



Starting Strong IV

Early Childhood Education and Care Data Country Note

NETHERLANDS

This Data Spotlight note on Early Childhood Education and Care (ECEC) provides a summary of ECEC policy inputs, outputs and outcomes in the Netherlands. 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 the Netherlands' 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 the Netherlands:

Resources that are invested in the ECEC system

- Expenditure on pre-primary education (ISCED 02) as a percentage of gross domestic product (GDP) is below the OECD average (0.4% and 0.6% of GDP, respectively).
- Expenditure per student in pre-primary education (ISCED02) is close to the OECD average (USD 8 305 and USD 8 070, respectively).
- The number of pupils per contact staff (teachers and teachers' aides) in pre-primary education (ISCED02) is relatively high (16 compared with 12 across the OECD).

Access and participation

- Extensive access to ECEC services, with special programmes for disadvantaged children.
- Participation of 0-2 year-olds in formal care is among the highest in the OECD (55% compared with 33% on average across the OECD), but is more often on a low number of hours.
- Participation of 3-5 year-olds in pre-primary education (ISCED02) is higher than the OECD average (e.g. for 3-year-olds rates were 81% in the Netherlands compared with 71% across the OECD).

Teacher's academic qualifications and working conditions

- Pre-primary teachers (ISCED 02) have a Bachelor's degree, above average salaries and their annual number of teaching hours is lower than average. By contrast, the minimum qualification required for ECEC staff working with children up to age four is upper secondary vocational education.

Monitoring Quality

- Monitoring of ECEC settings is a common practice in the Netherlands. Despite important efforts and numerous strategies to monitor quality in ECEC, some challenges persist. These include evaluating staff based on their performance; providing specialised support to staff to help them improve their pedagogies and practices; and making wider use of children's views on monitoring practices and evaluations (see [Monitoring Quality in Early Childhood Education and Care Country Note: Netherlands](#)).

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

- The percentage of 15-year-olds in the Netherlands who reported not attending pre-primary education in PISA 2012 was very low (2.3% compared with 7.1% across the OECD). 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 the Netherlands, the relationship between attending pre-primary education and mathematics performance of 15-year-olds was positive and close to the OECD average (28 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 high quality. 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 the 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 data).

Section 1. Policy inputs

Access to early childhood education and care services

The organisation of ECEC services varies greatly from country to country in terms of structures, but also regarding the age of children attending different types of settings or the intensity of participation (see Box 1). ECEC in the Netherlands combines two systems: childcare, which aims to facilitate the combination between work and care, and early childhood education, which consists of special targeted programmes for children aged 2-3 years with a language deficiency or educational disadvantage. Early childhood educational development programmes (ISCED 01), as defined in ISCED 2011, do not exist as such in the Netherlands. The ECEC system in the Netherlands refers to all settings that provide care and early education to children under the age of four (outside the scope of ISCED 2011). Most children enter (public funded) pre-primary education, which is located in primary school settings, at the age of 4. Compulsory schooling starts at the age of 5, but children can enrol in primary school at age four (OECD, 2016a).

The provision of ECEC to children below the age of four includes (OECD, 2016b):

- Private day-care centres (*kinderdagverblijven*): offer care for children between birth and four-years-old. These are primarily for working parents.
- In-home care by child-minders (*gastouderopvang*): offer care for children between birth until compulsory schooling age. The main aim is to support working parents.

- Public pre-kindergarten facilities (*peuterspeelzalen*), or playgroups: offer a more formal type of ECEC for children 2–3 year old.

Participation in ECEC services is partly supported by legal entitlements to a place in ECEC and efforts to ensure free access, at least for some ages and targeted population groups. Children with working parents have access to ECEC services in either day-care centres or playgroups. These settings are not free of parental costs, but most parents receive subsidies: on average, the government pays around 65% of the total costs. Working (or studying) parents are entitled to childcare allowance (*kinderopvangtoeslag*) for children under 12. Children aged 2.5–4 years from disadvantaged backgrounds can participate in targeted ECEC programmes (*voor en vroeg schoolse educatie*) that are provided in regular ECEC provisions (day-care centres and pre-kindergartens), such as childcare provisions and playgroups (OECD, 2016b; OECD, 2015a, Table 1.1). From the age of 4, pre-primary education is free for all Dutch children.

**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, 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 2016*.

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/eag-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

The level of governance responsible for early childhood education and care services differs according to the area concerned, such as funding, and also across countries. The Netherlands has a split ECEC system, with different authorities in charge of different settings at the central level. The Ministry of Social Affairs and Employment (*Ministerie van Sociale Zaken en Werkgelegenheid*, SZW) is in charge of ECEC for the age group 0-4 years, and the Ministry of Education, Culture and Science (*Ministerie van Onderwijs, Cultuur en Wetenschappen*; MoECS) is responsible for targeted ECEC VVE programmes (*voor en vroeg schoolse educatie*) for children aged 2.5 - 4 years and for ECEC for children aged 4-5. The Municipal Health Service (*Gemeentelijke Gezondheidsdienst*, GGD) is in charge of monitoring the structural quality of ECEC (OECD, 2016b). Funding responsibilities are shared between the national and the regional/state authorities. Municipalities in the Netherlands are obliged to define the target group, offer a place in day care of pre-kindergarten facilities for each child in their target group, and make agreements with relevant institutions/organisations on reaching the target group.

The Dutch system of financing child-minders and day care is carried out on a tripartite basis, with government, employers and parents all paying one-third of the childcare costs. Playgroups are financed by municipalities through block grants received from the national governments and parents. Some municipalities fully finance their playgroups (OECD, 2015a Table 1.2 and Table A1.4). Municipalities receive a budget for targeted ECEC for children aged 2.5-4 years old. The sum is based on the number of “*gewichtenkinderen*” (children at risk of an educational disadvantage) in primary education in their municipality. Schools also receive an additional budget from the government for children who risk educational disadvantage.

Expenditure on early childhood education is somewhat below the OECD average

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. The Netherlands does not report on the public funding of early childhood educational development (ISCED 01), only on pre-primary education (ISCED 02). Public and private expenditure on pre-primary education programmes (ISCED 02) was 0.4% of GDP in 2013, somewhat below the OECD average of 0.6%. By way of contrast, Chile, Iceland, Norway and Sweden spent 1.0% or more of their GDP on pre-primary education (ISCED 02) in 2013 (OECD, 2016a).

Expenditure per student in pre-primary education is close to the OECD average

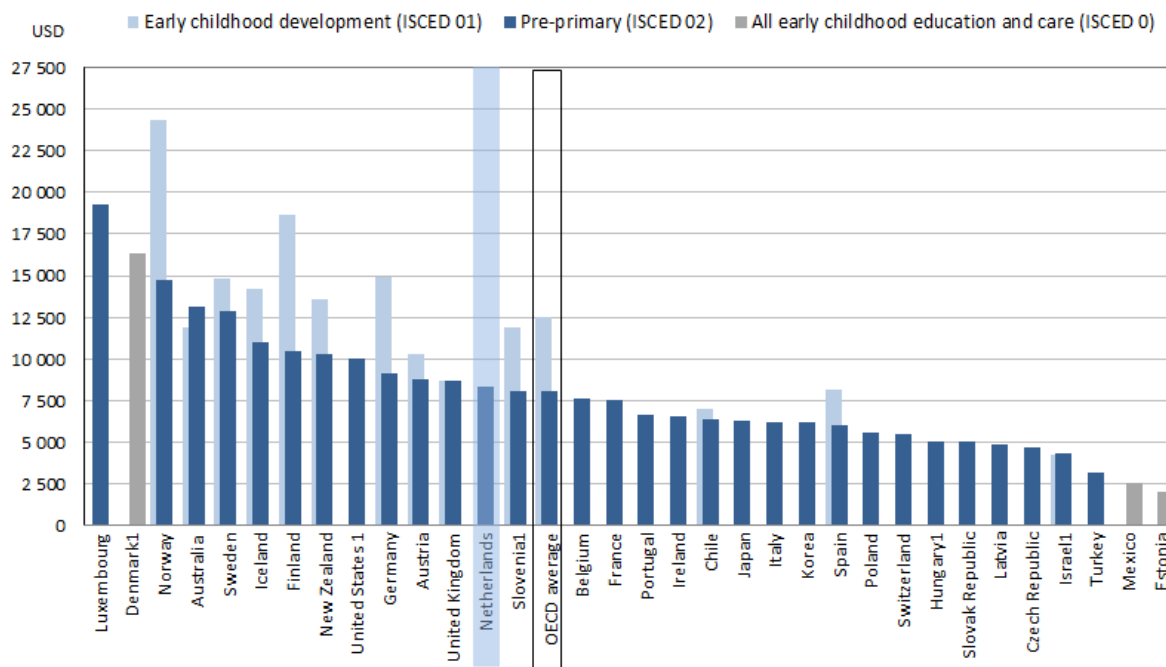
Expenditure per student in pre-primary education (ISCED 02) in the Netherlands was USD 8 305 in 2013, close to the OECD average of USD 8 070 per student in 2013 (see Figure 1). Cross-country differences in the share of GDP spending on ECEC (ISCED 0) and in expenditure per student at this level explain, at least partly, the differences in enrolment rates and in children to teacher ratios between countries. For instance, countries with higher expenditure per student tend to have higher enrolment rates or/and lower children to teaching staff ratio compared to the OECD average. The level of expenditure per student varies between countries depending on fees and cost of education, the level of wealth of the country, and the coverage by private ECEC structures.¹

The share of private funding of pre-primary education is low

Early childhood education and care services (like all other levels of education) are also funded by private sources², 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 the Netherlands, private funding of pre-primary education represented 0.05% of GDP in 2013,

compared to the OECD average of 0.11%. Only 12% of the total funding of pre-primary education (ISCED 02) comes from private sources, which is below the OECD average of 17% (see Figure 2).

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

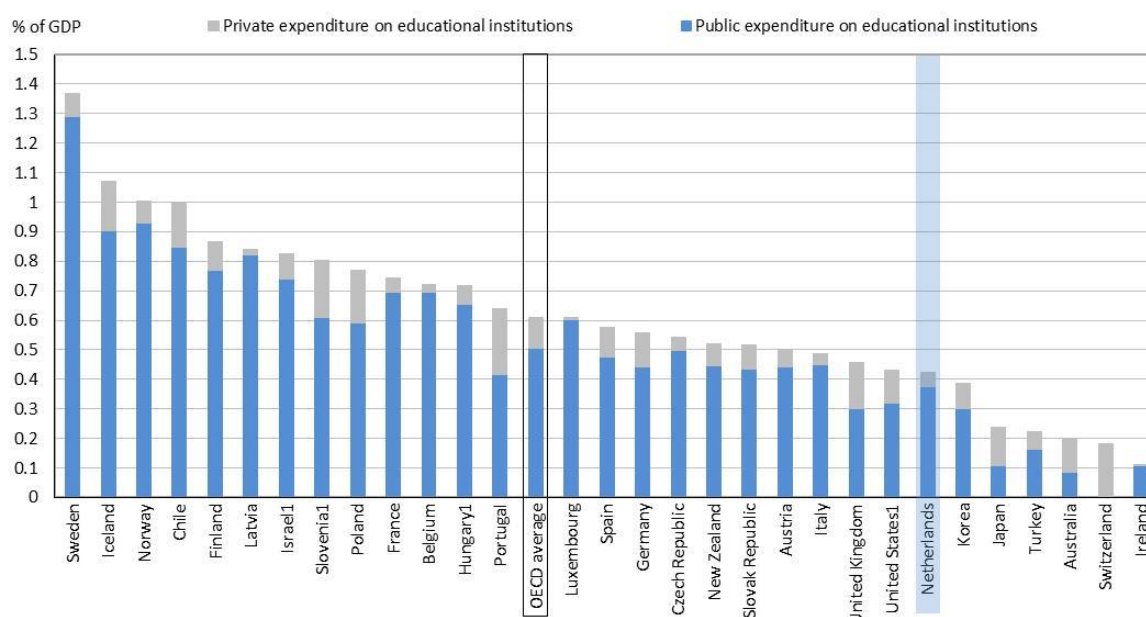


Notes: Countries are ranked in descending order of annual expenditure per student by educational institutions for pre-primary education.

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>

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, Table C2.3, <http://dx.doi.org/10.1787/888933398316>

Quality of early childhood education and care services

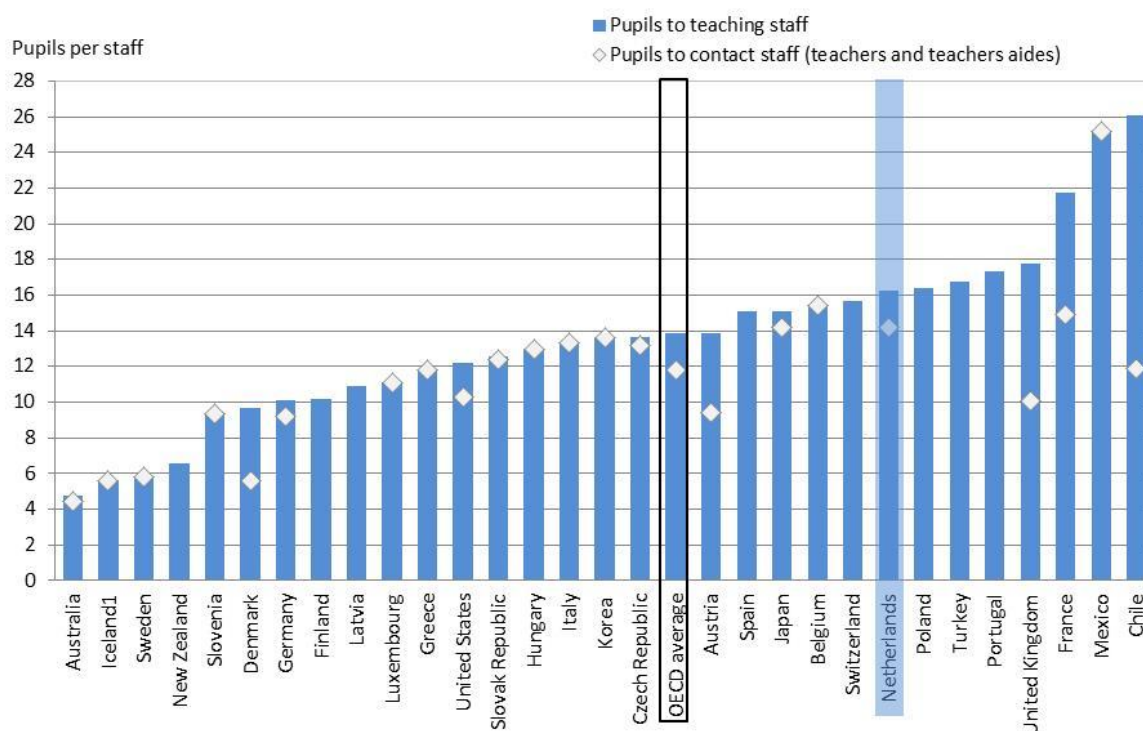
Curriculum frameworks can play a pivotal role in ensuring the quality of ECEC services. The Netherlands only provides some guidance for staff working on targeted programmes for children from disadvantaged backgrounds from the age of 2.5 years. The Netherlands does not have specific curricula, only developmental goals for children aged 4 and older. There is a strict legal quality framework in place, as in many other OECD countries. In the majority of OECD countries, curricula for the entire ECEC age group are in place, either in an integrated way that covers both ECEC and primary school, such as in the German *Länder* (federal states), or with different curricula for different age groups, such as in Korea or Scotland (United Kingdom) (OECD, 2015a, Table 1.3).

The number of pupils per staff member in pre-primary education is comparatively high

The child-to-staff ratio is an important indicator of the resources invested in education and childcare, 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 (OECD, 2011).

In some countries, regulations are in place regarding the maximum number of children per adult in childcare services. In the Netherlands, the maximum number of children per staff member in childcare for 2 to 3 year-olds is 8 children per staff member (OECD, 2012, figure 1.5). The OECD average is seven per staff member (OECD, 2012). In the pre-primary education, there were about 16 children per teacher in the Netherlands in 2014, excluding auxiliary staff (i.e. support staff for teachers and educators). This is above the OECD average of 14 children per teacher (see Figure 3).

At the pre-primary level (ISCED 02), auxiliary staff (i.e. support staff for teachers and educators) works directly with children. At this level, 8 OECD countries, including the Netherlands, have reported better pupils-to-contact staff ratios (teaching and auxiliary staff) than ratios for teaching staff only (OECD average of 12 children per contact staff compared to 14 children per teaching staff). In the Netherlands, there are 14 children per contact staff, compared to 16 children per teaching staff (see Figure 3).

Figure 3. Ratio of pupils-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.
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 educational degree and below-average teaching hours

In OECD countries, the duration of initial teacher training varies more for pre-primary education (ISCED 02) than for 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 the Netherlands, the duration of initial teacher training in pre-primary education is four years. A formal induction programme for new teachers is not offered, compared to many other countries where formal induction is obligatory (OECD 2014, Table D6.1a). Staff members in childcare and playgroups are educated to lower levels than pre-primary school teachers, and the duration of their education is usually also shorter (OECD, 2012). The minimum qualification required for ECEC staff working with children up to age four is upper secondary vocational education (an *Middelbaar Beroepsonderwijs* (MBO) diploma) (OECD, 2016b). This is low compared to many other OECD countries. For example, all Nordic countries, New Zealand and the United Kingdom require tertiary diplomas for ECEC staff (OECD, 2011). An additional qualification is required for working in targeted ECEC programmes.

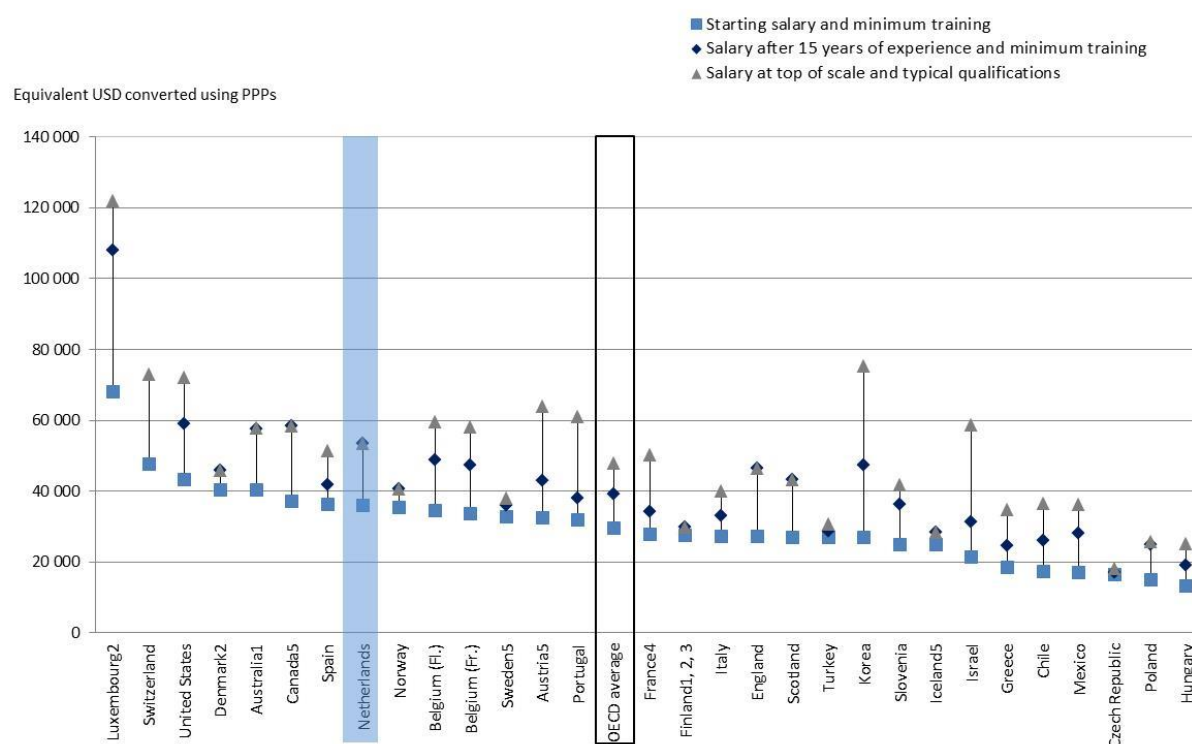
In the Netherlands, there are, on average, 40 weeks of teaching per year in pre-primary education (ISCED 02), which is similar to the OECD average. Pre-primary teachers spend annually 930 hours in the classroom, which is around 75 hours less than the OECD average of 1 005 hours (OECD, 2016a, Table D4.1). The Netherlands is one of few countries (together with Austria, the Czech Republic, Denmark and Germany) where teachers' total annual statutory working time (e.g. the amount of time available for teaching but also for non-teaching activities such as lesson preparation, correction, in-service training and staff meetings), at school or elsewhere, is specified, but not the division of this time spent within and outside of the classroom (OECD, 2016a, Table D4.1).

Salaries of pre-primary teachers are above the OECD average in absolute terms

The statutory salary of pre-primary teachers (ISCED 02) in the Netherlands is significantly higher than the OECD average, both for beginning teachers (USD 36 097 against an OECD average of USD 29 494 in 2014), for those with 10 years of experience (USD 44 847 against an OECD average of USD 36 491), or 15 years of experience (USD 53 544 against an OECD average of USD 39 245). The statutory salary at the top of the scale is also higher, with USD 53 544 in the Netherlands compared to the OECD average of USD 47 826 (see Figure 4). Including bonuses and allowances paid to teachers, the average salary of pre-primary teachers in the Netherlands is USD 49 405, around 30% higher than the average in OECD countries 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/10.1787/888933398940>.

In all OECD countries, pre-primary teachers (ISCED 02) need to have a tertiary degree. To compare the salary levels and the labour market situation between countries, teachers' pay is compared to earnings of workers with tertiary education (25-64 year-olds who work full time, full year). The salary for teachers in pre-primary education (ISCED 02) in the Netherlands was 68% of the earnings of workers with tertiary education in 2014, which again is well above the average of OECD countries at 74% (OECD 2016, Table D3.2a).

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. In the Netherlands, the service quality of ECEC settings is monitored, in principal, once a year, mainly through inspections. When a setting performs really well, the frequency of inspections can be reduced. Staff quality is also monitored in the Netherlands in childcare, playgroups, and targeted ECEC programmes in childcare or playgroup settings. Staff quality can be a part of inspections but is also commonly monitored using self-assessments. Data on child development at the national level are collected every two years from a sample of two-year-old children who both do and do not attend some form of ECEC (including playgroups, childcare and other ECEC settings). Children's development is more continuously monitored within ECEC settings (OECD, 2015a).

Although the Netherlands has implemented a range of monitoring practices in ECEC, several challenges remain. Firstly, children's views are not widely monitored, while this can provide some useful information on how children experience ECEC. And secondly, ensuring ECEC staff has a high level of quality can be challenging. Evaluating staff based on their performance and providing specialised support to staff to help them improve their performance can contribute to better quality pedagogies and practices. This is discussed in further detail in the Netherlands' country note on Monitoring Quality in ECEC (OECD, 2016c).

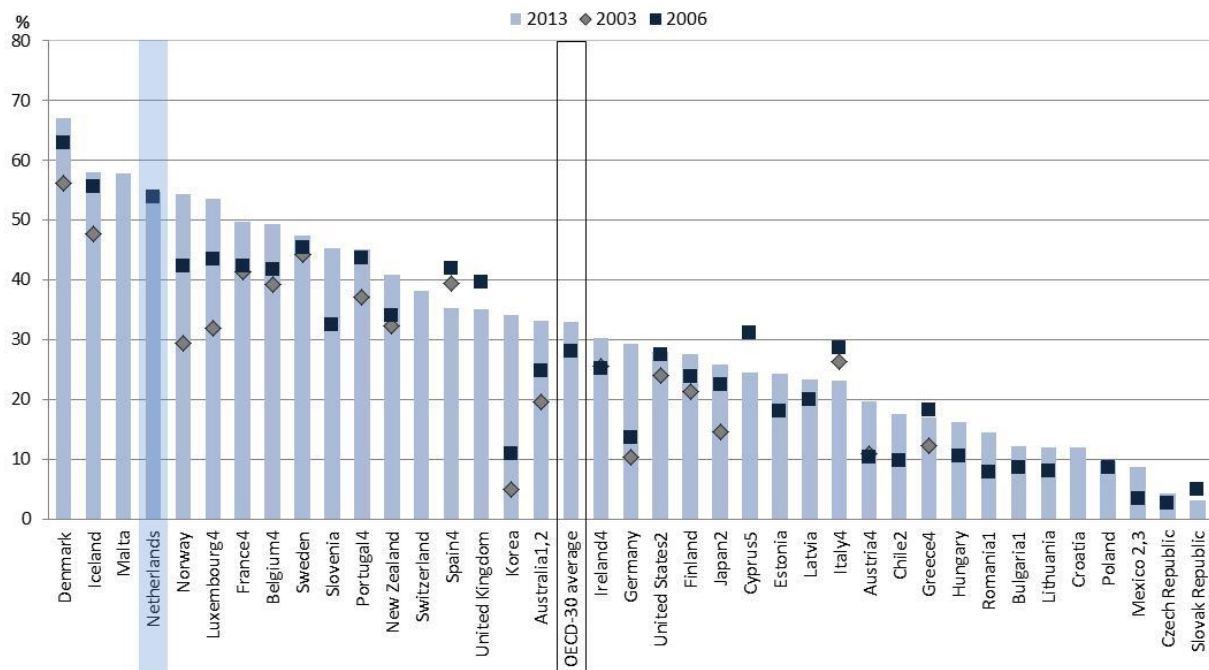
Section 2. Policy outputs

Above average participation of 0-2 year-olds in formal childcare

Early childhood educational development programmes (ISCED 01), as defined in ISCED 2011, are not formally structured in the Netherlands, but some ECEC services for children under 3 years have an intentional educational aim. In the Netherlands, participation rates of children under the age of 3 in formal childcare arrangements³ (ISCED 0 and other registered ECEC services) are higher than in most OECD countries. On average across OECD countries, 33% of 0-2-year-olds attend some form of formal ECEC; in the Netherlands, this figure is 55%. Only Denmark, Iceland, Luxembourg and Norway have similarly high participation rates in formal childcare for children below the age of 3 (see Figure 5).

Participation rates do not provide any information about the intensity of participation in childcare services, i.e. whether children participate full-time or part-time. This intensity varies considerably across countries. In the Netherlands, a child attended ECEC (ISCED 01) for an average of 17 hours per week in 2013, which is below the 30 hours corresponding to full-time care. The full-time equivalent (FTE) participation rate (adjusted for the intensity of use of childcare services) is the participation rate if all 0-2 year-olds that use formal childcare do so on a full-time basis⁴. In the Netherlands, the full-time equivalent participation rate is at 31%, which reflects the high average participation rates, but the comparatively low number of hours a Dutch child attends childcare. Around one third of OECD countries have higher full-time equivalent participation rates, including Denmark, Iceland and Norway with 60% or higher of FTE participation rates (OECD, 2015b, chart PF3.2.B).

Figure 5. Participation rates 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 child-minders. 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.

High participation in informal care, but only for a few hours per week

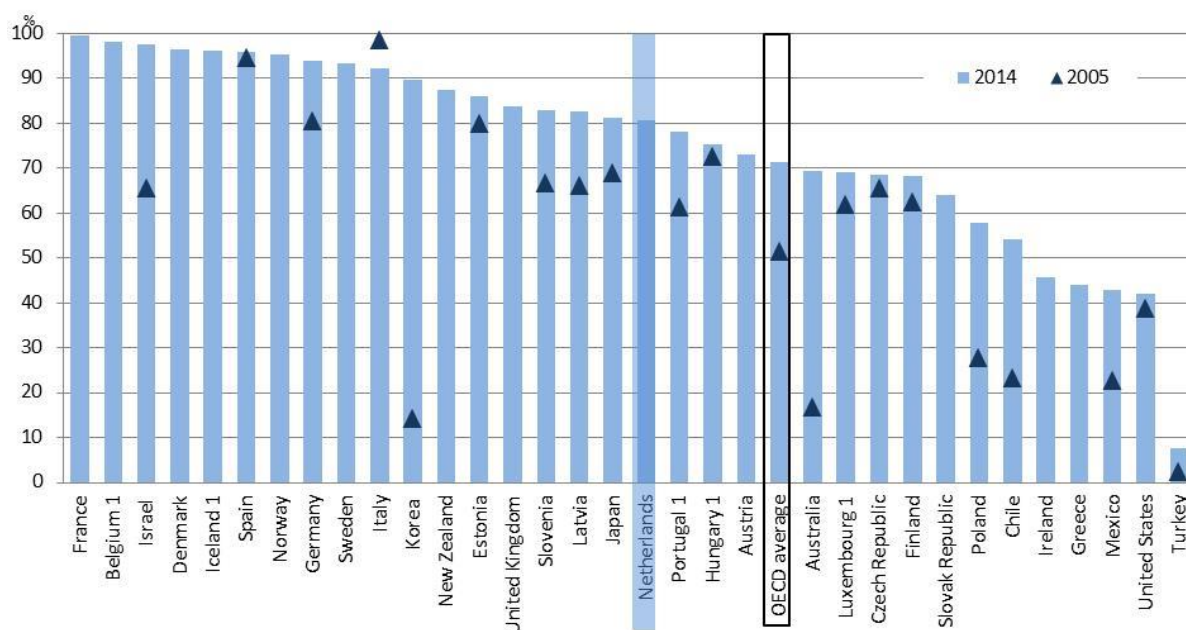
Parents in many countries make use of informal childcare arrangements (generally unregulated care arranged by the child's parent either in the child's home or elsewhere, provided by relatives, friends, neighbours, babysitters or nannies). In 2013, 48% of 0-2 year-olds and 51% of 3-5 year-olds in the Netherlands received some informal form of ECEC.⁵ (OECD, 2015b, chart PF3.3.A). Few OECD countries have data that shows similarly high shares of young children in informal care, these countries include Greece, Italy, Slovenia and Switzerland. Informal childcare is generally used for only a few hours per week in the Netherlands: young children below the age of 6 years spent less than 10 hours per week in informal ECEC in 2013. The number of hours per week in informal care is significantly higher in most other OECD countries (OECD, 2015b, chart PF3.3.B).

High participation in pre-primary education of children 3-4 year-olds

Early childhood education and care (ISCED 0) 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 (mostly pre-primary education). On average across OECD countries, 71% of 3-year-olds and 86% of 4-year-olds attended ECEC programmes (ISCED 0) in 2014, although this varies widely across countries.

In the Netherlands, participation rates in ECEC are above the OECD average, with 81% of 3-year-olds attending pre-primary education (ISCED 02, see Figure 6). In 11 OECD countries (Belgium, Denmark, France, Germany, Iceland, Israel, Italy, Korea, Norway, Spain and Sweden), at least 90% of 3-year-olds are enrolled in pre-primary programmes (OECD, 2016a, Table C2.1). In the Netherlands, nearly all children are enrolled in pre-primary education programmes at age 4 (96%). Most OECD countries achieve full enrolment in ECEC for 5-year-olds, including the Netherlands (OECD, 2016a).

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



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

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/10.1787/888933398291>.

Early childhood education, as well as primary and secondary education, is mostly organised in public institutions in OECD countries and, on average, 68% of pre-primary pupils (ISCED 02) were enrolled in public institutions in 2014. In the Netherlands, the majority (71%) of children in pre-primary education (ISCED 02) were enrolled in public institutions in 2014 (OECD, 2016a, Table C2.2).

Section 3. Policy outcomes

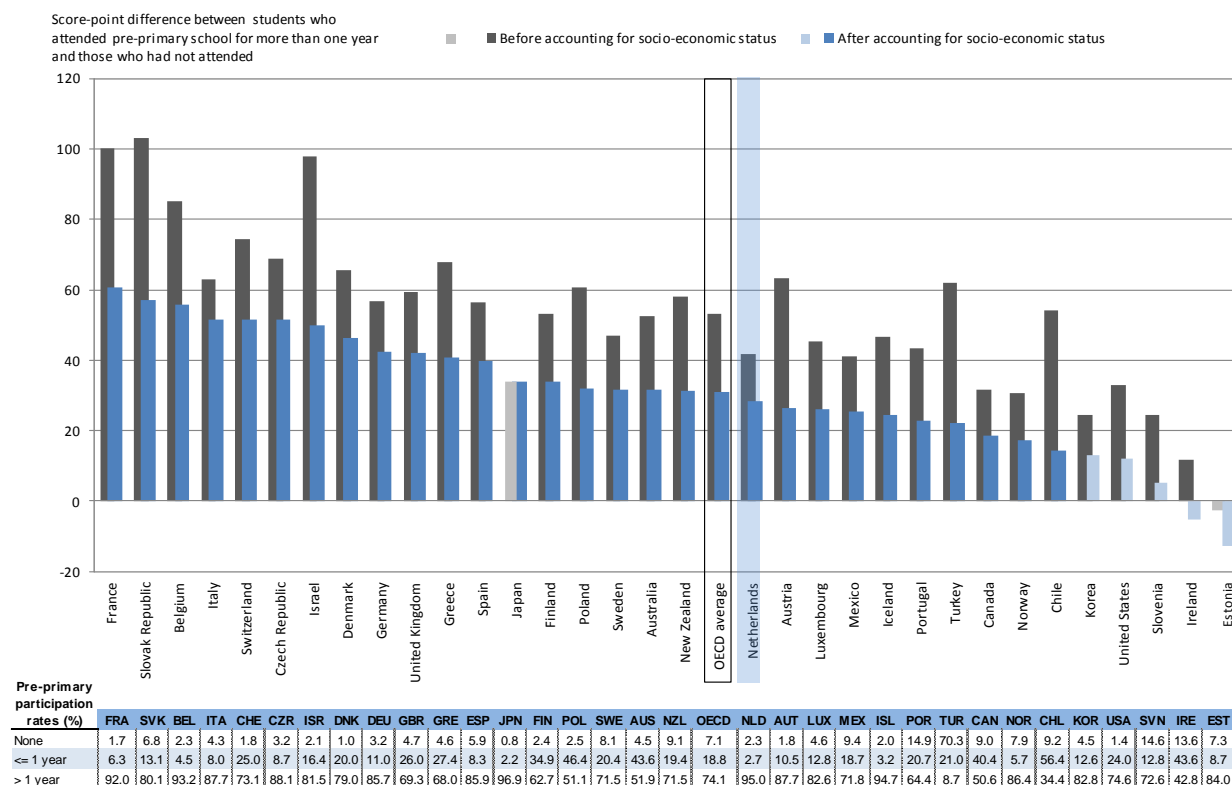
A close to average association between attending pre-primary education and 15-year-olds' mathematics performance

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 a child'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 in mathematics than students who did not attend pre-primary education. The percentage of 15-year-olds in the Netherlands who reported not attending pre-primary education in PISA 2012 was low (2.3% 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 the Netherlands, 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 28 score points after accounting for socio-economic background – the equivalent of almost 9 months of formal schooling (close to the OECD average of 31 score points)⁶ (see Figure 7).

PISA data also show that the correlation between enrolment in pre-primary education (ISCED 02) and performance at the age of 15 is generally stronger in education systems where participation in pre-primary education lasts more than one year, and the link is more pronounced in settings where the student-to-teaching-staff ratio and public expenditure per student are higher (OECD, 2013). In other words: input policies, such as the student-to-teaching-staff ratio, may be associated with learning outcomes. However, although participation rates and public investment in early childhood education and care services have increased in OECD countries, there is little comparative data available 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 of 15-year-olds, by attendance in a pre-primary education programme (2012)



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

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.

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

Source: OECD (2013a), 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 2016, 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. 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 to draw conclusions about the conditions of access and quality of education and care for young children).
2. 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).
3. 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.
4. The full-time equivalent (FTE) participation rate is calculated as follows: FTE participation rate = participation rates for 0-2 year-olds in formal childcare * (average weekly hours for 0-2 year-olds in formal childcare/30).
5. 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.
6. 39 score points in mathematics correspond to the equivalent of one year of formal schooling (OECD, 2013).

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

Indicator	Netherlands	OECD average	Ref. year	Table	Source
Policy inputs					
Expenditure					
Total expenditure on early childhood educational development (ISCED 01) as a percentage of GDP (%)	a	0.2	2013	Table C2.3	OECD (2016)
Total expenditure on pre-primary education (ISCED 02) as a percentage of GDP (%)	0.4	0.6	2013	Table C2.3	OECD (2016)
Total expenditure on all early childhood education (ISCED 0) as a percentage of GDP (%)	a	0.8	2013	Table C2.3	OECD (2016)
Proportion of total expenditure on early childhood educational development (ISCED 01) from public sources (%)	a	68.6	2013	Table C2.3	OECD (2016)
Proportion of total expenditure on pre-primary education (ISCED 02) from public sources (%)	88.4	82.9	2013	Table C2.3	OECD (2016)
Proportion of total expenditure on early childhood education (ISCED 01 & ISCED 02) from public sources (%)	a	81.2	2013	Table C2.3	OECD (2016)
Annual expenditure per student in pre-primary education (in USD)	8 305	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)	14	14	2014	Table C2.2	OECD (2016)
Ratio of pupils to contact staff (teachers and teachers' aides) (in full-time equivalents) (ISCED 02)	16	12	2014	Table C2.2	OECD (2016)
Teachers' salaries					
Annual starting salary, typical training of pre-primary teachers in public institutions (in USD)	36 097	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)	44 847	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)	53 544	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)	53 544	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)	0.68	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)	930	1005	2014	Table D4.1	OECD (2016)
Number of annual days of teaching (in days)	195	190	2014	Table D4.1	OECD (2016)

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

Indicator	Netherlands	OECD average	Ref. year	Table	Source
Participation in early childhood education and care services					
Participation rate in formal care and pre-school services for children under 3 years (%)	55	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 (%)	31	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 (ISCED 02) (%)	81	71	2014	Table C2.1	OECD (2016)
Participation rates for 4-year-olds in pre-primary education (ISCED 02) (%)	96	86	2014	Table C2.1	OECD (2016)
Participation rates for 5-year-olds in pre-primary education (ISCED 02) (%)	99	95	2014	Table C2.1	OECD (2016)
Policy outcomes					
Average mathematics performance of students with					
No pre-primary education attendance (score points)	484	451	2012	Table II.4.12	OECD (2013)
Pre-primary education attendance for one year or less (score points)	522	475	2012	Table II.4.12	OECD (2013)
Pre-primary education attendance for more than one year (score points)	526	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)	28	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)	28	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.