



Starting Strong IV

Early Childhood Education and Care

Data Country Note

FINLAND

This Data Spotlight note on Early Childhood Education and Care (ECEC) provides a summary of ECEC policy inputs, outputs and outcomes in Finland. It uses data available within the OECD Secretariat — Education at a Glance, the Programme for International Student Assessment (PISA) and the OECD Family Database — to make comparisons between Finland’s ECEC system and the systems in other OECD countries (see Box 1 for definition and comparability issues). This note complements the 2015 OECD publication, *Starting Strong IV: Monitoring Quality in Early Childhood Education and Care*.

Key characteristics of ECEC in Finland:

In Finland, ECEC caters for children aged 0 to 6 years old; it includes children in pre-primary education. Pre-primary education¹ (ISCED 02) refers to the year before compulsory school, i.e. for children aged 6.

Resources that are put in the ECEC system

- The share of GDP devoted to ECEC (ISCED 0) is higher than the OECD average (1.3% and 0.8% of GDP respectively) and most spending on ECEC comes from public sources.
- Annual expenditure per child in ECEC (ISCED 0) is above the OECD average (average USD 12 092 and USD 8 070 respectively).
- The number of children per staff in pre-primary education (ISCED 02) is comparatively low: there are about 10 children per teacher in Finland, which is 4 children fewer per teacher than the OECD average of 14 children per teacher, excluding the non-teaching staff, such as auxiliary staff.

Access and participation

- Finland provides extensive access to ECEC but participation of 0-2 year-olds in formal care² (Kindergartens and Family day care in Finland) is lower than the OECD average (28% and 33% respectively).
- Participation of 3-5 year-olds in pre-primary education (ISCED 02) is lower than in many OECD countries (e.g. for 3-year-olds rates were 68% in Finland compared with 71% across the OECD).
- Almost all children aged 6 participate in pre-primary education in Finland. Compulsory school starts at age 7.

Teacher’s academic qualification and working conditions

- All teachers of pre-primary education who enter the profession have a Bachelor’s degree in Finland, as in most other OECD countries.
- Salaries of pre-primary (ISCED 02) teachers are below the OECD average, in absolute and relative terms. A pre-primary education teacher in Finland can expect to earn after 15 years of experience an annual salary of around USD 29 771, this is 10 000 USD less than the average annual salary of their colleagues after 15 years of experience across the OECD (around USD 39 245).

Monitoring Quality

- Monitoring of ECEC settings is a common, yet local practice in Finland. Finland is one of few countries where children’s views are taken into account when monitoring quality.
- While Finland implements a wide range of practices to monitor quality in ECEC, several challenges remain. Firstly, there is no shared perspective for quality in ECEC. Setting out clear quality goals in a framework can overcome this. Secondly, Finland has no national monitoring system. Standardising certain monitoring tools can create greater coherence in Finland’s monitoring system. And thirdly, there is limited training on monitoring available which indicates a need for more in-service or on-the-job training (see *Monitoring Quality in Early Childhood Education and Care Country Note: Finland*).

Student performance at age 15 by participation in pre-primary education

- The percentage of 15-year-olds in Finland who reported not attending pre-primary education in PISA 2012 was considerably low (2.4% compared with 7.1% across the OECD). Even after accounting for socio-economic background, the relationship between attending pre-primary education and mathematics performance of 15-year-olds is significant and close to the OECD average (34 and 31 score points respectively - equivalent to almost one year of formal schooling).

Introduction

Participation in ECEC can have a positive effect on children's early learning and development, as well as on subsequent outcomes, such as academic success, labour market performance and socio-economic mobility. The benefits of ECEC on child outcomes, however, depend on the quality of the provision. Settings and programmes that have a high level of quality are positively associated with children's cognitive, social and behavioural development, with disadvantaged children benefitting significantly from high-quality settings (OECD, 2011; Gambaro et al., 2014). Policy outcomes are associated with both policy inputs and policy outputs.

For simplicity purposes, this note uses the term early childhood education and care (ECEC) to refer to arrangements providing care and education for children under compulsory school age. This term differs from those used by other sources in this note, including the ISCED 2011 classification (see Box 1 for the ISCED 2011 methodological distinction between childcare and pre-primary education). Because of these differences in definitions, caution is needed when comparing data presented here.

The note is structured in three sections:

- **Policy inputs:** This section presents indicators of the resources that are put into a system, such as the level and type of sources that finance ECEC, and the regulations of staff-child ratios to achieve outputs or a result.
- **Policy outputs:** This section covers indicators that are the result of policy inputs put in place, such as enrolment rates by age. Trend data is presented to examine the changes in early childhood education in recent years.
- **Policy outcomes:** This section covers indicators on the outcomes of children that are associated with both policy inputs and policy outputs. For example, indicators on student performance at age 15 by participation in pre-primary education (drawn from PISA 2012).

Section 1. Policy inputs

Extensive access to ECEC services

The organisation of ECEC services varies greatly from country to country in terms of structure, but also regarding the age of children attending different types of settings or the intensity of child participation in different settings (see Box 1). In Finland, all services for 0-6 year-olds are called early childhood education and care. Integrated programmes are offered, which include education and childcare services. Children below the age of 3 are entitled to early childhood educational development programmes (ISCED 01), which include kindergartens and family day care. Children aged 3-6 are entitled to pre-primary education programmes (ISCED 02) provided in kindergartens, pre-primary schools or family day care (OECD, 2016a, Tables C2.4 and C2.5).

Participation in ECEC services may be supported by subsidised places for all children, or for certain age groups and/or target-group children, such as those from disadvantaged backgrounds. Finland is among the few OECD countries (alongside Germany, Norway and Sweden) where there is a legal entitlement³ to an ECEC place for all children aged 0-6 (starting age of compulsory school is 7 in Finland). The maximum hours that 0-6 year-olds can have access to is approximately 10 hours a day. In Finland, it is possible to attend ECEC services in the evening, on the weekend and during holidays when parents are working. ECEC services are free for low-income families in Finland (OECD, 2015a, Table 1.1).

**Box 1. Distinction between early childhood educational development and pre-primary education:
The revised ISCED 2011 classification**

There are many different ECEC systems and structures within OECD countries. Consequently, there is also a range of different approaches to identifying the boundary between early childhood education and childcare.

The International Standard Classification of Education (ISCED) defines internationally comparable levels of education. In ISCED 2011, level 0 covers early childhood education for all ages, including very young children. As the educational properties of ISCED 0 programmes can be difficult to assess directly, several criteria are used to come up with a technical definition. For a programme to be reported as ISCED level 0 it must have: adequate intentional educational properties; be delivered by qualified staff members; take place in an institutionalised setting; meet a minimum intensity/duration; and be targeted at children from age 0 until entry into ISCED level 1 (OECD, 2016).

Programmes classified at ISCED level 0 may be referred to in many ways nationally, for example: early childhood education and development, play school, reception, pre-primary, pre-school, Kindergarten, *Kita*, *Krippe* or *educación inicial*. For programmes provided in crèches, day-care centres, private homes, nurseries, *Tagespflege* or *guarderías*, it is important to ensure that they meet the ISCED level 0 classification criteria specified in ISCED 2011.

In ISCED 2011, programmes are sub-classified into two categories depending on age and the level of complexity of the educational content: early childhood educational development (ISCED 01) and pre-primary education (ISCED 02). ISCED 01 programmes are generally designed for children younger than 3 (OECD, 2016). This is a new category not covered by ISCED 1997. ISCED 02 is designed for children from age 3 years to the start of primary education. It corresponds exactly to level 0 in ISCED 1997.

The comparability of programmes at ISCED level 0 depends on each country's ability to report data according to the standard international definition. Early childhood programmes that are offered in some countries do not necessarily meet the criteria or definition of ISCED 01. This is the case of Belgium (except in the Flemish Community), the Czech Republic, France, Ireland, Italy, Japan, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, and Switzerland and the United States. On the other hand, the coverage of ISCED 02 (pre-primary education) is larger, with 32 countries reporting data on enrolment rates at ages 3 and 4. Because of these differences, caution is needed when comparing available data on ISCED 01 drawn from *Education at a Glance*.

The definition of ECEC in the OECD's *Starting Strong* series differs from the ISCED 2011 definition. The OECD definition states that "the term early childhood education and care (ECEC) includes all arrangements providing care and education for children under compulsory school age, regardless of setting, funding, opening hours or programme content" (OECD, 2001). This means that settings considered an integral part of countries' ECEC systems, but not covered by the ISCED classification, still fall under the terminology of ECEC.

Data reported in *Education at a Glance 2016*, and presented here as ISCED level 0, use the ISCED 2011 classification (Figures 1, 2, 3, 4 and 6). PISA 2012 uses the ISCED 1997 classification (Figure 7). The OECD Family Database definition of "formal" childcare among children aged 0-2 years includes centre-based services, organised day care, pre-school and professional child-minders. That is, it includes ISCED 01 and other registered ECEC services (Figure 5).

Sources: OECD (2016), *Education at a Glance 2016: OECD Indicators*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/eaq-2016-en>; OECD (2001), *Starting Strong I: Early Childhood Education and Care*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264192829-en>.

Funding of early childhood education and care services

In Finland, the Ministry of Education and Culture is in charge of the entire ECEC age group at the central level. Responsibilities for funding (and curriculum development) are shared between the national level and the local level. Other responsibilities are governed differently: national standards for settings are under the sole responsibility of the Ministry of Education and Culture, and monitoring of ECEC is under the responsibility of regions and communities (OECD, 2015a, Table 1.2). Since August 2015, demand for national and local evaluation of ECEC has been included in the new Act on ECEC. According to this Act, the Finnish Education Evaluation Centre (FINEEC) is responsible for evaluation in ECEC for national level.

Above-average expenditure on early childhood education and care as a percentage of GDP

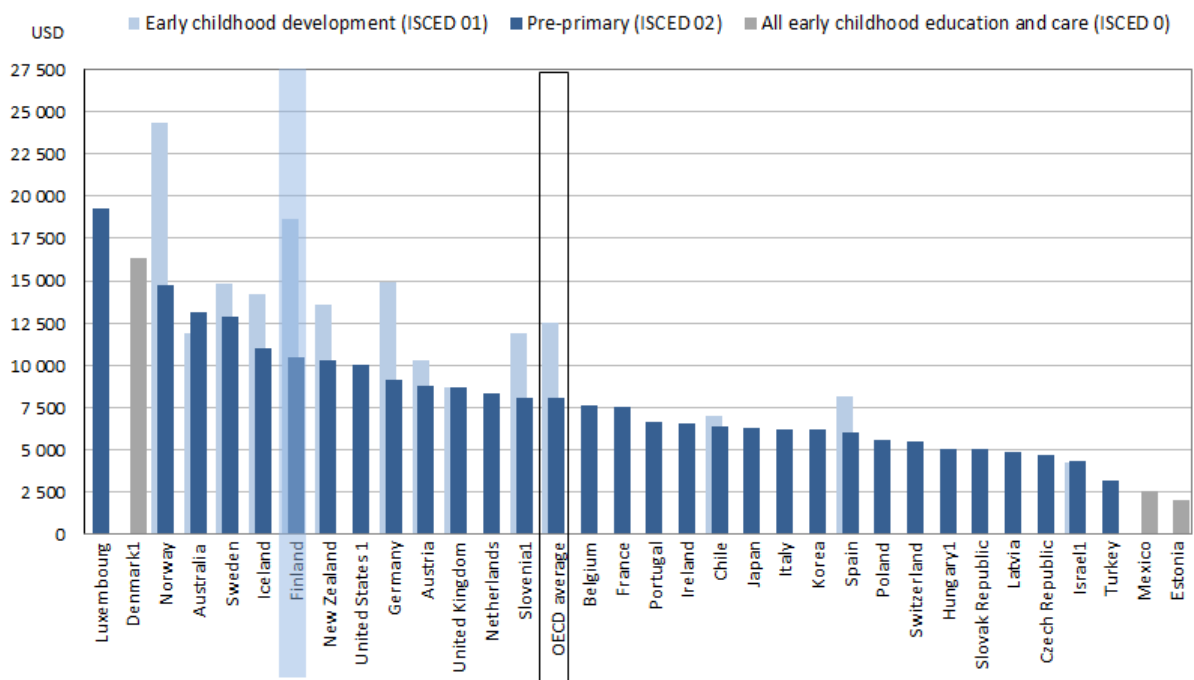
The financial investment in ECEC settings and equipment is a key requirement for the development of good and high quality learning environments, and indicates that political priority is being given to the care and education of young children. Sustainable public funding is essential to recruit competent and qualified staff, ensure the quality of educational programmes, and promote their development.

In Finland, public and private expenditure on ECEC institutions (ISCED 0) was equal to 1.3% of GDP in 2013, higher than the average of 0.8% of GDP in OECD countries. Similarly, Chile, Denmark, Iceland, Israel, Norway, Slovenia and Sweden spent 1.0% or more of their GDP on early childhood education and care (ISCED 0) (OECD, 2016a, Table C2.3). Of the 1.2% of GDP spent in Finland, 0.9% is spent on pre-primary education (ISCED 02) and 0.4% on early childhood educational development (ISCED 01) (OECD, 2016a, Table C2.3).

Expenditure per child in early childhood education and care is higher than the OECD average

Expenditure per child on pre-primary education (ISCED 02) in Finland (USD 10 477) was higher than the OECD average (USD 8 0704 per student) in 2013. In addition, expenditure per child in 2013 on early childhood educational development (ISCED 01) was higher than in all other OECD countries with available data, except for Norway: USD 18 668 per child in Finland against an OECD average of USD 12 501 per child (see Figure 1). The level of expenditure per child varies between countries, depending on services’ fees, the cost of education, the level of wealth of the country, and the coverage by private ECEC structures.⁴

Figure 1. Annual expenditure per student by educational institutions for all services (2013)



Notes: Countries are ranked in descending order of annual expenditure per student by educational institutions for pre-primary education.

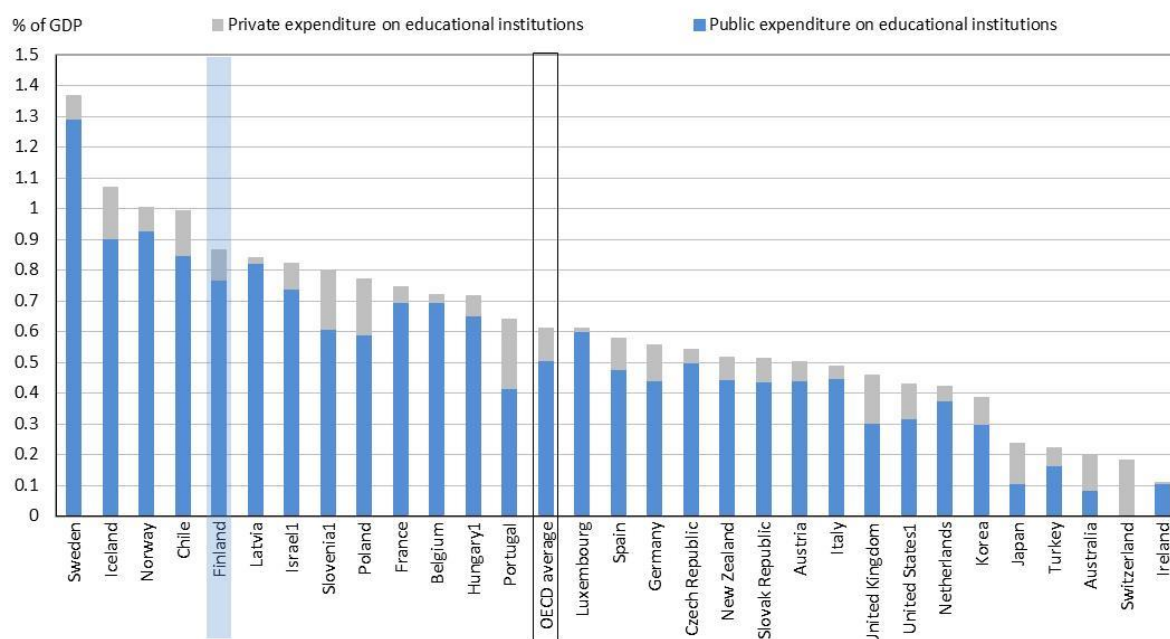
1. Includes some expenditure on child care.

Source: OECD (2016), *Education at a Glance 2016: OECD Indicators*, Table C2.3, <http://dx.doi.org/10.1787/888933398316>.

Private funding's share of ECEC is low

Early childhood education and care services (like all other levels of education) are also funded by private sources,⁵ mainly through fees paid by parents. Limited comparable data regarding the services for young children in childcare mean that the extent of total private funding in childcare cannot be analysed. In Finland, most services in pre-primary education (ISCED 02) are funded by public sources (state subsidies and taxes) (Figure 2).

Figure 2. Distribution of public and private expenditure on pre-primary educational institutions (2013)



Notes: Countries are ranked in descending order of public and private expenditure on educational institutions (2012).
1. Includes some expenditure on child care.

Source: OECD (2016), *Education at a Glance 2016: OECD Indicators*, <http://dx.doi.org/10.1787/888933398316>.

Quality of early childhood education and care services

Curriculum frameworks can play a pivotal role in ensuring the quality of ECEC services. Finland has an integrated curriculum framework that covers children 0-5 years-old and all forms of ECEC (ECEC centres, family day care, open ECEC services) (National Curriculum guidelines on ECEC). This integrated approach may foster the quality of ECEC services across age groups. Separate curriculum exists for pre-primary education (for 6-year-old children) and primary education. The responsibilities for standard setting and curriculum development are divided between the central and local level (OECD, 2015a, Table 1.3).

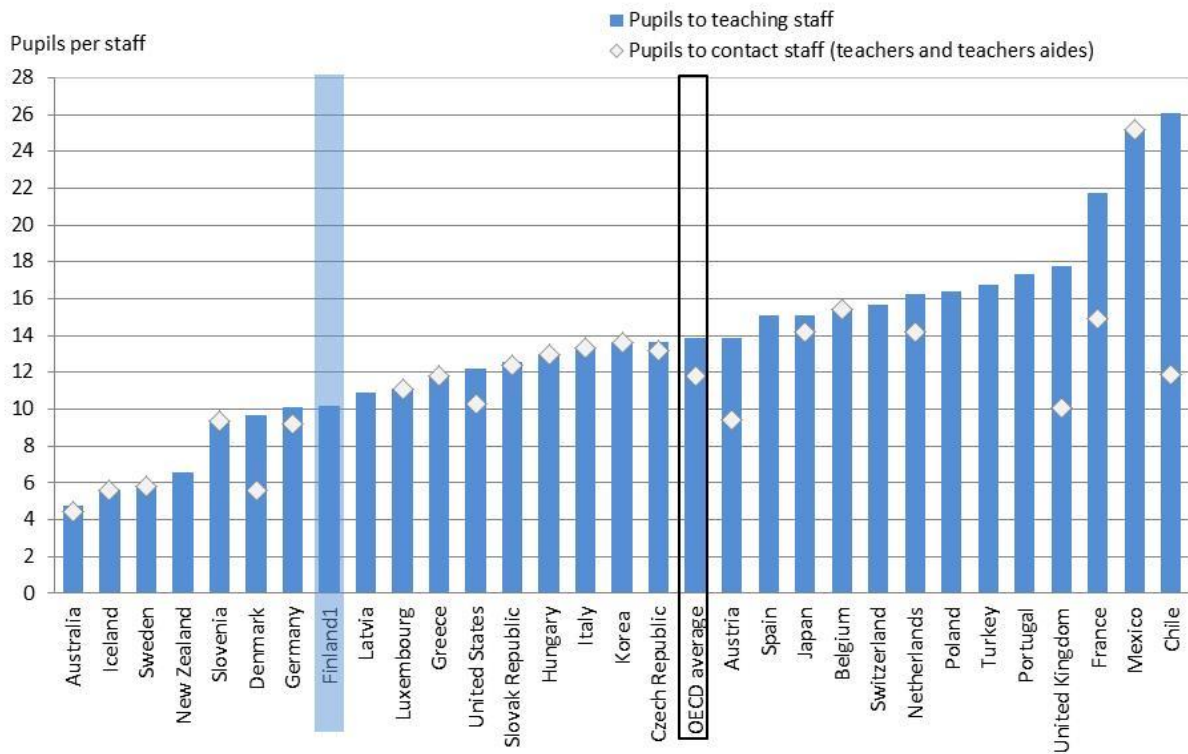
The number of children per staff is comparatively low in ECEC services

The child-to-staff ratio is an important indicator of the resources invested in early education and care, and also of the quality of these services. A low child-to-staff ratio impacts staff working conditions, alongside other factors such as reasonable hours or workload and salary levels. These affect job satisfaction and staff retention, and through this, contribute to the quality of early childhood education and care services.

In some countries, regulations are in place regarding the maximum number of children per adult in childcare services. Legislation in Finland, though decentralised, sets out strong and clear requirements for staff qualification and staff-child ratios (1:3 under 3 years, 1:8 3 years and over,⁶ 1:13 pre-primary education 4hr/day). This applies to both public and private service providers (OECD, 2012, p. 207).

In pre-primary education (ISCED 02) there are about 10 children per teacher in Finland,⁷ which is 4 children less per teaching staff than the OECD average of 14 children per teacher, excluding the non-teaching staff, such as auxiliary staff (see Figure 3) (OECD, 2016a, Table C2.2).

Figure 3. Ratio of children-to-teaching staff in pre-primary education, 2014



Notes: Countries are ranked in descending order of the pupil-to-teaching-staff in pre-primary education. Data on “pupils for contact staff” is missing for Finland, Latvia, New Zealand, Spain, Switzerland, Poland, Portugal and Turkey. The ratio of children-to-teaching staff for Finland is based on the average figure of children aged 3 to 6 years old. 1. Year of reference is 2013 instead of 2014.

Source: OECD (2016), *Education at a Glance 2016: OECD Indicators*, Table C2.2, <http://dx.doi.org/10.1787/888933398305>.

Pre-primary teachers have a high level of educational degree

In OECD countries, the duration of initial teacher training varies more in pre-primary education (ISCED 02) than at any other level of education: from two years for basic certification in Korea and Japan to five years in Austria, Chile, France, Iceland and Italy. In Finland, the duration of initial teacher training in pre-primary education (ECEC in Finland) is three years. In addition, there are selective criteria for entry into initial teacher education (OECD, 2014, Table D6.1a).

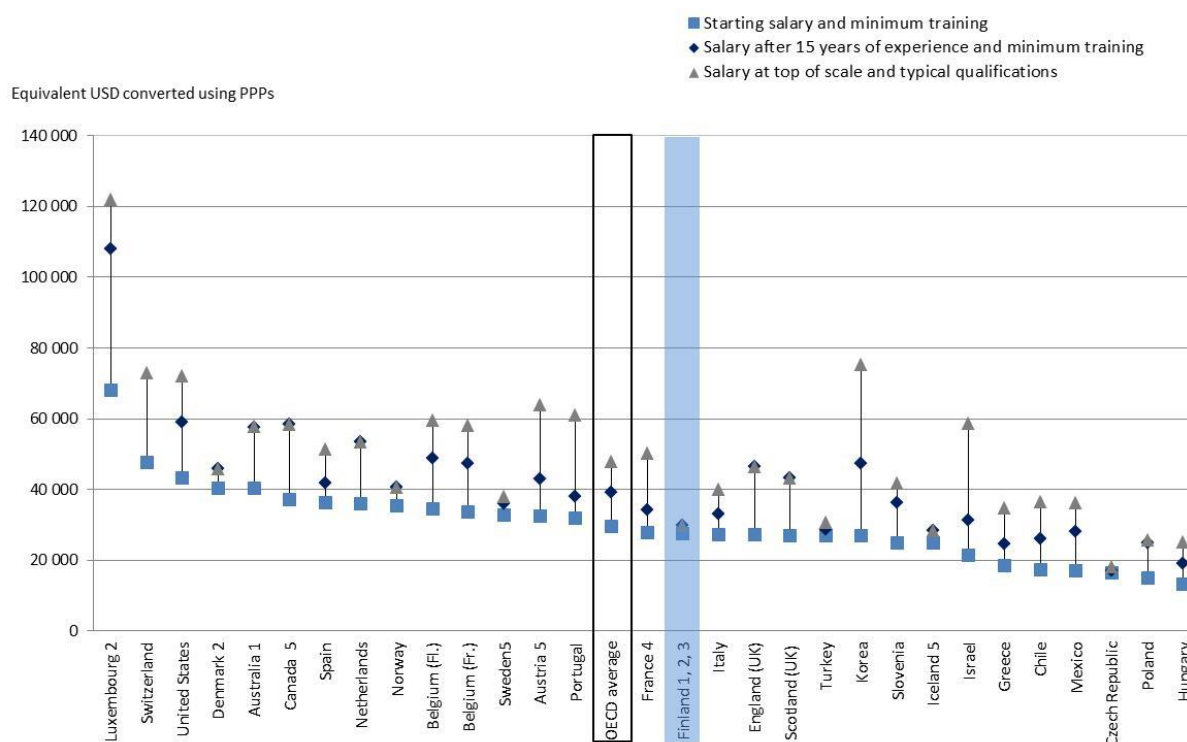
Salaries of pre-primary teachers are below the OECD average, both in absolute and relative terms

While the level of starting salary for pre-primary teachers in Finland in 2014 was close to the OECD average (USD 27 566 against USD 29 494 on average), salary levels for more experienced ECEC teachers were below the OECD average. In Finland, ECEC teachers achieve the maximum salary level after 10 years of experience at the latest (USD 29 771). In contrast, pre-primary teachers (ISCED 02) in

most OECD countries have further salary increases after 10 and 15 years of experience: USD 36 491 and USD 39 245 , respectively. The top of the salary scale is USD 47 826 on average in most OECD countries (see Figure 4). After including bonuses and allowances paid to teachers, the average salary of pre-primary teachers (ISCED 02) in Finland is USD 32 392,⁸ which is around 13% lower than the OECD average of USD 37 274 (OECD, 2016a, Table D3.4).

Figure 4. Pre-primary teachers' salaries at different points in their careers (2014)

Annual statutory teachers' salaries, based on typical qualifications, in public institutions, in equivalent USD converted using PPPs



Notes: The definition of teachers' typical qualification is based on a broad concept, including the typical ISCED level of attainment and other criteria. PPP refers to the parity purchasing power.

Countries are ranked in descending order of starting salaries for pre-primary teachers with minimum training.

1. Statutory salaries do not include the part of social security contributions and pension-scheme contributions paid by the employees.
2. Statutory salaries include the part of social security contributions and pension-scheme contributions paid by the employers.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Includes average bonuses for overtime hours for lower and upper secondary teachers.
5. Actual base salaries for 2013.

Source: OECD (2016), *Education at a Glance 2016: OECD Indicators*, Table D 3.1a, <http://dx.doi.org/10.1787/888933399015>.

To compare the salary levels and the labour market situation between countries, teacher pay is compared to earnings for similarly-educated workers based on teachers' attainment level (25-64 year-olds who work full time, full year). The salary for teachers in pre-primary in Finland is 65% of the earnings of workers with tertiary education, which again is somewhat lower than the OECD average of 74 % (OECD, 2016a, Table D3.2).

Monitoring of early childhood education and care settings is a common practice

All 24 countries and jurisdictions surveyed for *Starting Strong IV: Monitoring Quality in Early Childhood Education and Care* monitor service and staff quality, but only 21 monitor child development and outcomes. All of these different aspects, including staff and service quality, curriculum implementation and child development and outcomes, are monitored in all ECEC settings in Finland. Children's development is monitored in all ECEC settings for all age levels on a continuous basis. The responsibility for monitoring is at the local level, and municipalities or local authorities decide on the monitoring practices. Monitoring is a common practice, but there is wide variation between municipalities as monitoring practices are not determined or regulated at the national level (OECD, 2015a). Monitoring practices in Finland are, however, changing. According to the new Act on ECEC, the Finnish Education Evaluation Centre (FINEEC) is responsible for evaluation in ECEC for national level. This is discussed in further detail in Finland's country note on Monitoring Quality in ECEC (OECD, 2016b).

Section 2. Policy outputs

Participation in early childhood education and care services

Low participation of 0-2 year-olds in formal childcare

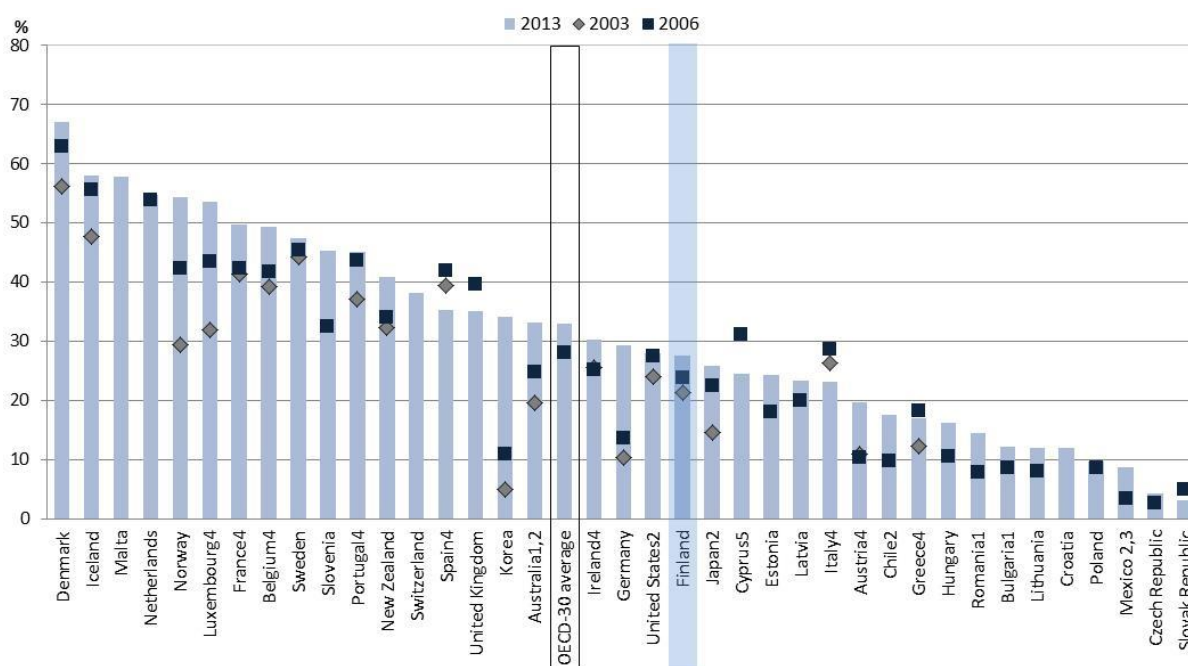
In Finland, participation rates of children under the age of 3 in formal childcare arrangements⁹ (ISCED 0 and other registered ECEC services) are somewhat lower than in many OECD countries. On average across OECD countries, one-third (33%) of 0-2 year-olds attends some form of formal ECEC, while in Finland more than one-quarter do (28%). Denmark, Iceland, Luxembourg, Norway and the Netherlands stand out with participation rates above 50% (see Figure 5). Participation rates of under-3s increased in Finland by around 6 percentage points between 2003 and 2013, but to a lesser extent than in many other OECD countries.

While participation rates by age provide a proxy for how long children are enrolled in ECEC over their childhood (e.g. in years), they do not provide any information about the intensity of participation in childcare services, i.e. whether children participate only for a few hours per day or full-time. The intensity of participation varies considerably across countries. In Finland, a child attended ECEC for an average of 33 hours per week in 2013, which is above the 30 hours corresponding to full-time care. The full-time equivalent participation rate (adjusted for the intensity of use of childcare services) for 0-2 year-olds in formal childcare is the participation rate if all 0-2 year-olds that use formal childcare do so on a full-time basis.¹⁰ In Finland, the full-time equivalent participation rate is 30%, this is slightly higher than the participation rate, which reflects the comparatively high number of hours a Finnish child attends ECEC (OECD, 2015b, chart PF3.2.B).

Low participation of young children in informal care

The below-average participation rate in formal care does not necessarily imply a larger participation in informal care¹¹ (generally unregulated care arranged by the child's parent either in the child's home or elsewhere, provided by relatives, friends, neighbours, babysitters or nannies). In 2013, the share of Finnish children using informal childcare arrangements was notably low:¹² only 2% of 0-2 year-olds and 1% of 3-5 year-olds used informal ECEC (OECD, 2015b, chart PF3.3.A). Only Sweden and Denmark had similarly low shares of young children in informal care, reflecting the comprehensiveness of Nordic formal ECEC systems. However, Finnish children that are being taken care of by an informal care provider spent a relatively high number of hours per week in care: 0-2 year-olds spent around 22 hours per week and 3-5 year-olds 29 hours (OECD, 2015b, chart PF3.3.B).

Figure 5. Participation rate in formal childcare (ISCED 0 and other registered ECEC services) among 0-2 year-olds (2003, 2006, 2013)



Notes: Data reflect children in day-care centres and pre-school (both public and private) and those who are cared for by licensed childminders. It excludes informal services provided by relatives, friends or neighbours regardless of whether or not the service is paid for.

Countries are ranked in descending order of the percentage of children under 3-years of age in formal childcare.

1. 2006 data for Australia refer to 2005, and for Bulgaria and Romania to 2007

2. 2013 data for Japan refer to 2010, and for Australia, Chile, Mexico, and the United States to 2011

3. Data do not include services provided by the private sector

4. 2003 data for Austria, Belgium, Luxembourg, France, Greece, Ireland, Italy, Spain refers to 2004, and for Australia and the United States to 2002

5. Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Commission: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

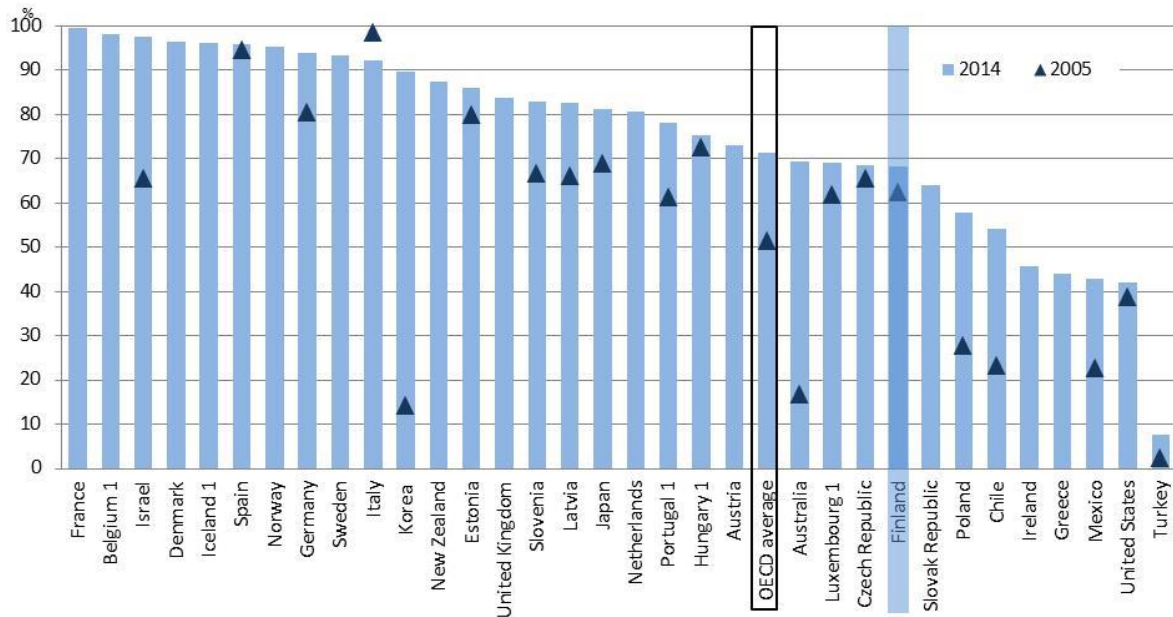
Source: OECD (2015b), *OECD Family Database*, Table PF3.2.A, www.oecd.org/social/family/database.

ECEC participation rates of 3 and 4 year-olds are lower than in many OECD countries

Early childhood education and care (ISCED 0)¹³ is the first stage of organised instruction for many children and can, as such, play an important role in their development. While enrolment in these programmes is usually not mandatory and children can enter them at different ages, the majority of 3-4 year-olds in OECD countries are enrolled in early childhood education and care (mostly pre-primary education). On average across OECD countries, 71% of 3-year-olds and 86% of 4-year-olds attended early childhood education and care (ISCED 0) in 2014, with wide variation across countries.

In Finland, participation rates in 2014 were lower than the OECD average, with 68% of 3-year-olds (see Figure 6) and 74% of 4-year-olds participating in pre-primary education (ISCED 02/ ECEC in Finland). In 10 OECD countries (Belgium, Denmark, France, Germany, Israel, Italy, Korea, Norway, Spain and Sweden), at least 90% of 3 and 4-year-olds were enrolled in early childhood education (ISCED 0) (OECD, 2016a, Table C2.1).

Figure 6. Enrolment rates at age 3 in early childhood education and care (2005 and 2014)



Notes: Countries are ranked in descending order of the enrolment rates of 3-year-olds in 2013.

2005 data is missing for Austria, Belgium, Denmark, France, Greece, Iceland, Ireland, Latvia, Netherlands, New Zealand, Norway, Slovak Republic, Sweden and United Kingdom.

1. Year of reference 2013 instead of 2014.

Source: OECD (2016), *Education at a Glance 2016: OECD Indicators*, Table C2.1, <http://dx.doi.org/10.1787/888933398347>.

Most OECD countries achieve full enrolment in ECEC for 5-year-olds. In Finland, 79% of 5-year-olds participate in pre-primary education (ISCED 02 /ECEC in Finland), and from the age of 6 (pre-primary education in Finland) it is close to universal (98%). This is similar to Sweden, where almost all children at the age of 6 participate in pre-primary education and compulsory school starting age is 7. In Sweden, however, participation rates in pre-primary education are significantly higher for younger children (3-5 year-olds) than they are in Finland (OECD, 2016a, Table C2.1).

Early childhood education and care (ISCED 0), as well as primary and secondary education, is mostly organised in public institutions in OECD countries and, on average, 68% of pre-primary education pupils (ISCED 02/ 3-5 year-olds) were enrolled in public institutions in 2014. Only in early childhood development programmes (ISCED 01/0-2 year-olds) were there more children enrolled in private institutions (58%) than in public institutions (42%) in 2014. In Finland, the majority of pre-primary students (ISCED 02) are enrolled in public institutions (91% in 2014). Similarly, the great majority (88%) of children in early childhood educational developmental programmes (ISCED01) are enrolled in a public setting (OECD, 2016a, Table C2.2).

Section 3. Policy outcomes

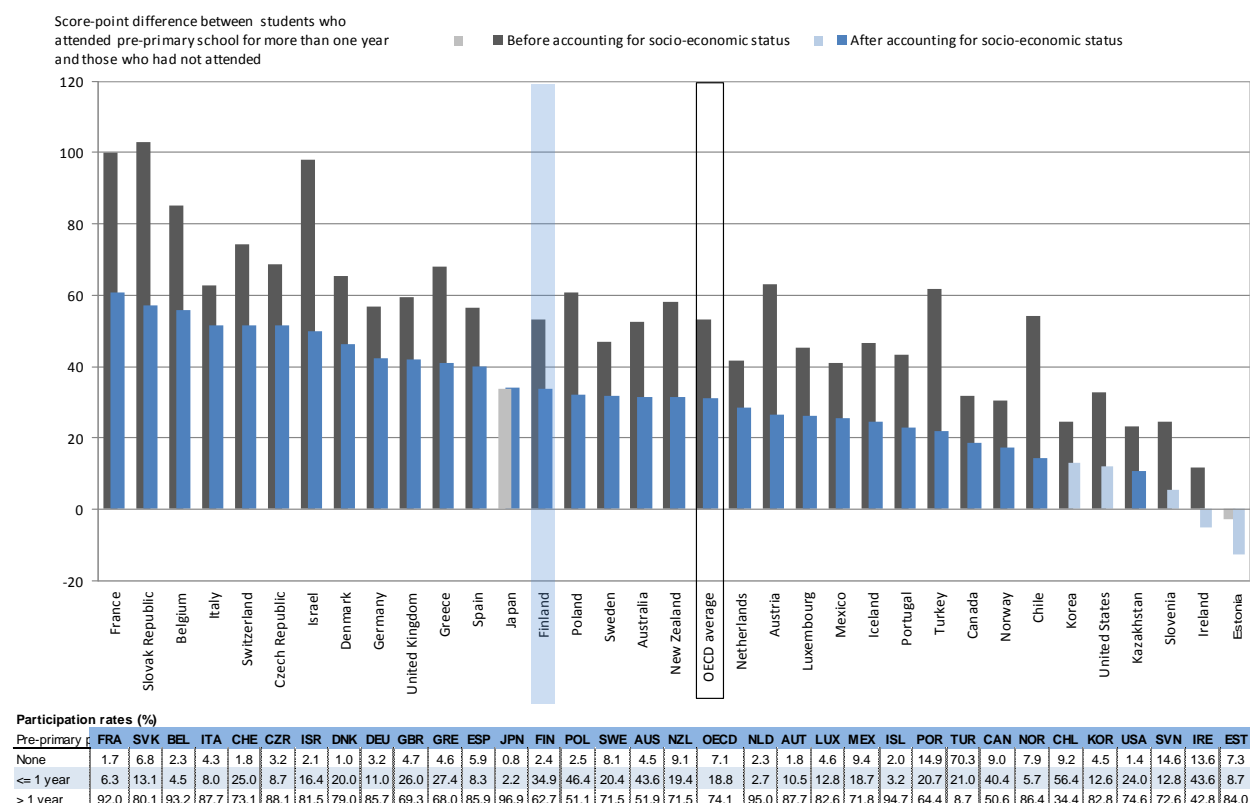
The association between pre-primary education and 15-year-olds' mathematics performance is close to the OECD average

Research in neurosciences has shown that the brain sensitivity of highly important developmental areas, such as emotional control, social skills, language and numeracy, peak in the first three years of a child's life (Gambaro et al., 2014). These findings indicate that the first years of children's life are crucial for their later development and learning. High quality ECEC can stimulate the development of these skills, which highlights the importance of early development programmes and their level of quality (OECD, 2006, 2011).

A strong start in education through ECEC is associated with higher performance in adolescence. PISA results show that 15-year-olds who attended a pre-primary education programme (ISCED 02) tended to perform better than students who did not attend pre-primary education. The percentage of 15-year-olds in Finland who reported not attending pre-primary education in PISA 2012 was considerably low (2.4% compared with 7.1% across the OECD, see Figure 7). Notably, children from a lower socio-economic background and in socio-economically disadvantaged schools were less likely to have participated in pre-primary education. Nevertheless, the benefits associated with pre-primary education remain statistically significant even after accounting for students' socio-economic background. In Finland, the difference in PISA mathematics scores between 15-year-old students who had attended more than one year of pre-primary education and those who had not was 34 score points after accounting for socio-economic background – the equivalent of almost one year of formal schooling¹⁴ (close to the OECD average difference of 31 score points) (see Figure 7).

PISA data also show that the correlation between enrolment in pre-primary education (ISCED 02)¹⁵ and performance at the age of 15 is generally stronger in education systems where participation in pre-primary education (ISCED 02) lasts longer, and the link is more pronounced in settings where the student-to-teaching-staff ratio and public expenditure per child are higher (OECD, 2013). In other words: input policies, such as the student-to-teaching-staff ratio, may be associated with learning outcomes. Despite increased participation and public investment in early childhood education and care services in OECD countries, little comparative data exist to determine under what conditions ECEC services are most beneficial for children, and what aspects are the most beneficial to the child. The OECD is developing a study that will provide information on the factors that support quality and equity in the early years (see Box 2).

Figure 7. Difference in mathematics performance, by attendance in a pre-primary education programme (2012)



Notes: Countries and economies are ranked in descending order of the score-point difference in mathematics performance between students who reported that they had attended pre-primary education (ISCED 0) for more than one year and those who had not attended pre-primary education, after accounting for socio-economic status.

Score-point differences that are statistically significant are marked in a darker tone.

Participation rates in pre-primary education are drawn from reports of 15-year old students participating in PISA 2012.

Source: OECD (2013), *PISA 2012 Results: Excellence through Equity (Volume II): Giving Every Student the Chance to Succeed*. Figure II.4.11, <http://dx.doi.org/10.1787/9789264201132-en>.

Box 2. The development of international data on quality in early education and care

The OECD programme of work on ECEC includes a series of projects to develop the extent of available data on ECEC. These include:

The TALIS Starting Strong Survey: is an international survey of ECEC staff and the quality of the learning and well-being environment in different ECEC settings across OECD member and non-member economies. The objective is to collect data on staff characteristics, pre-service and in-service education, pedagogical practices and beliefs, organisation and management, and working conditions to give countries an internationally framed assessment of what actually happens in their ECEC settings, i.e. the quality of the learning and well-being environment children experience (instrument development and pilot study in 2011/6, field trial in 2017, main study in 2018 and reporting in 2019).

The International Early Learning (for Child Well-being) Study seeks to provide reliable, comparative information on the social, emotional and cognitive development of children to assist countries to improve children's outcomes. It will measure children's early learning outcomes, at approximately five years of age, in the context of their ECEC experiences and home environments. The study will include a child assessment component as well as a parent questionnaire to gather information about the home learning environment. The study will be conducted in 3-6 countries from 2016 to 2019. Results on the study will be released in 2020.

A thematic study on transitions from ECEC to primary school will analyse country policies and practices in stimulating quality transitions from ECEC to primary education. This study will be based on existing literature and country background notes, which will form the basis of a comparative analytical report in 2017.

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NOTES

1. In the international standard classification of Education (ISCED 2011), pre-primary education (ISCED 02) is generally designed for children from age 3 to the start of primary education. Therefore, in international statistics, the term “pre-primary education” also includes in Finland 3 to–5 year-old children enrolled in Kindergartens and Family day care (see more details on terminology in Box 1).
2. The term “formal care” used in this note to present participation rates of 0-2 year-olds is a term not used in Finland.
3. Universal legal entitlement refers to a statutory duty for ECEC providers to secure (publicly subsidised) ECEC provision for all children living in a catchment area whose parents, regardless of their employment, socio-economic or family status, require an ECEC place.
4. For example, in the Netherlands and Switzerland, the actual level of spending and enrolment in pre-primary education is likely to be underestimated in the absence of data on integrated programmes (some caution is required before drawing conclusions about the conditions of access and quality of education and care for young children).
5. Private sources include households and other private entities, such as private businesses and non-profit organisations (e.g., religious organisations, charitable organisations, and business and labour associations).
6. Since August 2016, the ratio for children over 3 years is 1:8.
7. The ratio of children-to-teaching staff for Finland is based on the average figure of children aged 3 to 6 years old.
8. For Finland, this figure includes data on the majority of teachers, i.e. kindergarten teachers only for pre-primary education.
9. The OECD Family Database definition of “formal” childcare among children aged 0-2 years includes centre-based services, organised day care, pre-school and professional child-minders.
10. The full time equivalent (FTE) participation rate is calculated as follows: $FTE \text{ participation rate} = \text{participation rates for 0-2 year-olds in formal childcare} * (\text{average weekly hours for 0-2 year-olds in formal childcare} / 30)$.
11. The informal care measure used here is the proportion of children that use at least one hour of informal childcare in a usual week.
12. More recent data available from the Eurostat database (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_caindother&lang=en) do not necessarily show progress in this proportion.
13. Early childhood education and care refers to programmes classified as ISCED 01 (early childhood educational development) and ISCED 02 (pre-primary education) depending on the age of the child (see Box 1). In Finland, all 3-5 year olds using ECEC were registered as attending an ISCED 02 programme (pre-primary).
14. 39 score points in mathematics correspond to the equivalent of one year of formal schooling (OECD, 2013).
15. Pre-primary education in PISA 2012 refers to children from age 3 years to the start of primary education.

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Table 1. Summary of ECEC indicators, Finland and OECD average

Indicator	Finland	OECD average	Ref. year	Table	Source
Policy inputs					
Expenditure					
Total expenditure on early childhood educational development (ISCED 01) as a percentage of GDP (%)	0.4	0.2	2013	Table C2.3	OECD (2016)
Total expenditure on pre-primary education (ISCED 02) as a percentage of GDP (%)	0.9	0.6	2013	Table C2.3	OECD (2016)
Total expenditure on all early childhood education (ISCED 0) as a percentage of GDP (%)	1.3	0.8	2013	Table C2.3	OECD (2016)
Proportion of total expenditure on early childhood educational development (ISCED 01) from public sources (%)	90.8	68.6	2013	Table C2.3	OECD (2016)
Proportion of total expenditure on pre-primary education (ISCED 02) from public sources (%)	89	83	2013	Table C2.3	OECD (2016)
Proportion of total expenditure on early childhood education (ISCED 01 & ISCED 02) from public sources (%)	89	81	2013	Table C2.3	OECD (2016)
Annual expenditure per student in pre-primary education (in USD)	10 477	8 070	2013	Table C2.3	OECD (2016)
Quality of early childhood education and care services					
Ratio of pupils to teaching staff (in full-time equivalents) (ISCED 02)	45	14	2014	Table C2.2	OECD (2016)
Ratio of pupils to contact staff (teachers and teachers' aides) (in full-time equivalents) (ISCED 02)	m	12	2014	Table C2.2	OECD (2016)
Teachers' salaries					
Annual starting salary, typical training of pre-primary teachers in public institutions (in USD)	40 297	29 494	2014	Table D3.1a	OECD (2016)
Annual salary after 10 years of experience, typical training of pre-primary teachers in public institutions (in USD)	57 445	36 491	2014	Table D3.1a	OECD (2016)
Annual salary after 15 years of experience, typical training of pre-primary teachers in public institutions (in USD)	57 445	39 245	2014	Table D3.1a	OECD (2016)
Annual salary at top of scale, typical training of pre-primary teachers in public institutions (in USD)	57 717	47 826	2014	Table D3.1a	OECD (2016)
Pre-primary teachers' salaries relative to earnings for full-time, full-year with tertiary-education workers based on teachers' attainment level (25-64 years-old) (ratio)	0.82	0.74	2014	Table D3.2a	OECD (2016)
Teachers' characteristics					
Total duration of initial pre-primary teacher education (in years)	4	m	2013	Table D6.1a	OECD (2014)
Annual net teaching time of pre-primary teachers (in hours)	m	1005	2014	Table D4.1	OECD (2016)
Number of annual days of teaching (in days)	m	190	2014	Table D4.1	OECD (2016)

Table 1. Summary of ECEC indicators, Finland and OECD average (continued)

Indicator	Finland	OECD average	Ref. year	Table	Source
Policy outputs					
Participation in early childhood education and care services					
Participation rate in formal care and pre-school services for children under 3 years (%)	28	33	2013	Chart PF3.2.A	OECD (2015b)
Participation rate in formal care and pre-school services for children under 3 years, full-time equivalent (%)	30	35	2013	Chart PF3.2.B	OECD (2015b)
Average weekly hours in childcare among children under 3 years of age (in hours per week)	33	30	2013	Chart PF3.2.B	OECD (2015b)
Participation rates for 3 year olds in pre-primary education (%)	68	71	2014	Table C2.1	OECD (2016)
Participation rates for 4-year-olds in pre-primary education (ISCED 02) (%)	74	85	2014	Table C2.1	OECD (2016)
Participation rates for 5-year-olds in pre-primary and primary education (ISCED 02 + ISCED 1) (%)	79	95	2014	Table C2.1	OECD (2016)
Policy outcomes					
Average mathematics performance of students with					
No pre-primary education attendance (score points)	474	451	2012	Table II.4.12	OECD (2013)
Pre-primary education attendance for one year or less (score points)	512	475	2012	Table II.4.12	OECD (2013)
Pre-primary education attendance for more than one year (score points)	527	504	2012	Table II.4.12	OECD (2013)
Difference in mathematics performance between students (after accounting for students' economic, social and cultural status)					
Difference between those who reported having attended pre-primary school for one year or less and those who had not attended pre-primary education (score points)	27	15	2012	Table II.4.12	OECD (2013)
Difference between those who reported having attended pre-primary school for more than one year and those who had not attended pre-primary education (score points)	34	31	2012	Table II.4.12	OECD (2013)

Notes: a - data are not applicable because the category does not apply; m – data are not available.