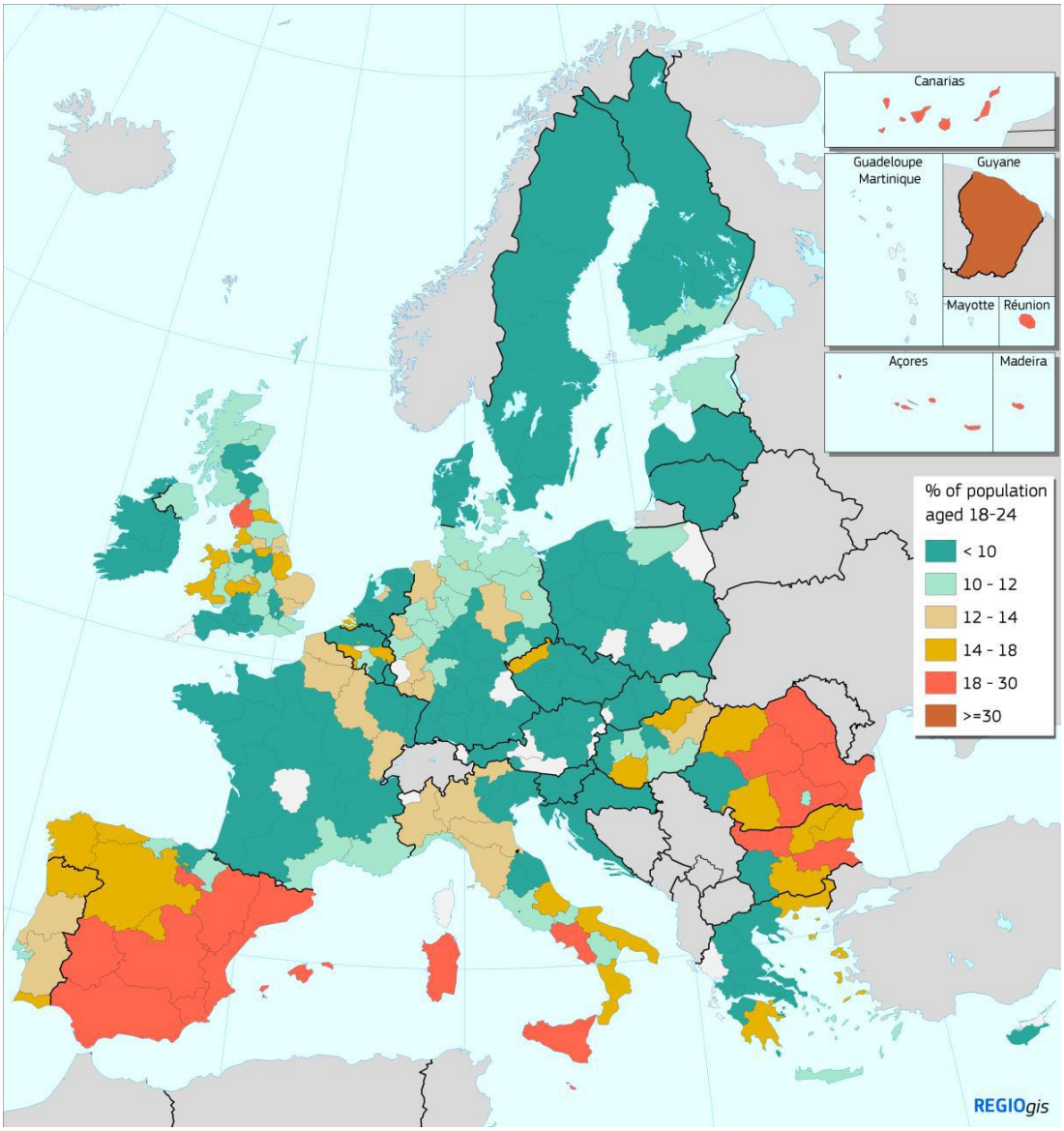
[11] European Commission (2014), *Employment and Social Situation in Europe 2014*, p. 114; for information on the employment status of early leavers from education and training see http://ec.europa.eu/eurostat/statistics-explained/index.php/Early_leavers_from_education_and_training

[12] RESL.eu — Reducing Early School Leaving in Europe project, EU 7th Framework programme for Research and Innovation, https://www.uantwerpen.be/en/projects/resl-eu/

[13] Council Recommendation of 28 June 2011 on policies to reduce early school leaving, OJ 2011/C 191/01.

[14] The Eurydice network carries out systematic monitoring of policy measures to reduce underachievement and early school leaving, which underpins this section of the Monitor. For further reference: European Commission/EACEA/Eurydice (2016), *Structural Indicators for Monitoring Education and Training Systems in Europe. Eurydice Background Report to the Education and Training Monitor* (http://eacea.ec.europa.eu/education/eurydice/index_en.php). See also Education and Training Monitor 2016.

Figure 2.5. Early leavers from education and training, NUTS level 2 regions (2015)



Source: Eurostat, Labour Force Survey. Online data code: edat_lfse_16. © EuroGeographics Association for the administrative boundaries

Schools characteristics and performance

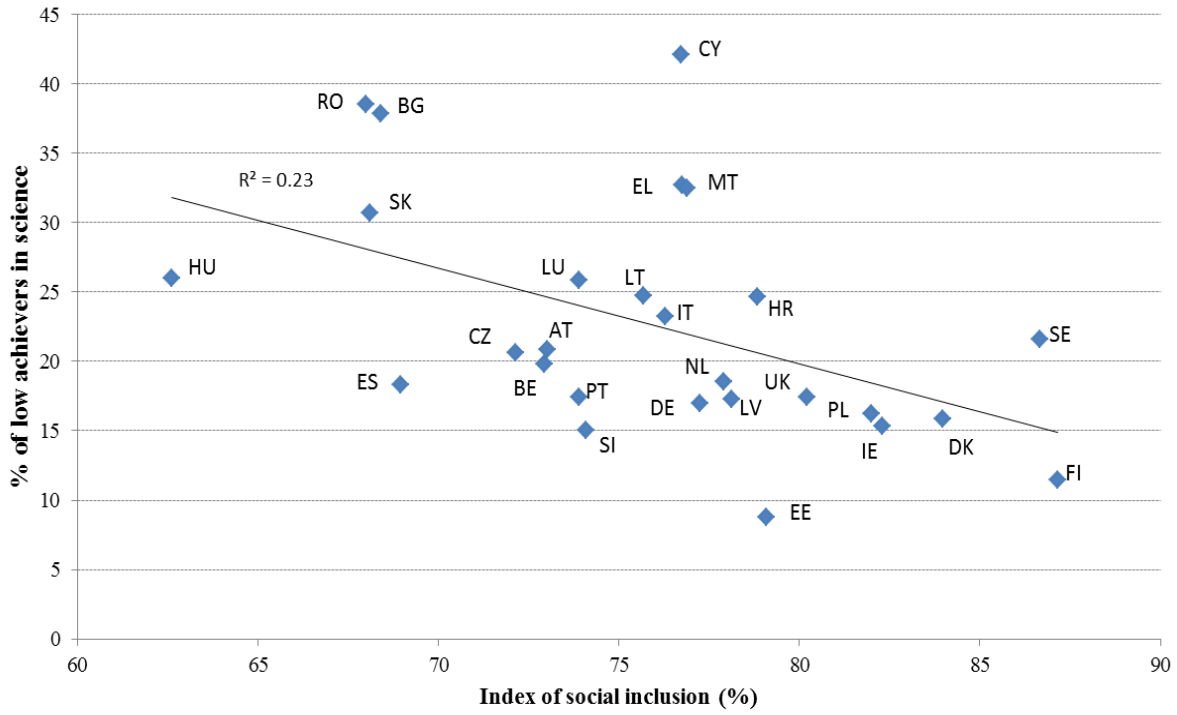
A recent OECD report financed by the European Commission gives an insight into the effects of school characteristics on pupil performance[15]. For example, an important factor that correlates with underachievement is the degree of socio-economic inclusiveness within schools[16]. Where schools are socio-economically inclusive, there is a smaller share of underachieving students in a country (Figure 2.7). Socio-economic diversity in schools, including ethnical and linguistic diversity, is beneficial to the educational performance of

[15] OECD (2016), *PISA. Low-Performing Students — Why they fall behind and how to help them succeed*, Paris, OECD Publishing.

[16] The index of socio-economic inclusion shows the extent to which students' socio-economic status varies within schools, measured as a percentage of the total variation in students' socio-economic status across the school system. The relationship is statistically significant.

students as a whole. Socio-economic segregation in schools is also linked with more behavioural problems and consequently with a higher risk of early school leaving[17].

Figure 2.6. Socio-economic inclusion and low performance in science in PISA 2015



Source: OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*

School leaders' and teachers' expectations towards students are another important factor. Underachievers are more often found in schools where teachers' low expectations for students are more frequent than in schools where such low expectations are less common. Overall across all PISA countries, students in schools where teachers have low expectations are 1.2 times more likely to perform poorly in mathematics, compared with students in schools where teachers have higher expectations for them[18].

Effective school organisation and development is necessary to promote a positive and collaborative culture and ethos, which includes teachers, pupils, parents and also non-teaching staff and establishes strong bonds with the community around the school. Different approaches have already been tested in countries and individual schools and show positive results[19].

2.1. Supporting all learners and their competence development

To support all young people in developing the full range of key competences for personal fulfilment and development, active citizenship, social inclusion and employment requires a broad set of measures and the involvement of many actors such as the whole school

[17] European Commission/EACEA/Eurydice/CEDEFOP (2014), *Tackling Early School Leaving from Education and Training in Europe: Strategies, Policies and Measures*, Luxembourg: Publications Office of the EU.
[18] OECD (2016), *PISA. Low-Performing Students — Why they fall behind and how to help them succeed*, Paris, OECD Publishing.
[19] INCLUD-ED, Strategies for inclusion and social cohesion in Europe from Education, a project funded under the 6th Framework Programme for Research and Technological Development, http://creaub.info/included/

community, but also local companies, museums and cultural institutions and civil society. The competences needed today go beyond basic skills such as numeracy and literacy; they also include languages, digital and coding skills, creativity and critical thinking, communication and civic and social competences.

The European Framework of Key Competences for Lifelong Learning, adopted in 2006, provides a definition of these key competences[20]. It sets out eight key competences:

1. Communication in the mother tongue
2. Communication in foreign languages
3. Mathematical competence and basic competences in science and technology
4. Digital competence
5. Learning to learn
6. Social and civic competences
7. Sense of initiative and entrepreneurship
8. Cultural awareness and expression.

The eight competences are considered equally important; many of them overlap and interlock. Skills or competences such as critical thinking, creativity, initiative and problem solving are part of the European Framework of Key Competences, even though they are not described in greater detail. During the last decade, the Framework has been used in many countries to inform the development of curricula. It has contributed to a stronger focus on competence development in education, seeing competences as a combination of knowledge, skills and attitudes.

Helping young people to acquire the necessary competences is a challenge for educational institutions. Competence-oriented educational concepts focus on output: they ask what knowledge, skills and attitudes a young person has to perform a concrete task or act in a specific social or professional context[21]. The competences a young person needs are not necessarily equivalent to the subjects taught in most schools in Europe; some key competences such as learning to learn or cultural awareness can only to a limited extent be taught as a specific subject or in a classical classroom setting.

In order to help young people to develop the necessary competences, schools must improve cooperation within and beyond their walls. This includes enhancing cross-disciplinary teaching and learning, project- and problem-based learning, team teaching or involving external stakeholders, artists, social-service providers or businesses. For example, entrepreneurship and social competences may be developed through cross-disciplinary pupil-led projects or in cooperation with social partners and local businesses, which will also help improve the work-related relevance of curriculum. Equally, appropriate use of the internet and

[20] Recommendation of the European Parliament and of the Council on key competences for lifelong learning (2006/962/EC). The New Skills Agenda for Europe (COM(2016)381) announced a review of this framework. More than 10 years after its adoption, the review aims to ensure that it reflects political, social, economic, ecological and technological developments and aims to further promote competence-based teaching and learning across Europe.

[21] Gerhard de Haan (2006), *The BLK 21 programme in Germany: a 'Gestaltungskompetenz'-based model for Education for Sustainable development*.

social media across the school subjects and outside school hours can help improve digital and social competences, critical thinking and problem-solving skills, as well as learning to learn[22].

Engaging and stimulating curricula and effective teaching approaches

While setting high expectations for all learners, personalised forms of teaching and learning and different assessment styles support competence development for all groups of learners. Flexible and heterogeneous learner groupings, structured teaching and cooperative learning and peer support have been found to benefit all learners[23]. Curricula that connect with real life and diversity in society, e.g. by addressing daily experiences of pupils, their cultural backgrounds or professional and leisure activities of their families, have proven to be more engaging. Project- and problem-based learning, on-the-job experiences or community-service learning increase the motivation of learners, put subject content into context and offer opportunities for the development of social, civic and entrepreneurship competences[24]. Successful examples of second-chance education provide useful lessons on implementing attractive learner-centred schemes with clear learning outcomes and a motivating learning environment[25].

Digital technologies have the potential to enrich the learning experience by opening classrooms and schools and by integrating real-life experiences and projects, as well as new learning tools, materials and open educational resources. Digital technologies can also be used to make learners creators of value, for instance by asking them to share their achievements openly online in the form of videos, blogs or wiki articles[26]. Access to and use of digital technologies can also help reduce the learning gap between students from high and low socio-economic backgrounds, as they increase access to knowledge and information, connect classroom learning to real-life situations, and allow individualisation of learning experience while increasing autonomy[27].

Education in science, technologies, engineering and mathematics (STEM) is more effective when linked to economic and social developments or to arts and design, demonstrating its relevance for daily life. The EU Horizon 2020 Research programme ('Science with and for Society') has been supporting several activities for the uptake of effective and innovative STEM education practices also involving actors outside the schools such as companies, higher education institutes and research centres[28]. To further promote a shared understanding of the digital and entrepreneurship competences, the Commission has developed two additional

[22] KeyCoNet, a policy network supporting the implementation of competence-oriented teaching, has documented how project-based learning can better equip learners with key competences and improve their cultural awareness and understanding. See KeyCoNet (2015), *Teacher Guide Using Project-based Learning to Develop Students' Key Competences.*

[23] See, for example, outputs and impact of INCLUD-ED Strategies for inclusion and social cohesion in Europe from Education a project funded under the 6th Framework Programme for Research and Technological Development, http://creaub.info/included/.

[24] European Commission/EACEA/Eurydice (2016) Entrepreneurship Education at School. See also the entrepreneurship competence framework: https://ec.europa.eu/jrc/en/entrecomp

[25] European Commission (2013), *Preventing Early School Leaving in Europe — Lessons Learned from Second Chance Education*, Final Report, Directorate-General for Education and Culture.

[26] European Commission (2013), *Opening up Education: Innovative teaching and learning for all through new Technologies and Open Educational Resources.*

[27] JRC is currently studying the relationship between the use of digital technologies and learning outcomes of disadvantaged students, using data from PISA 2015.

[28] European Commission (2015), *Science Education for Responsible Citizenship*. http://ec.europa.eu/research/swafs/pdf/pub_science_education/KI-NA-26-893-EN-N.pdf

frameworks: the Entrepreneurship Competence Framework (EntreComp)[29] and the digital competence framework for citizens (DigComp)[30].

Adapting teaching approaches to the specific needs of individuals or groups of learners

Studies have shown that learners' support should be based on a principle of differentiation, where teaching approaches are tailored to the specific needs of an individual or group of learners and to specific circumstances. This is especially relevant for learners from disadvantaged backgrounds, learners with a migration background or from ethnic minority groups such as Roma. Some EU Member States also face difficulties in providing pupils with disabilities access to inclusive, quality education[31].

Teachers need to be able to select from a wide variety of learning approaches to work with a diverse group of students with diverse needs in the same course, classroom or learning environment. Three levels of intervention can be identified: universal (for all learners), targeted (for groups of students with specific needs), individual (intensive intervention for individual learners) [32] . For example, an individual approach for pupils at risk of underachievement will be more effective if carried out by multi-disciplinary teams in schools or by bringing external professionals in schools[33]. The involvement of all those interacting with the learners, be it family members, siblings, volunteers, etc., is also needed. The development of an individual support plan agreed with the learner and his/her family, setting clear and achievable goals, can be very helpful.

Usually teachers will identify talents and learning difficulties early on and be able to provide appropriate support[34]. However, teachers themselves report that important areas for pupil support are often not sufficiently covered by Continuing Professional Development (CPD). Such areas include:

- teaching cross-curricular skills
- teaching in multilingual and multicultural settings
- student career guidance and counselling
- teaching students with special educational needs
- new technology in the workplace
- approaches to individualised learning[35].

[29] https://ec.europa.eu/jrc/en/entrecomp
[30] https://ec.europa.eu/jrc/en/digcomp
[31] United Nations, Committee on the Rights of Persons with Disabilities (2015), *Concluding observations on the initial report of the European Union*, CRPD/C/EU/CO/1 of 2 October 2015.
[32] Downes, P.; Nairz-Wirth, E.; Rusinaitė, V. (2017), Structural Indicators for Inclusive Systems in and around Schools, *NESET II report*, Luxembourg: Publications Office of the European Union.
[33] Edwards, A. and Downes, P. (2013), Alliances for Inclusion — Cross-sector policy synergies and inter-professional collaboration in and around schools, *NESET report* commissioned by the European Commission.
[34] RESL.eu — Reducing Early School Leaving in Europe project, EU 7th Framework programme for Research and Innovation, Project Paper 6: Cross-case Analyses of School-based Prevention and Intervention Measures (2016) https://www.uantwerpen.be/en/projects/resl-eu/, Cross-case Analyses of School-based Prevention and Intervention Measures, *Project paper 6.*
[35] Eurydice (2015), *The Teaching Profession in Europe*.

Embracing multilingual classrooms

The number of students in Europe whose mother tongue is different than the language of instruction is growing[36]. Evidence shows that teaching in the young learners' mother tongue is essential to give them a strong early start in education[37]. In fact, proficiencies developed in one language are transferable to another, provided there is sufficient exposure to both languages and sufficient motivation to learn. The non-dominant languages form a resource, and not a threat to the learning of the school language[38].

There are several countries where bilingual models have been in use for over 50 years, and consistent positive effects have been reported in numerous research studies. However, it is important to stress that benefits typically emerge after 5 to 7 years as this is the time that non-native speakers generally need to reach academic language proficiency[39].

Recent evidence and practice indicate that the following measures can improve the attainment of children who do not possess the language of instruction:

- supplementary education in and outside school, including help with homework, language learning and mentoring during activities;
- immersion in mainstream classrooms with support from specialists and teachers who have the competences and experience to tailor teaching to children in the classroom who do not have the same level of competency in the language of instruction;
- developing their mother tongue competences[40].

Schools in which children are more rapidly immersed in mainstream classrooms will provide greater opportunities for cultural awareness and valuing diversity through teaching and learning. In addition, multilingual approaches in classrooms from an early age can benefit all children's ability to learn, regardless of their background.

[36] European Commission (2016), *Education and Training Monitor 2016*.

[37] See UNESCO (2008), *Mother tongue matters: Local language as a key to effective learning*, Paris.
Council of Europe, Parliamentary Assembly,: The place of mother tongue in school education, Doc. 10837, Report, 2006.

[38] Cummins, J. (1981), 'The role of primary language development in promoting educational success for language minority students'. In: California State Department of Education (ed.), *Schooling and Language Minority Students. A Theoretical Framework*, Los Angeles, California State Department of Education.

[39] Herzog-Punzenberger, B., Le Pichon-Vorstman, E., Siarova, H. (2017), Multilingual Education in the Light of Diversity: Lessons Learned, *NESET II report*, Luxembourg, Publications Office of the European Union.

[40] European Commission (2015), *Language teaching and learning in multilingual classrooms*, Luxembourg, Publications Office of the European Union.

Example of an Erasmus+ project

Welcomm — Communication skills for integration of migrants — http://welcomm-project.com/

The project considered the fact that migrant children often grow up in households only hearing and speaking the native language of their parents, which might create difficulties when they start school. A key focus of this Erasmus+ project was supporting children's language learning and facilitating integration for immigrant families into the host society. Partner organisations from the Netherlands, Bulgaria, Cyprus, Italy, Portugal and Spain tested and adopted a multimedia learning kit to help those children acquire the necessary vocabulary to start school in the best conditions, through playful activities. This kit is available in all languages of the project partners and can be used by educators or parents; it includes cartoons, books and several games related to topics such as family, house, food, seasons, etc. The project also gathered many inspiring practices on how to support the integration of migrants of all ages into society and the labour market.

International studies have demonstrated that continuity between different stages of education has a significant bearing on learner development. A recent study examined the question of continuity in the curriculum and teaching methods as one of three sets of factors associated with effective pre-school to primary transitions, alongside social and institutional adjustment[41]. These findings are mirrored in studies of the primary to secondary transition stage, which highlight the need for sufficiently flexible curricula to maintain and develop learners' interests and provide meaningful feedback on their progress[42]. Conversely, poor transitions can occur as a result of 'systems mismatch' where two otherwise well-functioning systems suffer from a lack of synchronisation, to the detriment of the learner experience[43].

2.2. Opening up to new forms of cooperation to enhance learning

The organisation of a school plays a crucial role in ensuring that learners reach their full potential irrespective of individual and family-related factors, socio-economic status, immigration background and life experience. Schools should be safe, welcoming and caring learning environments, striving for learners' engagement.

The 'Whole School Approach' is one approach to achieve inclusive and equitable quality education for all and is one possible approach to prevent early school leaving[44]. The school is seen as a multidimensional and interactive system that can learn and change: an open learning hub which provides support to its environment and receives support from the community. All members of the school community (school leaders, teaching and non-teaching staff, learners, parents and families) play an active role in promoting excellence and equity. The entire school community engages in cohesive, collective and collaborative action aimed at supporting each learner in the most appropriate way. There is a strong focus on improving learners'

[41] Evangelou, M., Taggart, B.,Sylva, K., Melhuish, E., Sammons, P., and Siraj-Blatchford, I. (2008), *What Makes a Successful Transition from Primary to Secondary School?*, Nottingham, DfES Publications.
[42] New Zealand Government (2012), *Transition from Primary to Secondary School***,** Wellington, Education Review Office.
[43] Downes, P. (2016), *Developing a School System Governance Framework to Promote Quality for Transitions: Key Issues to Consider for a Differentiated, Holistic Strategy for Transitions*, Keynote Presentation, ET 2020 Working Group on Schools, European Commission, 15-16 Sept 2016.
[44] Council Conclusions on inclusion in diversity to achieve high-quality education for all, 17 February 2017 (http://data.consilium.europa.eu/doc/document/ST-5741-2017-INIT/en/pdf).

educational achievement and emotional, social and psychological well-being. This also requires a cross-sectoral approach and close cooperation with a wide range of external stakeholders and the community at large to deal with issues schools do not (and cannot) have the relevant expertise for[45]. Examples of such stakeholders include social services, youth services, outreach care workers, psychologists, nurses, speech and language therapists, guidance specialists, local authorities, NGOs, business, unions, volunteers. Extracurricular and out-of-school educational opportunities, including wider community projects, can provide opportunities for learners to show their talents and increase their motivation and a sense of belonging at the school.

Recent work by the OECD focuses on the concept of schools as 'learning organisations'; this concept has many similarities to the whole school approach. A learning organisation can be considered as working on a number of levels: the individual, teams, and a level of organisation-wide practices, which together create a 'learning culture'. It is linked to the ideas of a shared vision and an ethos of team work. The goal of fostering professional learning of staff is pre-eminent[46].

Both concepts, the whole school approach and the school as a learning organisation, can address two crucial points for learners' performance: learners' well-being and learners' participation in school life.

The learner's physical and mental well-being

Recent PISA data confirm that a safe and healthy school environment supports learning. While the relationship between the level of bullying in a school, the life satisfaction of students, and the relationship between teachers and students is complex, a 'happy' school in which students feel save and are satisfied with their life produces better learning outcomes[47]. A major study from the USA concluded that school safety, connectedness and peer support were predictors of learners' social and emotional well-being at primary and lower secondary school[48]. A further study found a strong association between the quality of teacher-learner relationships and learner behaviour and adjustment at school.

In addition to creating a safe and welcoming environment, schools can also play an important role in detecting situations of bullying, victimisation, violence or abuse happening within and outside school. More than 1 in 10 students in OECD countries report that their peers make fun of them at least a few times per month and around 4 % (roughly one per class) say they are hit or pushed around by other students (Figure 2.6). Bullying, cyberbullying and violence impact negatively on school performance[49]. Developing strategies to prevent and tackle bullying are essential in this respect[50]. For example, an influential meta-analysis of 44 evaluations of anti-bullying programmes in schools found that their implementation resulted in a 20-23 %

[45] Policy messages — Whole school approach to early school leaving, ET 2020 Working Group on Schools, 2015.
[46] OECD (2016), What makes a school a learning organisation?, *Education Working Paper*, N.. 137.
[47] OECD (2017), PISA 2015 (Volume III): Students' Well-Being.
[48] Lester, L. and Cross, D. (2015), The Relationship Between School Climate and Mental and Emotional Wellbeing Over the Transition from Primary to Secondary School, *Psychology of Well-Being*, 5(1):9.
[49] OECD (2017), *PISA 2015 (Volume III).*
[50] Downes, P. and Cefai, C (2016), How to tackle bullying and prevent school violence in Europe: strategies for inclusive and safe schools, *NESET II report*, Luxembourg, Publications Office of the European Union.

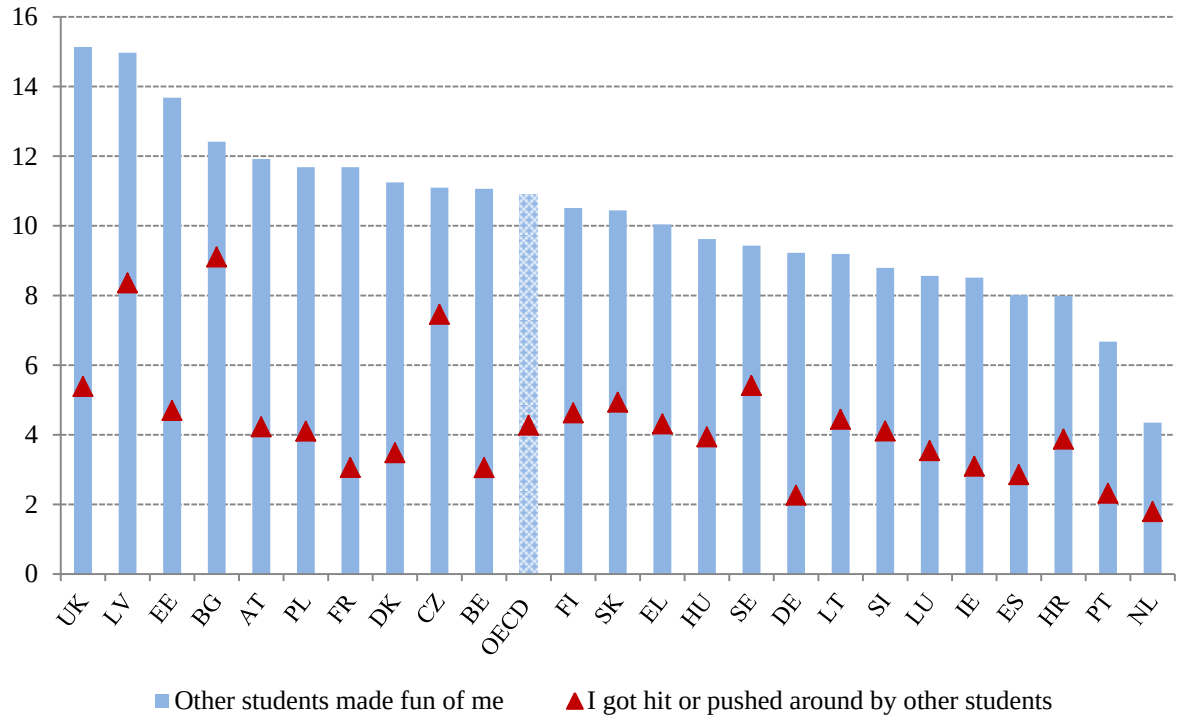
decrease in bullying. Programmes using whole school approaches were among the most effective[51].

Example of an Erasmus+ project

SMILEY — Social Mindedness in learning community — www.smileyschool.eu

The SMILEY project has created an educational game that promotes respect for others and positive social behaviour in everyday society in a friendly and informal way. British, Italian, Polish, Romanian and Turkish children can learn online how to recognise potential conflict and stay away from bullying and violence.

Figure 2.7. Percentage of students who report being bullied at least a few times a month (2015)



Source: OECD (2017), *PISA 2015 (Volume III): Students' Well-Being*

It is also important to promote regular physical activity and a healthy diet, which can improve cross-disciplinary learning, peer support and a welcoming school climate[52]. Physical activity is associated with improvements in brain function and cognition during childhood. Scientific literature has shown that enhanced physical activity and sport participation is closely associated with better school results[53]. In addition, sport and physical activity contribute to the development of social skills. Schools play a pivotal role in supporting the recommended

[51] Ttofi, M.M., Farrington, D.P. (2011): Effectiveness of school-based programs to reduce bullying: a systematic and meta-analytic review, *Journal of Experimental Criminology*, Vol. 7, N. 1, 27-56.
[52] European Commission/EACEA/Eurydice (2013): Physical Education and Sport at School in Europe Eurydice Report. Luxembourg: Publications Office of the European Union.
[53] Expert Group recommendations to encourage physical education in schools, including motor skills in early childhood, produced under the EU Work Plan for Sport 2014-2017, http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=19860&no=1

levels of physical activity for young people, either through the formal curriculum (physical education classes), through extracurricular sport and physical activities or by incorporating physical activity throughout the school day (e.g. active breaks).

Healthy food options at canteens and in vending machines, water fountains in classes, regular sport classes, promotion of walking or cycling to school, combined with a strict prohibition of alcohol, smoking and drugs, will ensure a healthy school environment where children can thrive and perform to the best of their abilities. Children are not in a position to decide on their diets or physical activity and are more vulnerable to peer pressure and aggressive advertising and marketing. Overweight or obese children are more likely to suffer from self-confidence issues, depression and underachievement in school. Establishing healthy school environments will also diminish the heavy burden of future chronic disease across Europe, which has an impact on workers' productivity and that of companies, healthcare systems and the economy.

The learner's voice and participation in school life

Too many pupils still do not feel engaged or even welcome at school. PISA data shows that socio-economically disadvantaged students are less likely than advantaged students to feel that they belong at school and are less likely to feel happy and satisfied with their school. They rather feel like outsiders For example, in some EU countries less than 60 % of socio-economically disadvantaged pupils feel that they belong at school. Overall in OECD countries, disadvantaged students were 8 percentage points less likely than advantaged students to report that they feel that they belong at school. In addition, students with a migrant background report a lower sense of belonging at school than native students[54].

Evidence also shows that learners need to feel ownership of their learning and be given the possibility to voice their views. Being part of the life and activity of the school increases motivation and a sense of belonging. There is, however, a large variation in the quality and extent of children's participation in schools[55].

Participation in school projects that focus on specific issues, including by making full use of possibilities offered by Erasmus+ and eTwinning, can help promote student participation. A democratic school culture includes meaningful participation of learners in school decision-making processes and in school evaluation and improvement processes. While all learners need to be supported so that they can actively participate in school life, a proactive focus on engaging marginalised pupils and ensuring their voices are heard has been found to be essential[56].

Key elements of a whole school approach as defined by the ET 2020 Working Group on School Policy (2014-2016)

Greater flexibility or autonomy of schools

School systems differ in the degree of autonomy granted to schools. There are different levels of autonomy in such areas as funding and staff selection, and teaching methods and

[54] OECD (2017), *PISA 2015 (Volume III): Students' Well-Being*, Table III.7.2.
[55] European Commission (2015), *Evaluation of legislation, policy and practice of child participation in the EU*, Publications Office of the European Union, Luxembourg.
[56] Downes, P., Nairz-Wirth, E., Rusinaite, V. (2016), Structural Indicators for Inclusive Systems in and around Schools, *NESET II Report*, Luxembourg, Publications Office of the European Union.

assessment[57]. In order for school autonomy to contribute to improving learning outcomes, research evidence points to some crucial elements: managerial autonomy, the assessment of results and the use of assessment to promote accountability among all stakeholders[58]. As outlined in more detail in Chapter 4, enhanced school autonomy, coupled with supportive accountability mechanisms, enables schools to identify the best solutions to complex situations and to best cater for the specific needs of the school community.

Distributed leadership

Implementing a distributed leadership model[59] in schools aims to better share tasks and responsibilities across the entire school community. It encourages teachers to take on leading roles in a particular area of expertise, assume responsibility and take initiatives as individuals or groups. Distributed leadership in schools promotes teamwork, multi-disciplinarity and professional collaboration among teaching and non-teaching staff, other stakeholders, professionals and services (see also Chapter 3.2).

Whole-school improvement processes

A whole school approach aims to raise quality and standards across the entire school. For this approach to be effective, schools need to engage in continuous, cyclical processes of improvement. School development plans and self-evaluation processes should include targets that address the underlying factors of underachievement and promotion of educational success, taking into account national, regional and local standards.

Parental involvement

Parental involvement is a key factor for educational success: a stimulating home environment and parental engagement is crucial for a child's learning and cognitive, social and emotional development. For example, PISA shows a strong relationship between reading to a child during his/her early years and better reading performance when the child is 15: in all countries students whose parents read books to them as they entered primary school are more likely to have higher reading scores at age 15[60]. The association between parental involvement and a child's academic success is well established in research, but developing effective parental involvement approaches to improve their children's attainment remains challenging[61]. Although European countries have legislation in place that acknowledges the right of parents or guardians to access information about their children's schooling and to participate in some forms of school decision-making processes, there are differences in the level of parental involvement in practice[62].

Moreover, it is important to take into account particular obstacles and needs of families from vulnerable or marginalised groups in society. High levels of stress linked to poverty detract from the health and well-being of family members and can in turn negatively affect children's

[57] European Commission/EACEA/Eurydice (2012), *Key Data on Education in Europe 2012*.
[58] European Commission/ET 2020 Working Group on Schools Policy (2014-2015), School autonomy questionnaire report, 2014 (working document).
[59] 'Distributed leadership' is primarily concerned with the practice of leadership rather than specific leadership roles or responsibilities. In a school there are many sources of influence, formal and informal, which may be sources of leadership.
[60] OECD (2012), *PISA, Let's Read them a Story! The Parent Factor in Education*, Paris, OECD Publishing.
[61] See Education Endowment Foundation, Teaching and Learning Toolkit, available at: https://educationendowmentfoundation.org.uk/resources/teaching-learning-toolkit/parental-involvement/
[62] Working Group on Schools Policy (2014-2015), Parental involvement, Report from Country focus workshop in France, 2015.

mental health and school achievement[63]. Taking into account the rates of poverty and child poverty in Europe[64], schools should have in place outreach strategies for parents from vulnerable groups in order to facilitate and encourage their involvement in their children's education. Local services, NGOs and professionals (cultural mediators, mentors, social workers, etc.) can be involved to help build positive relationships with parents[65]. Family education can provide a range of benefits for parents and children including improvements in reading, writing and numeracy[66].

Involvement of a wide range of local stakeholders

To provide appropriate, relevant and engaging education for each child, schools can benefit from linking with local services, organisations and businesses. This may include social workers, youth and employment services, outreach care workers, psychologists, nurses and other therapists (speech and language), child protection services, guidance specialists, police, unions, businesses, universities, intercultural mediators, migrants' associations, NGOs and other community organisations from sport, the cultural environment and active citizenship sectors, etc.

There must be political support to promote and organise cooperation and networking at the local level, and clear and strong leadership to steer the process[67]. It is important that roles, responsibilities and structures are clearly defined and agreed from the start. Mechanisms should be in place to ensure a reciprocal flow of information between the school, its stakeholders and the local authorities, as appropriate and according to national circumstances.

Example of an Erasmus+ project

E-STEP — Supporting teachers' and parents' partnerships through social networking technologies — http://hermes.westgate.gr/esteP/

E-STEP involved six different partners from five different countries (Greece, the United Kingdom, Austria, Bulgaria, Ireland) and set out to raise teachers' and school managers' awareness, motivation, knowledge and skills in using ICT networking tools. It provided online facilities to support networking among schools, teachers and parents and a training framework to develop their ICT skills in using social networking tools. Its good practice guide includes a summary of the project findings on teachers' needs and aspirations and a review of good practices in schools.

[63] For an overview of research evidence, see Downes, P.(2015), *Towards a Differentiated, Holistic and Systemic Approach to Parental Involvement in Europe for Early School Leaving Prevention*, PREVENT project, p. 13.
[64] In 2015, 118.7 million people, or 23.7 % of the population in the EU-28 were at risk of poverty or social exclusion (AROPE). At a rate of 26.9 % in the EU-28, children were at greater risk of poverty or social exclusion in 2015 than the total population in 20 of the 28 EU Member States.
[65] Downes, P. (2015), *Towards a Differentiated, Holistic and Systemic Approach to Parental Involvement in Europe for Early School Leaving Prevention*, PREVENT project.
[66] See for example, NIACE (2013), Family Learning Works — The Inquiry into Family Learning in England and Wales.
[67] Working Group on Schools Policy (2014-2015), Report on the Case study on Antwerp, Belgium–Flanders, 2014.

2.3. Improving quality in early childhood education and care

The early years from birth are the most formative and set the foundations for children's lifelong development[68]. In this context, high-quality early childhood education and care (ECEC) is an essential foundation for educational success[69]. The European Commission and EU Member States have acknowledged that access to universally available, high-quality and inclusive ECEC services is beneficial for all[70]. Moreover, ECEC is key for an efficient education system. Investing as early as possible in high-quality education for all avoids higher levels of spending in later stages of education, where the differential costs for closing the gaps between high and low performers are higher[71].

Many studies[72] have shown the long-term positive effect of ECEC policies in the context of publicly funded large-scale or universal provision. These benefits include a wide range of individual and social gains[73].

At individual level, attendance is positively associated with improved cognitive and non-cognitive outcomes, educational attainment, higher salaries, better health and better employability. Students who attended pre-primary education for more than one year scored higher in maths and literacy in secondary school[74]. For students who had not attended pre-primary education the chances of being low performers in mathematics are twice as high as for those who had for more than one year, even after accounting for other student characteristics[75]. The analysis of the 'Perry Preschool program' in the US showed a 7 to 10 % per year return on investment based on increased school and career achievement as well as reduced costs in remedial education, health and criminal justice system expenditures[76]. Many other early childhood programmes are likely to be equally effective. In England, the Institute of Fiscal Studies estimated that the effects of pre-school attendance could translate on average

[68] Schoon, I. et al. (2015), *The Impact of Early Life Skills on Later Outcomes*, London, UCL Institute for Education.

[69] CARE — Curriculum and Quality Analysis and Impact Review of European Early Childhood Education and Care, a project funded under the EU 7th Framework Programme for Research and Innovation, http://ecec-care.org/ and ISOTIS, Inclusive Education and Social Support to Tackle Inequalities in Society, a project funded under the EU Horizon 2020 programme.

[70] European Commission (2011), *Early Childhood Education and Care: Providing all our children with the best start for the world of tomorrow*, COM(2011)66; Council Conclusions on early childhood education and care: providing all our children with the best start for the world of tomorrow, 2011/C 175/03.

[71] Cunha, F. et al. (2006), Interpreting the Evidence on Life Cycle Skill Formation, in E. A. Hanushek and F. Welch (eds.), *Handbook of the Economics of Education, Vol. 1*, North-Holland, Amsterdam; Wößmann, L. (2008), Efficiency and equity of European education and training policies, *International Tax and Public Finance*, Vol. 15(2), 199-230.

[72] For example, Bingley, P. et al (2012) Intergenerational transmission and day care in Denmark, and Dumas, C. et al. (2012), Early schooling and later outcomes: Evidence from pre-school extension in France, in J. Ermisch, M. Jantti and T. Smeeding (eds.), *Inequality from Childhood to Adulthood: A Cross-National Perspective on the Transmission of Advantage*, New York, Sage.

[73] While the research findings on pre-school education (children aged three and older) are fairly consistent, the evidence on the effects on children aged between 0 and 3 is less clear. Diverging results may relate to the age at which pre-school education is started and also to differences in the quality of service. See Melhuis, E. et al (2016), *A review of research on the effects of ECEC on child development*, CARE FP7 Project Curriculum Quality Analysis and Impact Review of European ECEC.

[74] Sylva, K. et al. (2004), *The Effective Provision of Pre-School Education Project*, DfES/Institute of Education.

[75] OECD (2016), Low-performing students: why they fall behind and how to help them succeed, Paris, OECD Publishing.

[76] Heckman, J. J. (2006), Skill formation and the economics of investing in disadvantaged children, *Science*, 132, 1900-1902.

into an increase of up to 7.9 % in the discounted present value of gross (pre-tax) lifetime earnings[77].

Table 2.2. Participation in ECEC (% of population of the corresponding age)

	Pupils aged 4 up to the starting age of compulsory primary education participating in education			
	Total (2011)	Total (2014)	Males (2014)	Females (2014)
EU	**93.2**	**94.3**	**94.3**	**94.3**
Belgium	98.1	98.1	98.0	98.2
Bulgaria	86.6	89.3	89.5	89.1
Czech Republic	87.8	86.4	86.5	86.3
Denmark	97.9	98.1	96.7	98.9
Germany	96.4	97.4	97.1	97.6
Estonia	89.9	91.7	91.7	91.7
Ireland	98.6	96.0	95.6	96.2
Greece	76.0	84.0	:	:
Spain	97.7	97.1	97.0	97.3
France	100.0	100.0	100.0	100.0
Croatia	71.0	72.4	73.2	71.5
Italy	99.1	96.5	97.1	95.9
Cyprus	85.0	82.6	81.9	83.3
Latvia	92.7	94.4	94.0	94.9
Lithuania	84.2	88.8	88.4	89.1
Luxembourg	95.6	98.4	97.9	98.9
Hungary	94.5	94.7	94.9	94.5
Malta	100.0	97.7	99.6	95.7
Netherlands	99.6	97.6	97.3	98.0
Austria	94.3	94.0	93.5	94.4
Poland	78.4	87.1	87.0	87.2
Portugal	93.8	93.5	94.6	92.5
Romania	86.4	86.4	86.1	86.7
Slovenia	89.8	89.4	90.0	88.7
Slovakia	76.9	77.4	77.3	77.6
Finland	74.0	83.6	83.6	83.6
Sweden	95.3	95.9	96.0	95.7
United Kingdom	95.8	98.2	98.3	98.1

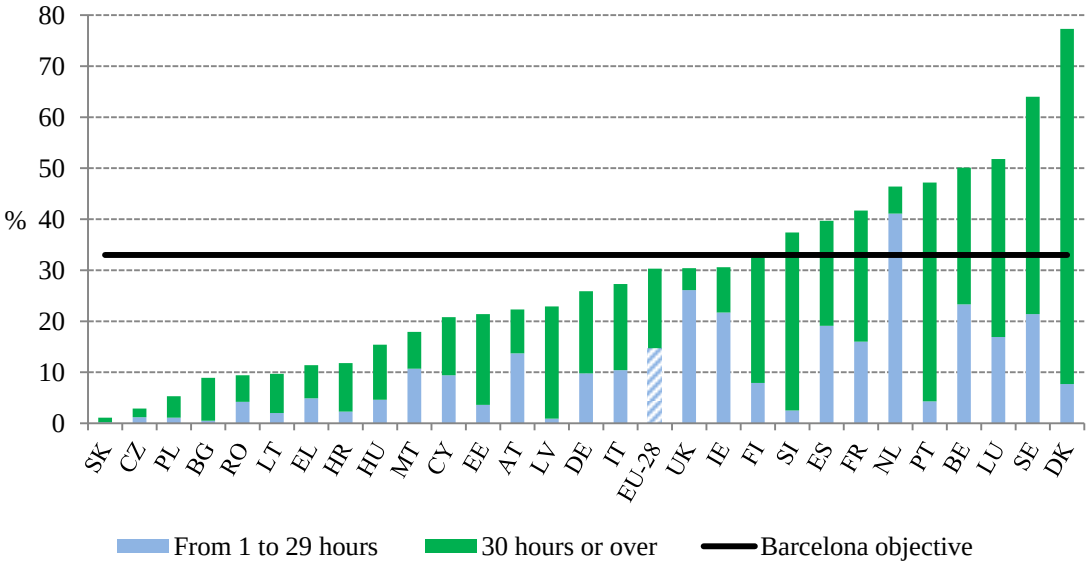
Source: Eurostat. Online data code: *educ_uoe_enra10* and *educ_ipart*. Note: b = break in time series; e = estimated.

From a social inclusion perspective, ECEC participation can also be an important prevention measure for early school leaving. Attending high-quality ECEC results in greater educational attainment and pro-social behaviour for all children, but such gains are even larger for children from disadvantaged backgrounds. Therefore the ECEC sector can play a role in reducing inherited inter-generational disadvantage.

[77] Institute for Fiscal Studies (2014), *The economic effects of pre-school education and quality*, London.

The Education and Training 2020 strategy set a benchmark requiring at least 95 % of children from age 4 to compulsory school age to participate in ECEC. Table 2.2 shows the progress made towards the benchmark from 2011 onwards. The EU as a whole is advancing towards the benchmark value, with a participation rate of 94.3 % in 2014, 1.1 percentage point higher than in 2011. 12 Member States have already reached the target and 26 have a participation rate above 80 %. By contrast, the participation in formal ECEC for children aged 0-3 is much lower and varies greatly across Member States. For this age group, the EU aims to reach the Barcelona objective of a participation rate greater than 33 %. In 2015, the EU average was still below the target, with 30 % of children aged 0-3 attending formal childcare (Figure 2.8). In 25 Member States the demand for childcare exceeds the supply[78].

Figure 2.8. Participation in formal childcare of children aged under 3 (2015)



Source: Eurostat, EU-SILC. Online data code: *ilc_caindformal*

Looking at the current quality of ECEC services, the 2014 Report on Key Data on Early Childhood Education and Care in Europe as well as a study launched by the European Parliament[79] indicate particular challenges with regard to the qualification of staff and the provision of educational guidelines for working with younger children. There are no commonly shared standards across the EU on the qualification of staff in ECEC. Only in 10 countries is a tertiary qualification required for at least one staff member working with children[80]. Continuing Professional Development is an obligation for education and care staff in settings for younger children in only half of European countries. The situation is especially critical for assistants in ECEC as there is no qualification required in more than half of the Member States[81]. In 21 education systems policy-makers seek to influence the quality of learning and child development by issuing a detailed curriculum or outlining the main principles in educational guidelines for the entire duration of ECEC. However, in 11 countries

[78] Eurydice (2014), *Policy Brief Early Childhood Education and Care*.
[79] European Parliament (2014), *Quality in Early Childhood Education and Care*.
[80] Covering also the entire ECEC phase, including children under 3 years old. These countries are DE, EE, EL, HR, LT, LU, PT, SI, FI and SE.
[81] Vandenbroeck, M., Urban, M., & Peeters, J. (Eds.). (2016), *Pathways to Professionalism in Early Childhood Education and Care*, Routledge.

such guidelines are restricted to settings for children over the age of 3. For younger children, the emphasis tends to be on the care element of provision[82].

In 2016 the European Commission organised a conference entitled 'Great start in life — the best possible Education in the early years'. The conference brought together about 300 researchers, policy-makers, teachers and early education and care practitioners to explore the best possible provision for children from birth to the end of compulsory primary schooling[83]. Key messages included that the professionalisation of staff in ECEC and in primary education will help to address many of the current challenges over quality and provision. To better support learning outcomes of children with an immigrant background, children's home language and culture have to be valued as important cognitive, linguistic and educational resources. EU policy work will need to address: (i) how to improve the qualification, competences and working conditions of ECEC staff and teachers; (ii) manage diversity in early education; (iii) ease transitions from ECEC to primary education; and (iv) involve family and communities[84].

A common framework for high-quality early childhood education and care

The quality of ECEC is key to delivering the benefits outlined above. ECEC provision which is not of sufficient quality might offer very few benefits to children, families and society or could even have a negative impact. Therefore it is useful to identify the features of ECEC provision that are associated with good quality.

In 2014, the European Commission developed together with experts from 25 Member States a *Proposal for key principles of a Quality Framework for Early Childhood Education and Care*[85]. The proposal identified several factors associated with ECEC quality that contribute to long-lasting positive effects on children's cognitive and non-cognitive development. The five policy dimensions (Figure 2.9) where change is expected to lead to improved ECEC quality are:

- access
- workforce
- curriculum
- monitoring and evaluation
- governance and funding[86].

The proposal for a quality framework recognises the importance of responding to what society wants for young children and acknowledges the need to ensure that care, development and learning are fully integrated. As a tool it has proven useful in bringing together all relevant

[82] European Commission (2016), *Education and Training Monitor 2016*.
[83] Conference website: https://ec.europa.eu/education/great-start-in-life_en. The main EU funded projects relevant for inclusive education and ECEC are listed in this publication: http://ec.europa.eu/research/social-sciences/pdf/project_synopses/ki-01-16-979-en.pdf#view=fit&pagemode=none
[84] http://www.schooleducationgateway.eu/en/pub/latest/news/the-best-possible-education-in.htm
[85] http://ec.europa.eu/assets/eac/education/policy/strategic-framework/archive/documents/ecec-quality-framework_en.pdf
[86] The framework contains 10 broad action statements which fall within the five quality dimensions. These actions are indispensable and interconnected and lead to improvements in quality. They point to the most important policies, structures and processes that need to be in place to deliver high-quality ECEC for all children.

players and providing a common language and basis for creating legislation and other policy actions across different countries.

Figure 2.9. The five ECEC pillars according to the quality framework

Access

Many Member States face difficulties in ensuring access to all children, particularly those below the age of 3. In the current economic context, and with rising parental demand for ECEC provision, the first challenge is to provide enough places. The second is ensuring equal and fair access.

Five criteria are crucial for increasing participation of children from disadvantaged groups: availability, affordability, accessibility, usefulness and comprehensibility. Socio-cultural diversity may be promoted by involving parents and local immigrant communities in democratic decision-making processes in the management of ECEC services and by recruiting personnel from minority ethnic groups[87]. Moreover, involving parents and professionals in participatory research projects where pedagogical knowledge is constructed and shared is a key success factor of inclusive practice[88].

When there are shortages of places, it is hard to balance the aspiration of equal access with persuading families who are most likely to benefit to take up ECEC services. The quality of ECEC provision and attendance is strengthened through collaboration and outreach work, and children's experiences are improved through such approaches.

It is difficult to monitor and measure the effectiveness of existing policy to improve access. Except for universal ECEC provision, the evidence is not clear about how best to increase access for children from disadvantaged families. There are few benchmarks or targets which can be quantified using reliable, valid and accurate instruments.

[87] Bennett, J. and Moss, P. (2011), *Working for inclusion: how early childhood education and care and its workforce can help Europe's youngest citizens*, retrieved from: http://www.childreninscotland.org.uk/wfi/.
[88] Whalley and Pen Green Centre Team (2007), *Involving parents in their children's learning*, London, Sage.

Workforce

International research demonstrates that staff working conditions and professional development are strongly linked to children's cognitive and non-cognitive outcomes[89]. Therefore it is essential that all professionals working in the sector are highly competent and appropriately qualified.

Teacher quality is a complex issue. Ongoing professional development may be as important as pre-service qualifications in enhancing competence. The content of training needs to address issues relating to everyday practices and activities that support the reflection process and help to collectively redesign practices[90].

Different types of professionals are involved in ECEC settings: educational staff, care staff and assistant/auxiliary staff. Improving quality requires all staff to be trained for their role and responsibilities, with access to regular professional development and pedagogical support. This includes opportunities to diversify professional experience, work in an inter-professional and collaborative way and explore flexible career pathways.

It is important to adapt training to meet the needs of staff working with children from disadvantaged families and minority or immigrant backgrounds. Increasing the recruitment of staff from diverse backgrounds and, when required, helping them to progressively upgrade their qualifications, may significantly benefit disadvantaged and immigrant children.

As reported by the OECD, 'figures from various countries reveal a wide pay gap between childcare staff and teachers, with childcare staff in most countries being poorly trained and paid around minimum wage levels'[91]. Good working conditions can reduce staff turnover in ECEC.

Curriculum

A good curriculum recognises that care, education and socialisation form an integrated whole. It incorporates content and pedagogies that foster children's cognitive, social, emotional and physical development.

Significant differences exist on the space given to academic learning[92]. In some countries literacy and numeracy take a dominant position. Despite the broadening of the scope of the curriculum, children's early learning experiences tend be predominantly focused towards preparation for compulsory schooling. A broader approach promoting children's cognitive and non-cognitive development is more appropriate for fulfilling children's learning potential[93]. For a pedagogical practice to be effective, it needs the mutual involvement of the child and the adult. The instructive elements of ECEC practices can only be effective if they support the active participation of children in their learning, not if they are acted out as

[89] Litjens, I. and Taguma, M. (2010), *Literature overview for the OECD ECEC Network*, Paris, OECD Publishing.

[90] Fukkink, R. G. and Lont, A. (2007), Does training matter? Meta-analysis and review of caregiver training studies, *Early Childhood Research Quarterly*, 22 (3), 294-311; Bleach, J. (2013), Using action research to support quality early years practice, *European Early Childhood Education Research Journal*, 21 (3), 370-379.

[91] OECD (2006), Starting Strong II: Early Childhood Education and Care, Paris, OECD Publishing.

[92] Laevers, F. (2005), The curriculum as means to raise the quality of early childhood education. Implications for policy, *European Early Childhood Education Research Journal*, 13(1), 17-29.

[93] OECD (2004), *Curricula and Pedagogies in Early Childhood Education and Care. Five Curriculum Outlines*, PARIS, OECD Publishing..

practices of knowledge transmission[94]. Typically a curriculum which enables children to learn through play will encourage them to be fully engaged, highly motivated and proactive in communicative exchanges[95].

Certain features of ECEC curricula can be seen as good practices[96]. For example:

i. they state explicit goals across broad domains i.e. emotional, personal and social development, language and communication, knowledge and understanding of the surrounding world, creative expression and physical development and movement;

ii. they strive for an appropriate balance between learning and well-being, have a strong focus on communication and interaction, and encourage staff to work collaboratively and assess their practice.

A successful transition to school is one that is organised collaboratively so that the views of children, ECEC staff, teachers and parents are considered and valued. The involvement of parents in decision-making processes regarding the curriculum gives an explicit expression to the values of democracy and participation at the core of the social function of ECEC.

Monitoring and evaluation

Monitoring and evaluation support stakeholders and policy-makers as they respond to the needs of children, parents and local communities. Monitoring for quality also includes a focus on the processes and outcomes of ECEC. The availability of relevant, timely and accurate data and information can help the managers and leaders of ECEC services to make the right decisions on how best to improve the quality of provision. Monitoring procedures such as ongoing observation, documentation of children's learning and socialising experiences, as well as narrative assessment of children competences (e.g. portfolios), can have a positive impact on children's outcomes. These practices contribute to deepening practitioners' understanding of children's learning processes in the everyday life of ECEC settings.

Monitoring and evaluation are increasingly practised and countries are making efforts to improve methodologies and processes[97]. Every Member State has a system in place to monitor the quality of ECEC provision, although there are few benchmarks or targets. Monitoring includes checks against the rules on accreditation and approval, the need for self-assessment and the obligation to participate in external inspection. Appropriate quality monitoring and improvement of ECEC systems might be hindered by the lack of statistical information, which tends to be patchy within and across EU Member States[98]. Systematic and reliable data collection is needed to address the issues of accessibility, workforce and funding that are crucial to developing high-quality and equitable ECEC systems.

[94] Oberhumer, P. (2005), International Perspectives on Early Childhood Curricula, *International Journal of Early Childhood*, 37(1), 27-38.
[95] Monaco, C. and Pontecorvo, C. (2010), The interaction between young toddlers: constructing and organising participation frameworks, *European Early Childhood Education Research Journal*, 18(3), 341-371.
[96] Pramling, I., et al. (2006), Five preschool curricula — Comparative perspective, *International Journal of Early Childhood*, 38:11; Laevers, F. (2005), The curriculum as means to raise the quality of early childhood education. Implications for policy, *European Early Childhood Education Research Journal*, 13(1), 17-29.
[97] OECD (2015), *Starting Strong IV: Monitoring Quality in Early Childhood Education and Care*, Paris, OECD Publishing.
[98] Bennett, J. and Moss P. (2011), *Working for inclusion: how early childhood education and care and its workforce can help Europe's youngest citizens,* retrieved from: http://www.childreninscotland.org.uk/wfi/

Governance and funding

The economic argument for providing more equitable access to high-quality ECEC provision is compelling. When publicly subsidised ECEC provision is scarce, it is those children and families who would benefit most that end up being excluded[99]. In countries where ECEC subsidies have been reduced, the overall quality of ECEC provision has been lowered[100].

Direct public financing of ECEC may lead to:

- more efficient management by the public authorities;
- economies of scale;
- better quality at national level;
- more efficient training of teaching staff and fairer access than the system of paying subsidies to parents[101].

Providing additional funds to support access for disadvantaged groups can be an effective strategy. The effects of family background on children's educational attainment tend to be more limited in countries where universally accessible childcare is provided and socio-economic status differences in the population are less marked[102].

When ECEC systems are not or only partially integrated (as in the majority of EU Member States), there are lower standards of care for children under the age of 3, higher costs to parents, less equal access to all families, and more poorly educated and paid staff. By contrast, fully integrated systems tend to allocate more resources to younger children and their families. They also lead to better quality and more equitable ECEC provision and increase financial efficiency[103].

High-quality provision is more likely to occur when stakeholders are routinely and systematically consulted on the design and implementation of ECEC provision. This involves creating participatory alliances among stakeholders, supported by a coherent policy of inter-institutional collaboration[104].

[99] European Commission (2013), *Barcelona objectives: The development of childcare facilities for young children in Europe with a view to sustainable and inclusive growth*, Brussels.

[100] Akgunduz, Y. E., Jongen, E., Leseman, P., and Plantenga, J. (2013), Cutting from the future? Impact of a subsidy reduction on child care quality in the Netherlands, *Tjalling C. Koopmans Research Institute Discussion Paper Series*, No 13-18.

[101] European Commission (2013), *Barcelona objectives: The development of childcare facilities for young children in Europe with a view to sustainable and inclusive growth*, Brussels.

[102] Bennett, J. (2008), *Early childhood services in the OECD countries. Review of the literature and current policy in the early childhood field*, Florence, UNICEF Innocenti Research Centre.

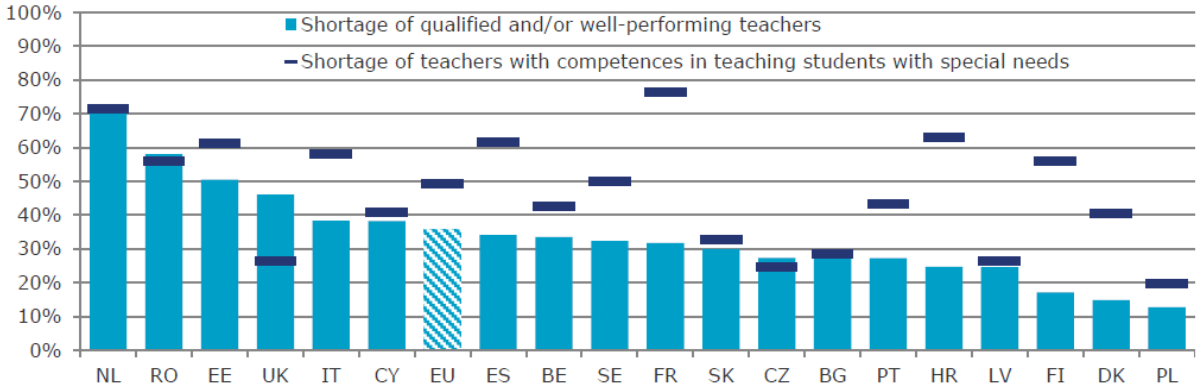
[103] Kaga, Y., Bennett, J., and Moss, P. (2010), *Caring and learning together: A cross-national study on the integration of early childhood care and education within education*, Paris, UNESCO.

[104] Lazzari, A. (2012), The Public Good. Historical and Political Roots of Municipal Preschools in Emilia Romagna, *European Journal of Education*, 47(4), 556-568.

3. Supporting teachers and school leaders for excellent teaching and learning

When it comes to achieving quality and equity in school education, teachers matter: there is broad evidence that their quality has a major impact on student achievement and motivation[105]. However, more than 1 in 3 school leaders in Europe say that staff shortages hinder quality instruction at their school[106]. At the same time, in most countries the teaching profession has lost much of its status and its attractiveness as a career choice. Teaching often loses out to other professions in attracting the best candidates. The drop-out rate of both young and experienced teachers, often due to difficult working conditions, is a serious concern in some countries[107]

Figure 3.1. Share of school leaders (in lower secondary education) who agree that teacher shortages hinder quality instruction at their school (2013)



Source: European Commission (2014), *Education and Training Monitor 2014*, based on data from TALIS 2013.
Note: BE refers to the Flemish Community (BE-nl) only, UK refers to England (UK-ENG) only.

As a result, the qualities and competences of those in the teaching professions, including school leaders, are high on the policy agenda in most European countries. 'Strong support for teachers, trainers, school leaders and other educational staff' is one of the six priorities for European cooperation in education and training up to 2020. This includes paying particular attention to policies on issues such as the recruitment and selection of teachers, the attractiveness of the profession as well as all phases of teacher education[108].

Effective support for teachers and school leaders also needs to be embedded in more comprehensive policies for better schooling. Policies that support the teaching professions cannot be separated from systematic efforts to improve curricula, strengthen quality assurance and school evaluation, make schools more inclusive and optimise the use of resources. All of these fields have an impact on teachers' working environments and the way in which they (can) do their work.

[105] European Commission/OECD (2010), *Teachers' professional development, Europe in international comparison*. The importance of teachers and their competences for education is also echoed in public opinion: see Special Eurobarometer 417 on the European Area of Skills and Qualifications, 2014.
[106] According to the OECD's 2013 Teaching and Learning International Survey (TALIS), which covered school leaders in lower secondary education in 19 EU Member States.
[107] European Commission (2012), *Study on policy measures to improve the attractiveness of the teaching profession in Europe*.
[108] 2015 Joint Report of the Council and the Commission on the implementation of the strategic framework for European cooperation in education and training (ET 2020) – *New priorities for European cooperation in education and training*. This is also backed by reports from the series of annual *International Summits on the Teaching Profession.*

In the same vein, any policies that aim to improve education cannot rely on changes at system level or top-down regulation alone. Education authorities must rely on practitioners, including teachers, school leaders and other school staff to implement and support change in their daily practice.

Finally, teachers need to be recognised as learners. This puts the spotlight on the professionals in charge of teacher education. Regardless of the setting or profile (e.g. lecturers in higher education, school-based mentors, trainers in Continuing Professional Development), teacher educators are expected to lead the way in transforming the profession. Their competences, preparation and professional development should therefore be an integral part of policies to support teachers.

The changing nature of teaching

Teaching is an increasingly complex task. It is based on a broad set of competences and on the ability to apply them flexibly in a wide range of situations. Many countries recognise that for this to be effective, teachers need to be both fully prepared and enjoy a high degree of professional autonomy in their practice (e.g. teaching methods, learner assessment)[109].

The role of teachers is changing in response to new knowledge about learning and increasing expectations about quality and equity in education. Teaching was once considered to be primarily about imparting knowledge to pupils. This is clearly no longer enough. There is research about how people learn effectively, which recognises that there are significant differences between individuals that teachers and schools need to take into account.

Education systems aim to reconcile high quality with high equity — and most of them hold schools and teachers more accountable for outcomes than in the past. They also put more focus on the lifelong development of key competences than on the acquisition of knowledge alone. In this context, the central task of teachers should be to facilitate and support successful learning of all pupils.

Supporting professionalism

Against this backdrop, teachers and school leaders need to develop a broader, different set of competences and carry out a wider range of tasks than before. They are expected to continually review, adapt and innovate their teaching and focus more on the needs individual learners. They are asked to use new technologies to enhance learning and to contribute to leadership and strategic development at school.

All of this raises questions about how education systems:

- identify and choose the best candidates for these roles;
- prepare the candidates; and
- support them to become (and continue to be) effective professionals[110].

[109] European Commission/EACEA/Eurydice (2008), *Levels of Autonomy and Responsibilities of Teachers in Europe.*

[110] See European Commission (2012), *Supporting the Teaching Professions for Better Learning Outcomes*, SWD(2012) 374 final; MacBeath, J. (2012), *Future of Teaching Profession*, Cambridge, Cambridge University / Education International Research Institute.

3.1. Making teaching careers more attractive

In Europe, only a few countries manage to attract the best graduates into the teaching profession. This includes Ireland, Finland and Scotland in the United Kingdom, where interest in Initial Teacher Education (ITE) is high and applicants usually far outnumber the places available[111]. In other countries, interest is so low that policies must focus on mechanisms to 'weed out the worst' rather than selecting the best for teaching[112].

A decline in status and shortage of qualified staff are common problems across the EU. In some countries, the age structure of the teaching force points to serious recruitment challenges in the near future. Other countries experience regional staff shortages or challenges to fill vacancies for specific education levels, subject areas or teacher profiles.

For most countries, raising the status and attractiveness of the teaching profession has a dual purpose: to draw in a wider range of highly suitable candidates and to motivate excellent teachers to continue in a demanding job. Despite the seriousness of the challenge, only 1 in 2 European countries have taken any significant policy measures to increase the attractiveness of the teaching profession. And only five countries are considered to have broad and systemic strategies in this field (Estonia, Ireland, Lithuania, UK-Scotland and Norway)[113].

Systems of selection and recruitment

Improving how teachers are selected and recruited can help identify those most suitable for teaching. Targeting under-represented groups and career changers can help increase the pool of candidates. More diverse backgrounds and a range of previous experiences both benefit student learning. For instance, teachers with an immigrant or minority background are still largely under-represented in most European countries[114].

Some countries have started refining the way in which candidates are assessed. Academic merits (school leaving exams) are still the most frequent criteria for entering ITE, but are increasingly accompanied by a broader assessment of candidates' aptitudes and attitudes[115].

Attracting under-represented groups into teaching

While societies in Europe are increasingly diverse in terms of culture and language, the teaching profession is still relatively homogeneous in most places. Besides equal access to the profession, there are other compelling reasons why the teaching force should reflect the diversity of our societies. First, education systems cannot afford to limit the pool of candidates for teaching by effectively excluding a large share of the population and wasting potential talent. This is particularly true in light of current staff shortages and decreasing interest in teaching careers. Second, teaching is also a highly visible profession. A more diverse teaching force will offer young people a range of role models and will help fight stereotypes[116].

[111] European Commission (2013), *Study on policy measures to improve the attractiveness of the teaching profession in Europe*.
[112] European Commission (2012), *Report from a Peer-Learning Activity on 'Selecting the best for teaching'*, The Hague, Netherlands, December 2012.
[113] European Commission (2013), *Study on policy measures to improve the attractiveness of the teaching profession in Europe*.
[114] European Commission (2016), *Study on the diversity within the teaching profession*.
[115] European Commission/EACEA/Eurydice (2013), *Key Data on Teachers and School Leaders in Europe.*
[116] European Commission (2016), *Study on the diversity within the teaching profession*.

Policies to promote a more diverse teaching force are more effective if they also aim to remove obstacles to under-represented groups, including people with an immigrant background, wanting to enter teacher education and the profession (and stay). Such policy measures are mostly found in a few European countries with very diverse learner populations, including Austria, Germany and the United Kingdom.

There is also a striking gender imbalance in teaching, and it is set to further increase. In lower secondary education, teaching is a job largely exercised by women: at EU level, less than a third of the teaching force (32.2 %) are men, while in some countries (Bulgaria, Estonia, Latvia, Lithuania) as few as 1 in 5 teachers are men. The gender imbalance is greatest among the youngest teachers (only 28.8 % male teachers in the under 30 age group), which suggests a trend towards an overall more pronounced gender imbalance in future[117]. In primary education, the gender imbalance is even greater, with almost 85 % female teachers across the EU (96 % or more in Italy, Slovenia, Hungary and Lithuania)[118].

Where relevant for Member States, strengthening systems for the selection and recruitment of new teachers is an opportunity to also address the intake of candidates from under-represented groups. In times of shortage and relatively low interest, it appears opportune for countries to combine more thorough assessment and stricter entry requirements with simultaneous efforts to increase the pool of potential candidates.

Teacher salaries

Remuneration is a key element in making teaching an attractive profession. Teachers refer to the aspect of pay along with other factors such as working conditions, career prospects, professional development opportunities and recognition[119].

In some Member States, teaching loses out to other professions in trying to recruit the best. Across the EU, teachers earn significantly less than the average for tertiary-educated workers: salaries range from 74 % in pre-primary education to 92 % at upper secondary level. There are marked differences between countries: at primary school level, for instance, teachers in the Czech Republic earn 56 % of the average for tertiary-educated workers, whereas in Luxembourg they earn 108 %[120].

Over the last 7 years, minimum statutory salaries have increased or stayed around the same in real terms in most European countries. The increase was more than 15 % in the German-speaking Community of Belgium, Bulgaria, the Czech Republic, Estonia, Lithuania, Hungary (secondary education), Slovakia and Sweden (upper secondary education). But in six EU Member States, teachers' minimum statutory salaries are still below 2009 levels (Malta, Slovenia, Finland, the United Kingdom, Ireland and Greece)[121].

[117] European Commission/EACEA/Eurydice (2015), *The Teaching Profession in Europe. Practices, Perceptions, and Policies.*
[118] Eurostat Press Release 189/2016, 4 October 2016.
[119] European Commission (2013), *Study on policy measures to improve the attractiveness of the teaching profession in Europe*.
[120] OECD (2016), *Education at a Glance 2016: OECD indicators*. Data for 22 EU Member States, referring to actual salaries of all teachers, relative to earnings for full-time full-year workers with tertiary education (ISCED 5 to 8).
[121] European Commission/EACEA/Eurydice (2016), *Teachers' and School Heads' Salaries and Allowances in Europe 2015/16*.

3.2. Teaching: a profession of career-long learners working together

Teaching requires a high level of expertise and continuous development. Effective teachers have a broad range of teaching methods to draw from and the ability to constantly adapt their teaching to different situations and learners. Even the most experienced teachers need to reflect on and update their methods and keep developing their competences[122]. An increasing number of countries acknowledge these complex professional requirements by requiring a teaching qualification at Master's level. Many countries use competence frameworks or standards to determine the competences that teachers require at different steps or levels of their career[123].

Making Initial Teacher Education (ITE) fit for purpose

ITE is crucial for ensuring quality in the teaching force. It is also vital for bringing about a shift towards new ways of organising teaching and learning and the working cultures that underpin them. This first phase of teacher education is when the foundations are laid to enable teachers to adapt to changing contexts and circumstances.

Making ITE fit for the purpose of preparing future teachers to deal with the changing realities of school should therefore be a key issue for policy-makers. It is a joint task for governments, ITE providers (typically universities and colleges of teacher education with a high degree of autonomy) and other key stakeholders such as schools, local authorities and teachers' unions. In response to this, some countries have been developing collaborative modes of governance to strengthen ITE[124].

Teachers feel best prepared if their initial education combines pedagogical theory with subject knowledge and classroom practice[125]. Beyond these basic elements, teacher educators should also encourage and challenge future teachers to develop the competences and attitudes they need for collaborative school practice and career-long professional development. In the same vein, ITE programmes need to change so that teachers are better prepared for diverse, multicultural and multilingual classrooms and for using new technologies with confidence to enhance learning.

Preparing teachers for diversity in the classroom

A 2017 study on the role of ITE in preparing teachers for diversity[126] found that in many countries, policies are based on a perception of diversity as a deficit or burden to be dealt with (not as an asset or opportunity to enrich learning for all). The study also found that ITE systems that are based on competences are more likely to effectively prepare student teachers for diversity, provided competences for diversity are well defined. The authors recommend that comprehensive ITE curricula should be combined with targeted approaches to better prepare student teachers for diversity. While teacher educators are key, they were found to be rarely prepared to teach ITE curricula for diversity. The development of a supportive culture

[122] Council Conclusions of 20 May 2014 on effective teacher education, 2014/C 183/05.
[123] ibid.
[124] Policy suggestions and country examples can be found in Chapter 5 '*Governance of Initial Teacher Education*' of the report '*Shaping Career-long Perspectives on Teaching. A Guide on Policies to Improve Initial Teacher Education*.'.
[125] ibid. (TALIS 2013).
[126] European Commission (2017), *Preparing Teachers for Diversity: the Role of Initial Teacher Education.*

is therefore recommended at all levels for policies on ITE for diversity to be successfully implemented.

Helping teachers embrace digital technologies to enhance learning

Using new technologies both for teaching and other school-related tasks ranks among the areas where teachers express most need for professional development[127]. Integrating new technologies and related educational materials into ITE can make a difference to their uptake in school practice. The use of technology should be embedded in teacher education programmes (and not be part of a one-off course or module). The proposed measure for a European digital competence framework for educators could provide useful support here[128].

Example of an Erasmus+ project:

TACCLE ('Teacher Aids on Creating Content for Learning Environments') is series of projects aimed at developing the competences of teachers with basic computer skills to help them use innovative ICT-based content and methods in teaching. The projects have so far resulted in a survey of teachers' needs, a manual on how to create content for e-learning environments, and five step-by-step guides on integrating ICT and e-learning in the classroom for different education levels and in different subject areas. For more information: www.taccle3.eu.

Offering early career support through systematic induction

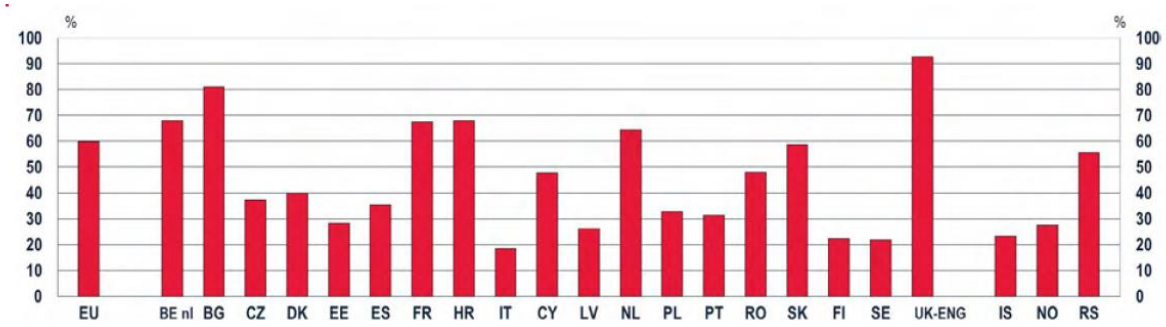
Research suggests that effective ITE includes a high degree of school practice[129]. But even the best programmes cannot fully prepare teachers for all aspects of entering the profession. A structured support phase for newly qualified teachers, referred to as early career support or induction, is considered crucial by teachers[130]. It is meant to help beginning teachers overcome possible 'praxis shock', find their way and develop resilience in a critical phase of their careers. It aims to reduce the costly drop-out rate in the teaching profession, improve teacher quality and support learning cultures and professionalism in schools.

In almost two thirds of Member States, there are regulations that provide for structured induction phases for newly qualified teachers. However, their organisation and duration varies greatly between countries. Figures on real participation in induction (Figure 3.1) suggest that even in countries with system-wide schemes, induction is far from universally available.

In many countries, induction is compulsory. But even where there are no central regulations on compulsory induction, there may be a large number of local authorities and schools that organise the induction of newly qualified teachers.

[127] OECD (2014), *TALIS 2013 Results. An International Perspective on Teaching and Learning*, Paris, OECD Publishing.
[128] https://ec.europa.eu/jrc/en/digcompedu.
[129] European Commission (2014), *Initial teacher education in Europe: an overview of policy issues*, Author: F. Caena.
[130] European Commission (2013), *Study on policy measures to improve the attractiveness of the teaching profession in Europe*.

Figure 3.2. Proportion of teachers with no more than five years of experience in lower secondary education (ISCED2) who took part in formal induction programmes as newcomers to teaching, 2013



Source: European Commission/EACEA/Eurydice (2015), *The Teaching Profession in Europe: Practices, Perceptions, and Policies*. Based on TALIS 2013.

Induction typically lasts at least several months. It may or may not be linked to probation periods or the assessment of teacher competences. In some countries, induction is limited to mentoring[131].

Policy handbook on induction programmes for beginning teachers

Policy guidance developed at EU level has suggested that any induction system should meet beginning teachers' needs for three basic kinds of support: personal, social and professional. In the policy handbook entitled '***Developing coherent and system-wide induction programmes for beginning teachers: a handbook for policymakers***', a structure is proposed based on four interlocking sub-systems: mentoring, expert inputs, peer support and self-reflection[132].

To ensure the success of induction programmes, a number of conditions need to be met. These relate to: financial support, clear roles and responsibilities, cooperation, a culture focused on learning, and quality management.

Induction is a key phase in the career-long continuum of teacher education. Involving teacher educators with ITE backgrounds in its design and delivery can help create feedback loops to improve the quality and relevance of ITE programmes.

Investing in Continuing Professional Development (CPD)

CPD requires sustained and targeted investment. The key challenge with CPD is to ensure it has a lasting impact on student learning, and that this impact extends beyond the individual teacher so that it benefits learners throughout the entire school.

[131] European Commission/EACEA/Eurydice (2015), *The Teaching Profession in Europe. Practices, Perceptions, and Policies.*

[132] European Commission (2010), *Developing coherent and system-wide induction programmes for beginning teachers: a handbook for policymakers*, SWD (2010) 538 final
http://ec.europa.eu/education/policy/school/doc/handbook0410_en.pdf

Involving schools and teachers in agreeing on priority topics can help improve the relevance of CPD on offer[133]. Collaborative formats based on learning among peers have great potential to complement traditional courses or workshops away from school, which are often costly. School-based formats can also help increase the impact of CPD among staff and support the school as a learning organisation[134].

Digital technologies and open education have transformed opportunities for collaborative learning, networking and the use of teaching resources. For example, teachers are an important target group for massive open online courses (MOOCs)[135]. Even MOOCs that are not explicitly designed for teachers attract a high share of people who work in education (between 10 % and 25 %). This may have an indirect impact on the level of competence and content knowledge of the teaching force.

Creating a continuum of teacher education

Investing in the quality of teachers requires efforts to link all the phases of teacher education – from ITE and induction through to career-long CPD. In such a continuum of teacher education, teacher educators in different settings including schools and universities work together with school authorities, school leaders, teachers' unions and other stakeholders to make professional development relevant, effective and coherent. This helps, for example, redesign professional development based on both research and feedback from school practice. It also helps reduce the risk of drop-outs at key moments such as the transition from higher education to employment in the teaching profession.

Policies for quality in the teaching profession should connect and integrate five interrelated aspects, which address:

- teachers' learning needs;
- support systems;
- career paths;
- the organisation of competence levels;
- the impact of school culture.

The key challenge for policy-makers is to ensure an effective 'continuum of the teaching profession', with continuity and coherence for each of these aspects, and interconnections between them.

Shaping career-long perspectives on teaching

The following suggestions for policies to enhance the quality and effectiveness of teacher education draw on lessons from peer learning and case studies from 30 European countries[136].

[133] European Commission/EACEA/Eurydice (2015), *The Teaching Profession in Europe. Practices, Perceptions, and Policies.*

[134] For a broad discussion of the concept of schools as learning organisations see OECD (2016), *Schools as learning organisations*, Paris, OECD Publishing.

[135] European Commission, JRC-IPTS (2016), *MOOCs in Europe: Evidence from pilot surveys with universities and MOOC learners.*

[136] European Commission (2015), *Shaping Career-long Perspectives on Teaching. A Guide on Policies to Improve Initial Teacher Education.*

- *Strengthen the continuum of teacher education:* policies can stimulate and encourage professional growth when they strengthen the interconnection between the different phases of teachers' professional development: ITE, induction and CPD.
- *Achieve continuity through institutional partnerships*: this can be achieved through links and partnerships between pre-service and in-service teacher educators, and between teacher education institutions and schools.
- *Define coherent competence levels for shared understanding and ownership:* a coherent competence framework that identifies different competence levels can be instrumental in supporting a teacher's development throughout their career.
- *Create a balanced offer of CPD with strong impact*: to improve the offer and impact of professional development, activities should be both teacher-initiated and inspired by expectations and requirements at different levels (school, local and central government). Additional policies could channel resources into supporting particular areas of current need or low achievement in school education.
- *Encourage teacher responsibility: self-directed learning for their own needs:* to ensure high-quality practice is maintained, teachers need the ability and sense of agency to assess their own learning needs and self-direct their learning. ITE curricula could include explicit objectives for teachers to identify and assess their own needs for professional development.
- *Recognise a wide range of professional development opportunities:* recognise formal as well as informal and non-formal learning as valid and powerful means of professional development. This includes promoting group learning, experimental activities and the exchange of experience among teachers.
- *Improve teaching practice through links with research:* to achieve a creative and reflective teaching workforce, policies and actions should encourage student teachers and teachers to use and engage in new research in their learning and teaching practice.
- *Link teacher development with school improvement:* professional development activities and human resource policies, where they are organised at school level, should be connected to the school's wider agenda to strengthen the impact of all three. In their dialogue with teachers, HR professionals and school leaders could consider how to link school improvement goals to CPD and teacher appraisal.
- *Recognise flexible career paths and multiple roles:* to support teacher development and flexibility in teachers' careers, policy-makers should find ways of recognising the range of entry points and roles and create inclusive policies that value and certify different skills and experiences.

Collaboration in teaching

Teamwork is seen as a powerful way of improving teaching and learning. While teaching used to happen mostly behind closed classroom doors, school practice is changing. Teachers are increasingly required to be able (and willing) to work in teams to enhance student learning[137]. This also extends to collaboration in multi-professional teams, which includes, for

[137] For a discussion of literature on teachers' collaborative learning and professional learning communities, see European Commission (2011), *Literature review: Quality in teachers' continuing professional development.* Author: F. Caena.

instance, psychologists, speech therapists and guidance counsellors. External partners may include other schools and educational institutions, social services, local organisations and businesses or the police.

International surveys also reveal positive links between a collaborative culture at school and a teacher's satisfaction with their school. However, at the same time levels of actual teacher collaboration around Europe remain relatively low. Data for primary schools in 17 Member States shows that collaboration in planning and preparing instructional materials is relatively rare. It is particularly low in 7 EU countries (Czech Republic, Ireland, Malta, Hungary, Austria, Portugal, Finland), where less than 40 % of students are in classrooms where teachers collaborate with colleagues for this purpose on a weekly basis[138].

eTwinning: community for schools in Europe, and the world's largest teacher network

More than 460 000 teachers (and 4 in 10 schools in Europe) have participated in eTwinning since its launch in 2005. eTwinning offers a safe online environment for joint projects with pupils in different countries, and a community for teachers to network and exchange resources. It is also about teachers learning together. It is a good example of using a digital platform for peer-to-peer collaborative professional development. This includes a range of formats, from short online learning events to long online courses and face-to-face training events. eTwinning is part of the EU's Erasmus+ programme.

Collaborative arrangements are also found to hold benefits for teachers' own learning. Classroom observation among colleagues and professional learning communities are gaining ground as powerful forms of peer collaboration, but are not the norm across Europe yet. For example, less than 40 % of pupils have teachers who practice peer observations on a monthly basis. In 6 EU countries (Malta, Austria, Italy, Germany, Ireland and the Czech Republic), this is the case for less than 20 % of pupils[139].

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Supporting teachers' collaborative learning

The following suggestions for policy actions on how to create collaborative learning environments for teachers draw on lessons from peer learning and case studies from 30 European countries[141].

[138] European Commission (2016), *Education and Training Monitor 2016* (citing data from the OECD's TALIS 2013), pp. 62-63.
[139] ibid.
[140] ibid.
[141] The following sections are based on the findings and suggested policy actions by the ET 2020 Working Group on Schools Policy (2014-15) on its priority theme 'Initial Teacher Education'. The results were presented in November 2015 in a report '*Shaping Career-long Perspectives on Teaching. A Guide on Policies to Improve Initial Teacher Education*.'.

Develop collaborative attitudes in future teachers: ITE should encourage and develop positive attitudes towards professional dialogue, sharing, collaborative critical thinking and peer learning.

Encourage and support collaboration between teacher education institutions: when designing a new organisational or institutional structure, priorities should be given to solutions favouring collaboration both within the individual institution and between institutions.

Share good practice to advance collaborative approaches in ITE: This should be a mutual sharing between policy-makers and education professionals of the benefits of and good practice in collaborative learning. Digital tools may play a role in this.

Ensure autonomy and support for local collaboration: the best collaborative learning environments are those that are tailored to the local context and are accepted and monitored by local partners. School leaders should have the freedom and support to establish and sustain close cooperation with social partners, local community organisations and other schools.

Support action research as a mode of collaboration: action research should be promoted as an effective means to identify and develop valid solutions to specific challenges in classroom practice.

Provide sufficient and cost-effective investment: initiating and sustaining collaborative work in teacher education typically requires investment. Stakeholders should therefore allocate sufficient time and resources and avoid financial arrangements that are linked to individual achievements only.

Support networking among teachers: networking can be an effective basis for high-quality teaching practice, but needs to be based on equality. Examples include networks of innovative schools and ITE providers, and online platforms that offer e-learning courses and the sharing of resources.

Promote a culture of collaborative learning among staff: mutual trust is a pre-condition required for a collaborative work culture in schools. Policy-makers, educational leaders and all relevant stakeholders need to work together to promote collaborative forms of teaching and learning for this.

Prepare all teachers for distributed leadership: effective collaborative learning can be facilitated by collaborative — or distributed — leadership models at school involving teachers. Teacher education should systematically address leadership in some way, for instance through school-based or external leadership programmes.

3.3. Supporting school leadership

In many systems, increased school autonomy has led to more responsibility for school leaders. This allows leaders in principle to re-model learning and stimulate school development in ways that improve the learning of all pupils (and staff). However, it requires the education system to support school leadership in assuming these responsibilities through either resources or curricula, and to accompany increased autonomy with greater accountability[142].

[142] Secondary Education Council of the Netherlands (VO-raad)/European Federation of Education Employers (EFEE)/European Trade Union Committee for Education (ETUCE) (2015), *Professional Autonomy, Accountability and Efficient Leadership – and the role of employers' organisations, trade unions and school leaders.*

The leadership roles that aim to improve learning and school development are often referred to as 'instructional leadership' (as opposed to e.g. administrative leadership, which is linked to managerial or administrative issues of the school). In most of the countries covered in the OECD's Teaching and Learning International Survey (TALIS), the vast majority of school leaders act as instructional leaders. However, around one third is still rarely involved in measures such as:

- supporting cooperation among teachers to develop new teaching practices;
- ensuring that teachers take responsibility for the learning outcomes of their pupils and for improving their own teaching competences)[143].

As outlined in Chapter 2.2, sharing responsibilities among a larger group of staff ('distributed leadership') can create broader ownership of school issues and allow the nominal school leader to focus on improving the quality and equity of learning. It is also positively associated with a healthy school climate and the professional learning of staff[144].

While school leadership is shared to some extent in almost all EU countries, it is extended most often to formal leadership teams only. Only a few countries systematically promote more innovative approaches to distributed leadership, for instance by combining formal approaches with ad hoc approaches, or informal groups and roles[145].

In practice, leading a school is often a demanding mix of tasks linked to both management/administration and instruction. In many countries, schools struggle to fill leadership vacancies with high-calibre candidates. This is often linked to unattractive working conditions, a perceived lack of recognition or autonomy, limited opportunities for professional development or the lack of induction[146]. Considering the impact of leadership on learning and school development, the recruitment, preparation and professional development of school leaders are of central concern for policy-makers[147].

Most countries offer specific programmes for the preparation of school leaders, but length and content vary greatly between countries. For example, only a few countries have dedicated leadership academies[148]. The importance of professional development opportunities for school leaders is underlined by evidence from the TALIS survey: school leaders who took part in preparation programmes or CPD on instructional leadership, i.e. measures to improve teaching and learning, were also more likely to put these into practice[149].

A toolkit on school leadership for equity and learning

The European Policy Network on School Leadership is a collaborative network bringing together policy-makers, researchers, practitioners and stakeholders to promote and advise on policies of school leadership for equity and learning. The network has developed a toolkit to support the work of policy-makers, leadership academies, school authorities, schools and others. It is available online at http://toolkit.schoolleadership.eu/.

[143] OECD (2016), *School Leadership for Learning. Insights from TALIS 2013*, Paris, OECD Publishing; see also Cedefop (2011) *Exploring leadership in vocational education and training*.
[144] ibid.
[145] European Commission/EACEA/Eurydice (2013), *Key Data on Teachers and School Leaders*.
[146] European Commission (2012), Supporting the Teaching Professions for Better Learning Outcomes, SWD(2012) 374 final; OECD (2008), Improving School Leadership, Volume 1: Policy and Practice.
[147] Council conclusions on effective leadership in education, 1 February 2014, 2014/C 30/02.
[148] ibid.
[149] OECD (2016), *School Leadership for Learning. Insights from TALIS 2013*, p. 86.

School leaders operate at the interface between educational policies and their implementation in schools. As a result, they have a demanding role that requires, among other competences, vision, a capacity for strategic thinking and efficient resource management, and the ability to improve learning environments and learning cultures.

Peer learning among Member States suggests that these expectations require the following personal attributes: courage, optimism and resilience, tolerance, emotional intelligence, self-awareness, energy, ambition and commitment, and an appetite for learning[150].

[150] Education and Training 2020, Thematic Working Group 'Teacher Professional Development', Report of a Peer Learning Activity, Limassol, Cyprus, 17-21 October 2010.

4. Governance of school education systems: becoming more effective, equitable and efficient

Over recent decades school education systems across Europe have been changing profoundly. There has been a major trend towards decentralisation and increased school autonomy. The changing policy context has put increasing emphasis on efficiency and on holding schools and teachers more accountable for education outcomes than in the past[151]. It is a challenge for countries to adapt their policies and maintain the effectiveness and equity of schooling in light of these changes.

Today the use of resources and quality assurance mechanisms are among the key pillars for governing school education systems. An analysis of the main trends in school governance shows that while there is a willingness to motivate and support innovation, there are several obstacles. In particular, there is a big time lag ranging from 8 to 14 years between the rapid development of new reforms in education systems and the appearance of their effects [152].

Effectiveness, equity and efficiency: an 'impossible trinity'?

The concepts of effectiveness, equity and efficiency in education are rather broad. In this document, 'educational effectiveness' refers to the ability to provide high-quality educational outcomes, by making the most of the available human and physical resources. Studies of educational effectiveness usually analyse whether specific resources have positive effects on different outcomes, and if so, how large these effects are[153]. 'Efficiency' adds a financial dimension to the analysis of effectiveness and refers to the ability to provide the desired educational outcomes at the lowest possible cost. 'Equity' means that the variation in educational outcomes is relatively small among different social groups (e.g. socio-economically advantaged and disadvantaged students, natives and immigrants).

The immediate policy question is to what extent a school education system can be effective, equitable and efficient at the same time. Figure 4.1 illustrates four stylised policy models that may result when a system successfully reaches at least two of these three objectives. Each model is identified with a different letter in the figure. A system can be:

A: effective and equitable but not efficient: it provides high-quality outcomes for all students, but at an excessive financial cost.

B: equitable and efficient but not effective: the outcomes are similar for all students at the lowest possible financial cost, but they are not of a high quality.

C: effective and efficient, but not equitable: it provides high-quality outcomes on average at the lowest possible cost, but not for all students.

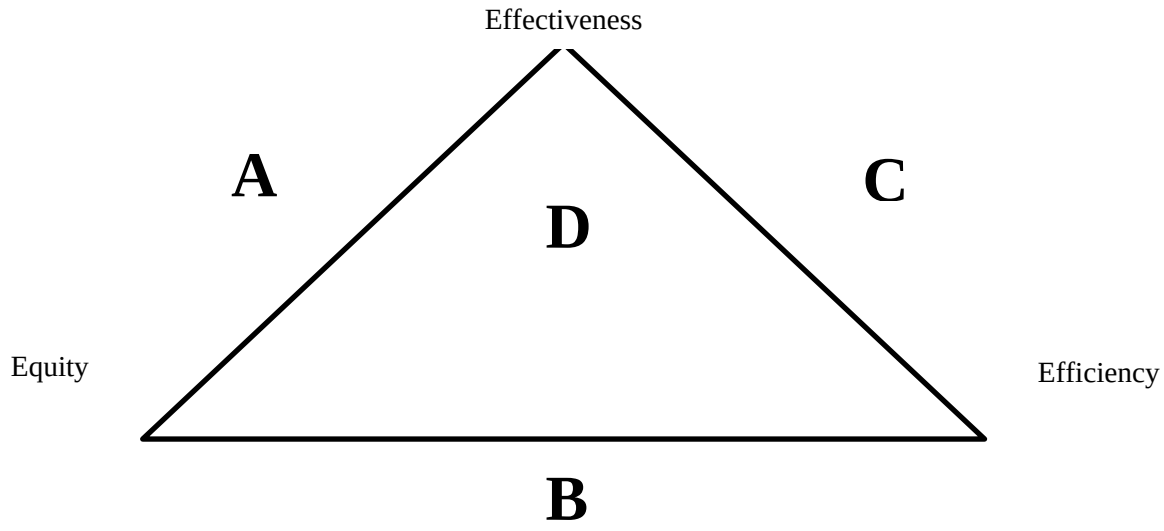
D: effective, equitable and efficient: it provides high-quality outcomes for all students at the lowest possible cost.

Getting an education system as close as possible to policy model D would be the most desirable option. In practice, most countries already struggle to pursue two out of the three possible goals. Policy-makers often perceive trade-offs between those objectives and the need to make a choice depending on the importance they attribute to each objective. Then ensuring

[151] European Commission (2015), *Comparative study on quality assurance in EU school education systems: Policies, procedures and practices. Final report*, Directorate-General for Education and Culture.
[152] OECD (2016), *Governing Education in a Complex World*, Paris, OECD Publishing.
[153] Lockheed, M.E. and E. Hanushek (1994), Concepts of Educational Efficiency and Effectiveness, *Human Resources Development and Operations Policy Working Paper*, No 24.

effectiveness, equity and efficiency at the same time may look like an 'impossible trinity'. However, research shows that the relation between effectiveness, equity and efficiency depends on the set of educational policies that are pursued. Consequently, these three objectives can complement each other[154].

Figure 4.1. Effectiveness, equity and efficiency



A possible way to make this impossible trinity become a reality is as follows. The OECD PISA surveys have consistently found that education systems can combine effective outcomes and high levels of equity[155]. Efficiency would then complete the picture by answering the following policy question: can the system provide at least the same levels of effectiveness and equity at a lower cost? If the answer is yes, then there is room for increasing efficiency. If the answer is no, then cost-saving policies would worsen educational outcomes. In other words, increasing efficiency can be seen as a desirable policy goal only if it does not reduce the effectiveness and/or equity of an education system.

Providing guidance on how school education systems can become more effective, equitable and efficient is one of the main objectives of the ongoing *Review of policies to improve the effectiveness of resource use in schools*[156] carried out by the OECD in cooperation with the European Commission. It consists of country reports, with 12 EU Member States involved so far, as well as three thematic reports, namely on (i) funding of school education (to be published in 2017); (ii) school offer and organisation of the school network; and (iii) management of human resources in the school system (both (ii) and (iii) to be published in 2018).

4.1. School resources: investing adequately and efficiently

Education serves many different purposes and helps achieve a broad range of personal, social and economic objectives:

[154] Woessmann, L. (2008), Efficiency and equity of European education and training policies, *International Tax and Public Finance*, Vol. 15(2), 199-230.
[155] OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*, Paris, OECD Publishing.
[156] http://www.oecd.org/education/schoolresourcesreview.htm

- to prepare for active citizenship;
- to underpin active social inclusion;
- to prevent unemployment;
- to fuel innovation;
- to counter the impact of demographic ageing.

While education is above all an engine for personal improvement, its benefits go well beyond the individual[157].

While there is considerable variation within and between Member States' national education systems and outcomes, all of them face similar challenges. Particularly in times of tight public budgets, all countries are seeking new ideas and better solutions to improve education outcomes for more people. EU-level cooperation can support the reform efforts of Member States and educational institutions, by offering a platform for evidence-based analysis, policy discussion and mutual learning, to help identify the key ingredients of successful policies.

The economic benefits of effective and equitable education systems

Education contributes to economic development in three main ways:

- It improves productivity by equipping people with competences[158] that enable them to accomplish tasks more effectively and work with more sophisticated technology. Higher productivity in turn improves competitiveness in the global economy, where low-wage regions fight for market shares and Europe can only compete through productivity growth.
- It improves employability.
- It strengthens innovation capacity by providing the knowledge and competences to generate and adopt new ideas that spur technological progress.

The economic returns to individual investments in education have been extensively analysed. Investing financial resources and time (including foregone earnings) in education yields net financial benefits in the form of higher lifetime earnings which amount to more than the initial investment cost.

Recent estimates based on the 2012 OECD programme for international assessment of adult competencies (PIAAC) survey confirm that higher cognitive skills lead to higher wages: across the 17 EU countries involved, improving individual numerical competence by one of the six PIAAC proficiency levels leads to a 17 % higher average wage (with the benefit ranging from 24 % in Ireland to 14 % in Cyprus)[159].

Timing is a key factor determining the impact of education investment, since learning is a cumulative process, and early childhood is a window of opportunity for quick and efficient learning. Although it is difficult to quantify the returns to investment in early childhood

[157] For a broader discussion on the socio-economic outcomes of education, see European Commission (2012), *Rethinking Education: Investing in skills for better socio-economic outcomes*, COM(2012) 669 final.
[158] Competences or skills are used here interchangeably to indicate the combination of knowledge, cognitive and non-cognitive abilities and other personal characteristics that make it possible to perform professional tasks. For simplicity, it is assumed that education jointly improves all those elements, resulting in better skills.
[159] Hanushek, E.A., G. Schwerdt, S. Wiederhold and L. Woessmann (2013), Returns to Skills around the World: Evidence from PIAAC, *NBER Working Paper*, No 19762.

education, evidence shows that investing in it improves academic attainment, job opportunities and earnings, especially for children with disadvantaged backgrounds[160]. Investing in education at a very early stage tends to be both more effective and more efficient in achieving results[161].

When comparing the costs and benefits of investing in a person's education, one must not forget that while individual costs and benefits are relatively easy to identify, investment in education also brings about additional collective benefits. These are far from negligible but are more difficult to measure: for example, higher individual earnings result in higher tax revenues for the public budget, but the precise amount depends on the person's specific situation and the country's tax code. Yet there is clear evidence suggesting that investment in education represents a substantial net benefit in all countries and time periods.

An analysis of 24 OECD countries over a 40-year period (1960-2000) shows that countries displaying higher average scores in the PISA survey also recorded a higher annual rate of real growth of GDP per capita. More specifically, moving upwards from one country to another along the PISA scale, for every 25-point improvement in education scores per capita, economic growth is higher by nearly half a percentage point of GDP. The scope for — and the potential benefits of — bringing down the share of low achievers are considerable in many Member States (see Chapter 2).

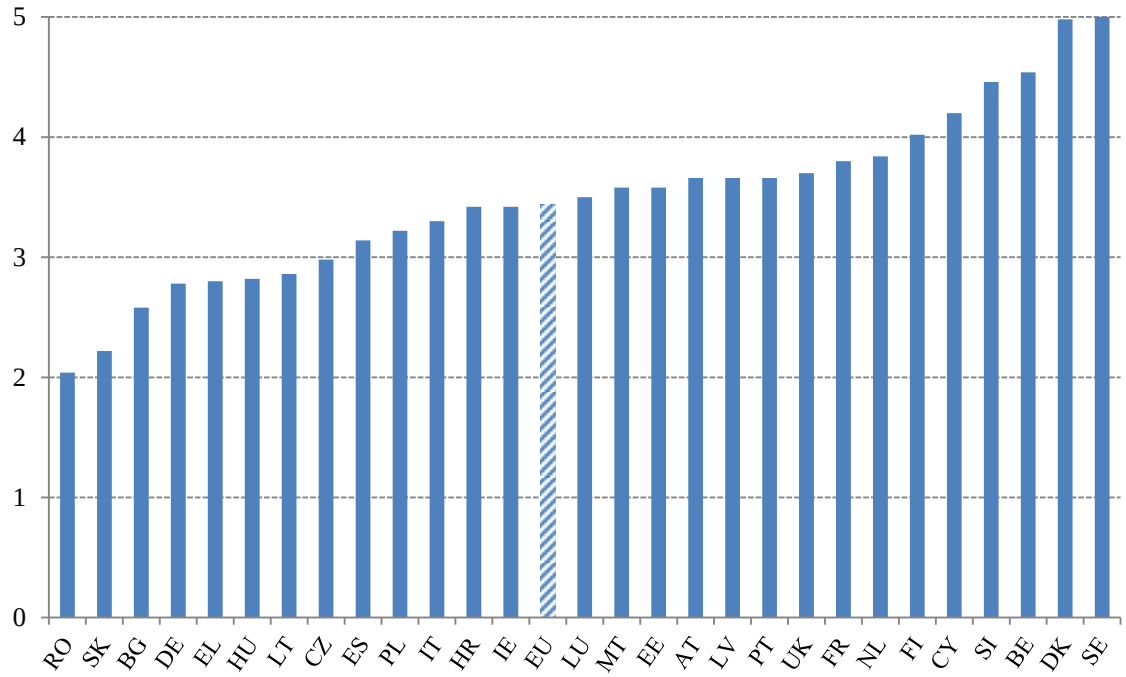
Improving efficiency in school education

EU Member States allocate a significant amount of resources to school education. Making good use of these resources is key for the efficiency of a country's whole public expenditure. In the EU as a whole, expenditure on pre-primary to secondary levels amounts to more than 3 % of GDP and even reaches 5 % in Denmark and Sweden. However, some Member States' spending levels are well below the EU average (Figure 4.2). This suggests they have not been investing sufficiently to achieve good long-term results.

PISA surveys show that below a minimum level of financing effective educational outcomes cannot be achieved. However, at a comparable level of spending, some countries achieve better results than others. According to the OECD, *'Among the countries and economies whose cumulative expenditure per student is under USD 50 000 […], higher expenditure on education is significantly associated with higher PISA science scores. But this is not the case among countries and economies whose cumulative expenditure is greater than USD 50 000, which include most OECD countries […]. It seems that for this latter group of countries and economies, factors other than the level of investment in education are better predictors of student performance'*[162].

[160] Education can also play a very important role in the integration of first and second-generation migrants, as discussed in S. Flisi; E.C. Meroni, M.E. Vera Toscano; *Educational outcomes and immigrant background*, JRC Scientific and Technical Reports, 2016.
[161] Heckman, J.J. (2008), Schools, Skills, and Synapses, *IZA Discussion Paper*, No 3515.
[162] OECD (2016), *PISA 2015 results (Volume II): Policies and Practices for Successful Schools*, Paris, OECD Publishing, p. 185.

Figure 4.2. Public expenditure on pre-primary to secondary education as a % of GDP (average 2011-15)



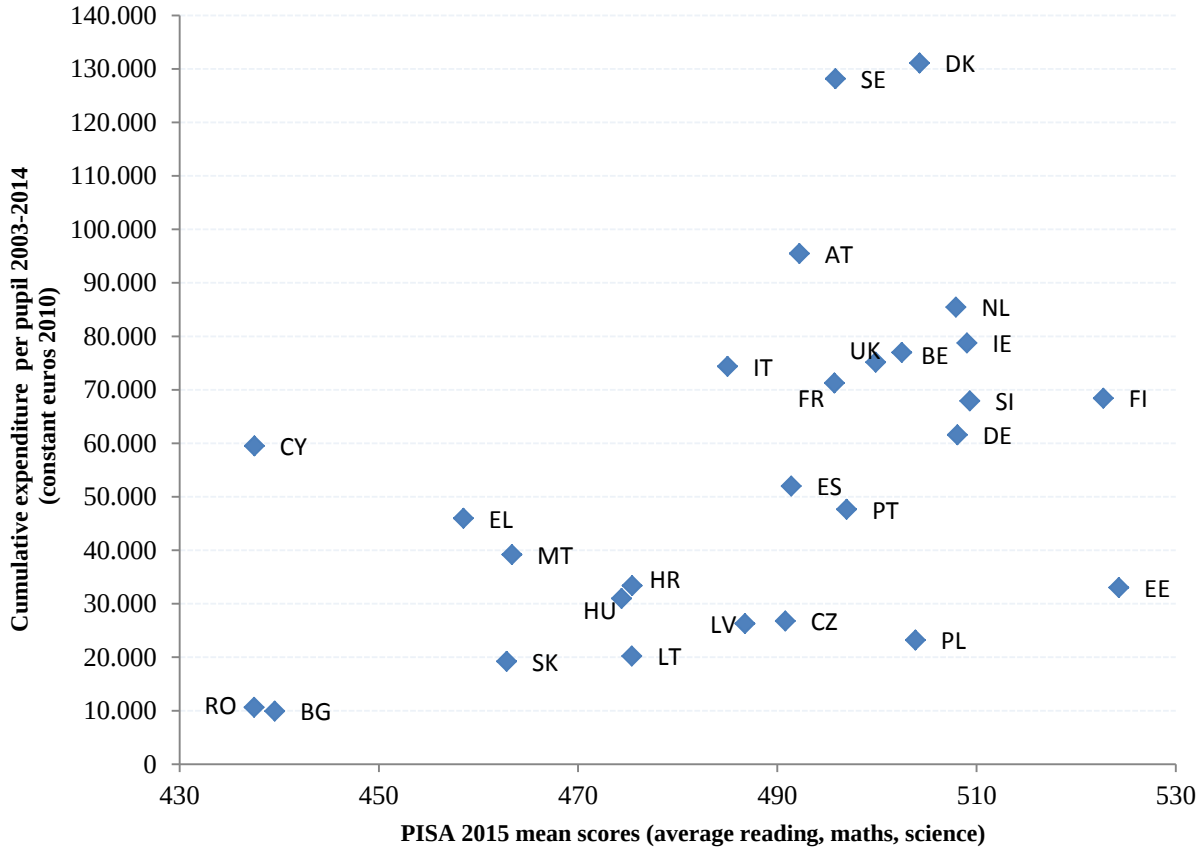
Source: Eurostat, General government finance statistics. Online data code: *gov_10a_exp*

Indeed, a comparison of how much countries spend on the education path of pupils aged 15 with the results achieved by those pupils in PISA shows striking differences among EU Member States (Figure 4.3). With a few exceptions, most central and eastern European Member States combine low expenditure with medium PISA scores. By contrast, countries at the top of the spending range show good but not excellent scores. Between those extremes, some mid-spending countries have widely dispersed results, with some of them recording excellent results. Looking at Figure 4.3 from the left-hand to the right-hand side, it appears that for any given level of spending, some Member States can get much better results than others[163].

Improving efficiency is highly relevant in Europe's current economic situation. This is also relevant for the strategic framework on European cooperation in education and training (ET 2020) and its tools for mutual learning, which can be used to address the question of efficient investment.

[163] Expenditure is converted in euro at 2010 prices. To account for expenditure effectively benefiting a pupil aged 15 at the time of PISA 2012, the annual expenditure per pupil along his/her school career has been cumulated according to the modal educational level per age per country.

Figure 4.3. Expenditure in educational institutions per pupil and PISA (2015) results



Note: public and private expenditure per pupil at 2010 prices cumulated until age 15 is compared with mean PISA scores of 15-year old students. Only countries with complete data series are shown.

Source: Commission calculation on Eurostat and OECD data.

Policy lessons

Evidence shows that investment in education can lead to very different outcomes. Therefore the quality of investment in education is just as important as its volume. Three main lessons seem particularly relevant for policy development:

1) The costs of investing in education are largely offset by the individual and collective benefits generated by education, particularly but not only in the longer-term. Education can be one of the most profitable areas for Europe to invest in.

2) Investments in education do not result automatically in higher economic growth and other economic benefits. Making the economic case for education means striving for higher efficiency in spending and for a strong policy focus on the key factors that determine effective outcomes, such as good quality teachers or school accountability and autonomy.

3) Knowledge about what works best in education — and what is efficient — is still limited. This is partly due to the lack of data, and to the long-time lags that are typical of education. An improved evidence base and mutual learning can support policy-making and help design policies that make the provision of education more efficient without jeopardising the goals of effectiveness and equity.

4.2. Combining autonomy and quality assurance

Quality assurance involves the systematic review of educational provision to maintain and improve its quality, equity and efficiency. While quality assurance mechanisms (tools, processes and actors) vary across countries, their common objective is to improve teaching and learning — with the ultimate goal being to support the best outcomes for learners. School systems and schools are all focused on this objective.

Quality assurance systems encompass mechanisms that are both external and internal to schools. External mechanisms may include national or regional school evaluations and/or large-scale student assessments. Internal mechanisms may include school self-evaluation, staff appraisal and classroom-based student assessments. These mechanisms have different but complementary purposes. Ideally, they are part of a coherent, integrated system, with the different mechanisms supporting and reinforcing each other. This kind of productive synergy can ensure a clear focus on school development.

Policy context

School education systems are complex and vary greatly across Europe. The same is true of the quality assurance mechanisms that are embedded in and steer these school education systems[164]. Many countries include external and internal evaluations, which can complement and reinforce each other. Systems that support the synergy of external and internal quality assurance have more built-in resilience to cope with the complex process of change.

While each quality assurance system is different, countries share several common policy challenges and opportunities. These include:

- setting goals and measuring progress for education systems and student learning;
- designing quality assurance for education systems that are increasingly decentralised and multi-levelled;
- supporting and encouraging dialogue and a culture of trust among education stakeholders;
- ensuring transparency of quality assurance data while also avoiding the pressure resulting from 'high-stakes' approaches;
- prioritising human and financial resources.

Many countries are engaged in continuing or recently implemented reforms. Such reforms include:

- a general introduction of quality assurance processes;
- the introduction of new measures;
- the adoption of national frameworks;
- the formal incorporation of PISA results in quality assurance systems.

[164] European Commission (2015), *Comparative study on quality assurance in EU school education systems: Policies, procedures and practices. Final report*, Directorate-General for Education and Culture.

Autonomy, accountability and improvement

Evidence from various OECD PISA surveys shows that school autonomy leads to better basic skill achievement when coupled with accountability. Granting schools more autonomy over the curriculum may give them more opportunities to adapt to their students' needs and knowledge. However, the benefits of school autonomy may depend on how prepared schools are to use their responsibility effectively and how accountable they are for their students' outcomes to parents, local communities and education authorities[165].

Both accountability and improvement in teaching methods are important for ensuring the quality of processes as well as of outcomes. Systems that include a focus on accountability typically have some incentives to encourage teachers to pay attention to central performance standards and focus on the need to help *all* students succeed. At the same time, a focus on improvement ensures that data are used to identify needs and adjust school strategies.

Several countries in Europe include 'high-stakes' approaches within their overall quality assurance framework. These may include:

- denying accreditation to schools that do not meet quality assurance standards;
- financial penalties for schools;
- impacts on teachers' careers or salaries.

Many countries publish the results of student assessments and school evaluations, which teachers may perceive as adding to the stakes. Relying on a limited number of high-visibility evaluations and assessments, and government- or media-generated 'league tables', may also increase stakes.

There are concerns that high-stakes approaches may inhibit development and innovation and demotivate staff. Countries have therefore taken a variety of approaches to moderate the impact of high stakes and to place greater emphasis on improvement. For example, a number of countries highlight the importance of moving away from quality assurance as a 'control' to more open and 'trust-based' approaches. Publishing a range of data on school and teacher performance may also help to lower stakes associated with a single, high-visibility assessment or school evaluation.

The balance of accountability and improvement is also relevant to internal quality assurance. At the school level, there is some evidence that strong teacher-to-teacher trust[166], a collective focus on improving instruction and learning, and teacher experience are associated with higher levels of student attainment[167]. In turn, teachers in more successful schools have stronger levels of trust, which indicates strong levels of internal control and accountability[168]. Internal quality assurance mechanisms are most effective when they support the teachers' collective work and are focused on improving teaching[169].

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[165] OECD (2016), *PISA 2015 Results. Policies and practices for successful schools, Volume II*, Paris, OECD Publishing; Hanushek, E.A., Link, S. and Woessmann, L. (2013), Does school autonomy make sense everywhere? Panel estimates from PISA, *Journal of Development Economics*, Vol. 104, pp. 212-232.

[166] This entails being open to discussing his/her own work with other teachers in the school.

[167] Elmore, R. (2001), Holding schools accountable: Is it working?, *Phi Delta Kappan*, Vol. 83, No 1, pp. 67 – 70, 72.

[168] O'Day, J. (2002), Complexity, Accountability, and School Improvement, *Harvard Educational Review*, Vol. 72, No 3, pp. 293-329.

[169] Seashore-Louis, K., Leithwood, K., Wahlstrom, K.L., & Anderson, S.E. (2010), *Investigating the Links to Improved Student Learning: Final report of Research Findings to the Wallace Foundation*, University of Minnesota.

Another area where it is important to balance accountability and improvement is teacher appraisal, which may be conducted externally (inspectors or local administrators) and/or internally (school management or peers). Results may be used for high-stakes decisions related to performance awards and/or career advancement, or on professional development needs to support improvement. Here, it is important to clearly distinguish between these two types of appraisal, whether external or internal, as teachers are unlikely to be as open about areas where they feel they need to improve when this may have career consequences[170].

No single internal or external quality assurance mechanism can provide all the information needed for school accountability and development. Taken together, the different mechanisms can provide important and complementary insights on school, teacher and student performance and support evidence-based decision-making.

The following section is based on the interim results of the ET 2020 Working Group on Schools (2016-18).

Coherence of internal and external mechanisms

External mechanisms provide important data for policy-level decisions and resource allocation, while internal evaluations provide more detailed and timely data important for school-level development and for supporting teaching and learning. External and internal institutions and actors may work together to define strategies and alternatives for school improvement.

Policy-makers and practitioners will need to gather data appropriate for their level of decision-making (e.g. aggregate or macro-level data for policy-level decisions, and more detailed, micro-level data for school-level decisions). Systems may also achieve greater synergies across the different mechanisms when their data help to complement and reinforce their respective areas of concern (e.g. in links between inspection and school self-evaluations).

Professional learning communities

There is a consistent call for professional learning and attention to the development of human resources as part of quality assurance processes. Professional learning communities provide an opportunity for colleagues to define, interpret and reflect on quality assurance data, and to adjust strategies and/or practices to better meet identified needs. These communities are most effective (i) when focused on student learning (rather than teaching); (ii) when members have established a shared understanding of data; and (iii) when members hold themselves accountable for improvements. It is equally important to reflect on the roles, attitudes and perspectives of the people evaluating schools, the way they are selected and evaluated themselves, and the way they interact with schools.

Trust and shared accountability

Increasingly, education systems distribute governance responsibilities across national, local and school levels. There is a more equal sharing of accountability for learner outcomes and engagement in and support of school development. Shifts to multi-level governance may also require shifts in system cultures and individual mind-sets. This may be strengthened through the mutual commitment of internal and external actors to evaluation as a means to improve processes and outcomes. Trust in the quality of the evaluation instruments and the fairness and integrity of the system support are also vital.

[170] OECD (2013), *Teachers for the 21st Century: Using Evaluation to Improve Teaching*, Paris, OECD Publishing.

Research suggests that a number of advantages for governance systems which support the development of trust among key actors and this trust can reduce transaction costs and the likelihood of unexpected interactions or opportunistic behaviour[171]. Trust increases the likelihood that actors will invest their resources in cooperation and in developing and maintaining relationships. Trust among key actors can also support the search for innovative solutions and exchange of ideas.

Supporting innovation in schools

Risk is inherent to the process of innovation. Systems supporting the synergy of external and internal quality assurance will have more in-built resilience for the complex process of change. This includes:

- shared attention to quality and outcomes;
- openness to new ideas;
- open channels of communication among internal and external actors;
- capacity to respond quickly to identified needs.

Monitoring and evaluation are an integral part of the innovation process. Attention to data can allow innovators to take a more careful approach. Educational innovators may track the impact of new approaches on teaching and learning and make quick adjustments when necessary. This includes being alert to unintended consequences.

It is important to assess the impact of innovations, to make necessary adjustments, and to start the process again. This approach ensures that while innovations entail risk, students will not be left to falter. Moreover, monitoring is ongoing rather than being left to an annual, or even triannual school self-evaluation. Schools and teachers implementing innovative methods also need to gather detailed data on a regular basis to monitor the impact of new methods and make adjustments[172].

Communication among stakeholders

Education actors and stakeholders typically come from different professional backgrounds and contexts. They frequently use different vocabularies to discuss quality assurance. But quality assurance is effective when a shared language is common to all stakeholders. For example, stakeholders may also require explanations regarding what the quality assurance data can and cannot tell them about system and school performance, including the limits of existing measurement technologies. Dialogues between schools and parents and pupils are also an important part of the overall quality assurance process.

School networks to support development

Networked professional learning communities, which bring together practitioners within a school or link or cluster institutions, can incentivise pedagogical and school development. They enable educational innovations and school developments to evolve more quickly as more stakeholders are involved in testing and improving approaches. Research suggests that educational innovation networks are important both for developing innovation as well as transferring knowledge and practice across a wide range of stakeholders[173]. Collaborative

[171] Cerna, L. (2014), Trust: What it is and why it Matters for Governance and Education, *OECD Education Working Papers*, No 108.
[172] Looney, J. (2009), Assessment and Innovation in Education, *OECD Education Working Papers*, No 24.
[173] Hargreaves, D.H. (2003), *Education epidemic: Transforming secondary schools through innovation networks*, Demos.

networks may create a pool of ideas and resources, and support dynamic exchange among participants.

Networks require careful management. Involving multiple stakeholders in interactions creates the potential for more conflicts of interest. Participants in networks which have strong cultures of trust are more likely to invest time and knowledge. There are several key conditions for effective networks, including:

• consistency of values and focus;
• evidence-based knowledge creation, 'subject to robust quality assurance procedures';
• rewards related to learning (e.g. support for professional development);
• dispersed leadership and empowerment;
• adequate resources[174].

Generating, interpreting and using data

School self-evaluation is a relatively new quality assurance mechanism in many countries. School and local stakeholders may need to develop a more in-depth knowledge of quality assurance processes and determine how to ensure that school self-evaluation is used genuinely for internal accountability and school development, and not as just another report to be produced.

This includes investing in capacity building on how to (i) generate data (including how to identify the most appropriate indicators to track school progress); (ii) develop a shared understanding on how to interpret data (including from external quality assurance); and (iii) then adapt strategies in areas identified for improvement. This technical knowledge will help to ensure higher quality reviews and strengthen the integrity of the overall quality assurance systems.

Developing a balanced view of school development

Multiple types of data gathered over time develop a well-rounded picture of system and school development. Qualitative data can give added meaning to quantitative data and support broader stakeholder understanding.

Multiple measures of school and student performance help to ease the high stakes associated with high-visibility school evaluation and student assessments. They provide a more accurate picture of performance.

[174] Hopkins, D. (2003), Networks of Innovation, in *Towards New Models for Managing Schools and Systems*, Paris, OECD Publishing.

Annex — Overview of EU actions proposed as a follow-up to the Communication and provisional timetable

Proposed action	Provisional timetable
Developing better and more inclusive schools	
• Increase cooperation between schools by making **school partnerships and pupil mobility under Erasmus**+ more accessible and to enrich digital and intercultural learning by promoting participation in **eTwinning**.	4th quarter 2017
• Develop a **self-assessment tool on digital capacity** so that schools in the EU can, on a voluntary basis, self-evaluate where they stand in relation to common criteria and are supported in developing and improving their effective use of technologies for digital age learning. Using the tool, schools can chose to report on their progress in the **availability, use, competences and attitudes to Information and Communication Technologies, building a database** across all participating Member States.	4th quarter 2017
• Support improvements in school level education in **science, technologies, engineering and maths** (STEM) by promoting best practice in developing links and cooperation of higher education, research, businesses with schools at EU level and effectively addressing gender gaps and stereotypes in STEM, using Erasmus+.	4th quarter 2017
• Promote and support policy experimentation on developing **multilingual pedagogies** and **teaching in diverse classrooms** as part of the 2018 Erasmus+ work programme.	4th quarter 2017
• Follow-up the observations of the United Nations' Committee on the Rights of Persons with Disabilities by supporting cooperation between the **European Agency for Special Needs and Inclusive Education** and Member States, at their request, in implementing the education provisions of the UN Convention on the Rights of People with Disabilities.	4th quarter 2017
• Further support Member States in providing sufficient **high quality early childhood education and care** and step up efforts to help them learn from each other and identify what works best.	2nd quarter 2018
Supporting teachers and school leaders for excellent teaching and learning	
• Offer **policy guidance on the careers and professional development of teachers and school leaders** by reinforcing peer learning under Education and Training 2020 through a series of expert seminars and linking it to the European sectoral social dialogue in education.	2nd quarter 2018

• **Simplify access and promote opportunities for future teachers to gain practical teaching experience abroad** with the support of Erasmus+.	2nd[nd] quarter 2018
• Develop **online communities and resources** for school professionals, including new eTwinning opportunities for student teachers, online networks for early career teachers and their mentors, online courses (including MOOCs), exchange of best practice among providers of Initial Teacher Education and a Digital Competence Framework to support teachers' self-assessment and development.	1st quarter 2018
• Further develop synergies **with the OECD to produce joint comparative data on school staff**, including through more efficient, joint data collection by Eurydice and the OECD on teachers and school leaders.	3rd quarter 2018
Governance of school education systems: becoming more effective, equitable and efficient	
• Building on existing cooperation, including on skills strategies and school resources, set up a **demand driven** technical support arrangement **in cooperation with the OECD** to help Member States who voluntarily seek assistance, to design and implement major school education reforms. The Commission services, including the Structural Reform Support Service, and EU funding instruments (such as the European Structural and Investment Funds and Erasmus+) could provide support.	4th quarter 2017
• Propose **a joint report on the effectiveness and efficiency of expenditure in school education**, involving appropriate Council committees and Commission services. This will build on ongoing work with the OECD and may lead to the development of policy guidance on investment in school education in partnership with interested EU Member States and stakeholders.	2nd quarter 2018
• Together with EU Member States and stakeholders, develop targeted policy guidance on **quality assurance** through peer counselling and peer learning.	2nd quarter 2018