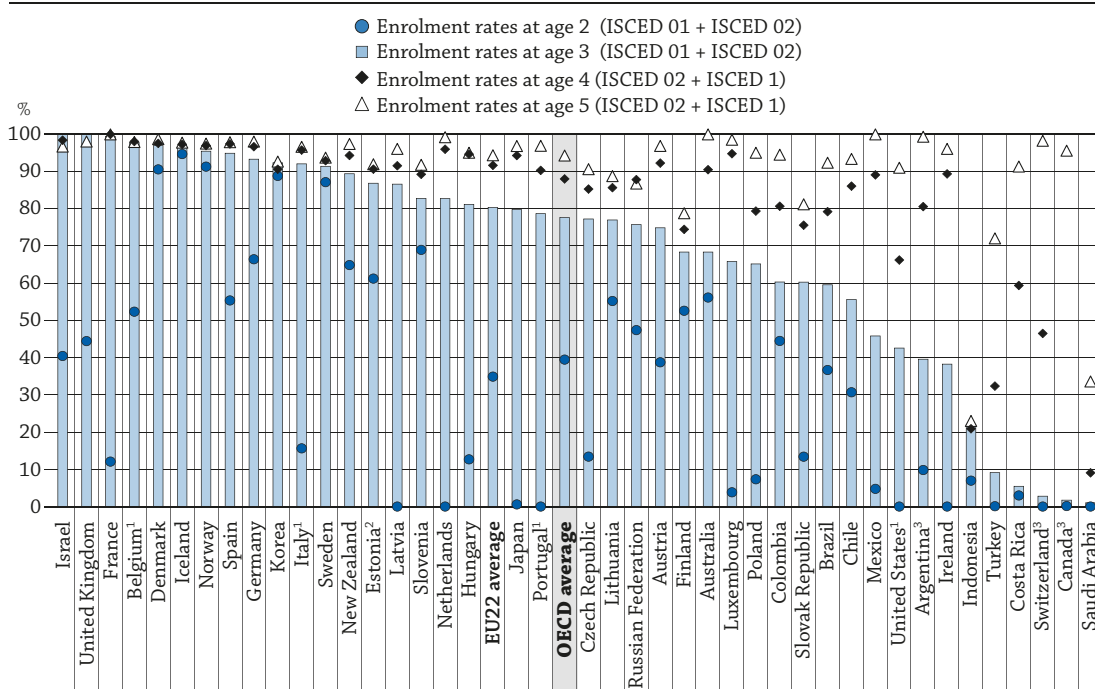


## HOW DO EARLY CHILDHOOD EDUCATION SYSTEMS DIFFER AROUND THE WORLD?

- In a majority of OECD countries, education now begins for most children well before they are five years old – 78% of three-year-olds are enrolled in early childhood education across OECD countries. In OECD countries that are part of the European Union, 80% of three-year-olds are enrolled.
- The proportion of children enrolled in private early childhood education programmes is considerably greater than the private enrolment shares at primary and secondary levels. On average, 55% of children in early childhood educational development programmes attend private institutions, compared to 33% for pre-primary programmes (see Figure C2.2).
- Expenditure on early childhood education accounts for an average of 0.8% of GDP, of which 0.6% is allocated to pre-primary education. Public expenditure accounts for 83% of all resources allocated for pre-primary education and 71% of funding for early childhood educational development (82% for early childhood education overall).

**Figure C2.1. Enrolment rates at ages 2 to 5 in early childhood and primary education (2015)**

Early childhood educational development programmes = ISCED 01,  
pre-primary education = ISCED 02, primary education = ISCED 1



1. Includes only pre-primary education at the ages of 2 and 3 (ISCED 02).

2. Includes early childhood development programmes at the ages of 4 and 5 (ISCED 01).

3. Year of reference 2014.

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

Source: OECD (2017), Table C2.1. See Annex 3 for notes ([www.oecd.org/education/education-at-a-glance-19991487.htm](http://www.oecd.org/education/education-at-a-glance-19991487.htm)).

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### Context

As parents are more likely to be in the workforce today, there is a growing need for early childhood education and care. In addition, there is increasing awareness of the key role that early childhood education (ECE) plays for children's well-being and cognitive and social-emotional development. As a result, ensuring the quality of ECE has become a policy priority in many countries.

There are many different early childhood education and care systems and structures within OECD countries. Consequently, there is also a range of different approaches to identifying the boundary between ECE and childcare. These differences should be taken into account when drawing conclusions from international comparisons. Though the present indicator collects data only on ECE, roughly three-quarters of OECD countries have integrated programmes available nationwide that combine ECE with a care component (Tables C2.4 and C2.5, available on line).

In a majority of OECD countries, early childhood education and care policy has developed in parallel to increases in women's labour-force participation. More and more women have become salaried employees since the 1970s, as the service- and knowledge-based economies have expanded. Because economic prosperity depends on maintaining a high employment-to-population ratio, encouraging more women to enter the labour market has prompted greater government interest in expanding early childhood education and care services. In the 1970s and 1980s, European governments in particular put in place family and childcare policies to encourage couples to have children and ensure that it is feasible for women to combine work and family responsibilities (OECD, 2016a; OECD, 2011a).

Many of the inequalities found in education systems are already evident when children enter formal schooling; these persist (or increase) as they progress through the school system. Enrolling children in ECE helps prepare them to enter and succeed in formal schooling, mitigates social inequalities and promotes better student outcomes. There is a growing body of evidence that shows that children who have a strong start in their development, learning and well-being will have better outcomes when they grow older (Duncan and Magnuson, 2013). Such evidence has prompted policy makers to design early interventions and rethink their education spending patterns to gain "value for money".

Currently, over half of OECD countries have integrated their early childhood education and care systems in terms of curricula and governing authorities (see *Definitions* section at the end of this indicator for a breakdown of early childhood education programmes and corresponding ISCED levels). Such integration has been found to be associated with better quality of education, more affordable access, better-qualified staff, and smoother transitions to subsequent education for children (OECD, 2017a). ECE can also be provided in more school-like settings or in integrated early childhood provision, as is more common in the Nordic countries and Germany, for example. The recognised educational benefits of early childhood education and care for children, combined with the need to provide childcare services to support parental labour-force participation, has incited an increasing number of countries to consider moving towards these types of integrated systems (OECD, 2017a).

### ■ Other findings

- Across OECD countries almost nine out of ten four-year-olds (87%) are enrolled in pre-primary education (or in primary education in a few countries).
- Some 75% of children enrolled in pre-primary programmes in European OECD countries attend public institutions, compared to an overall OECD average of 67%.
- The ratio of children to teaching staff is an indicator of the resources devoted to ECE. The child-teacher ratio at the pre-primary level for OECD countries, excluding teachers' aides, ranges from 25 children per teacher in Chile and Mexico to fewer than 7 in Iceland, New Zealand and Sweden.
- Some countries make extensive use of teachers' aides in pre-primary education, which is indicated by smaller ratios of children to contact staff than of children to teaching staff. For instance, Norway – which has 16 children per teaching staff member – has just 7 children per contact staff once teachers' aides are included.
- Two years of ECE is the minimum duration required to boost academic performance at age 15, according to data from the 2015 OECD Programme for International Student Assessment (PISA) (OECD, 2016b; OECD, 2017a).

## Analysis

While primary and lower secondary enrolment patterns are fairly similar throughout OECD countries, enrolment varies significantly among OECD and other G20 countries for both early childhood educational development programmes (ISCED 01) and pre-primary programmes (ISCED 02). Variation between countries also encompasses financing, the overall level of participation in programmes, the typical starting age for children and the duration of programmes (Table C2.5, available on line).

### Enrolment in early childhood education

In most OECD countries, ECE now begins for most children well before they are five years old. Almost nine out of ten four-year-olds (87%) are enrolled in pre-primary and primary education across OECD countries. In the OECD countries that are part of the European Union, 90% of four-year-olds are enrolled. OECD enrolment rates in pre-primary education at this age vary from 98% or higher in Belgium, Denmark, France, Israel and the United Kingdom, to less than 50% in Greece, Switzerland and Turkey. ECE programmes for even younger children are not as extensive: while 39% of two-year-olds are enrolled in ECE across all OECD countries, this rises to 78% for three-year-olds. The highest enrolment rates of three-year-olds in ECE are found in Denmark, France, Iceland, Israel, Norway, Spain and the United Kingdom, exceeding 96% (Table C2.1, Figure C2.1 and OECD, 2017a).

Over the past decade, many countries have expanded ECE. This increased focus has resulted in the extension of compulsory education to lower ages in some countries, free ECE, universal provision and the creation of programmes that integrate care with formal pre-primary education. Between 2005 and 2015, average enrolment in pre-primary education among OECD countries rose from 54% of three-year-olds in 2005 to 73% in 2015. Enrolment in pre-primary or primary education for four-year-olds also rose, from 76% to 87%, over the same period. The enrolment rates of four-year-olds increased by over 30 percentage points in Australia, Chile, Korea, Poland and the Russian Federation.

### Enrolment in early childhood education and PISA performance at age 15

Data from the 2015 OECD Programme for International Student Assessment (PISA) of 15-year-old students suggest that ECE has a positive impact on outcomes later on in life: indeed, the PISA data suggest that two years of ECE is the minimum duration required to boost science performance at age 15. While students who reported having received between two and three years of ECE scored higher than those who had attended between one and two years, even after controlling for socio-economic status, the same effect is not found when comparing students who received three to four years and two to three years of ECE, respectively (OECD, 2017a).

However, the relationship between performance and ECE attendance tends to be curvilinear for enrolments of less than a year: students having attended between two and three years of pre-primary school have a higher score than students who did not attend pre-primary education at all or who attended for less than a year (OECD, 2016b). This perhaps counterintuitive result may be partly explained by the fact that the benefits of early childhood education and care depend heavily on its quality. PISA research shows that the relationship between pre-primary attendance and performance tends to be stronger in school systems with longer-duration pre-primary education, smaller child-to-teacher ratios in pre-primary education, and higher public expenditure per child at the pre-primary level (OECD, 2016b: Table II.6.51). Among all input variables, duration of early childhood education and care is one of the strongest predictors of performance in PISA tests (OECD, 2017a). It is not possible to ascertain, however, to what extent this is a corollary of early childhood learning opportunities or merely the result of individuals with certain characteristics selecting disproportionately into these programmes.

### Early childhood education, by type of institution

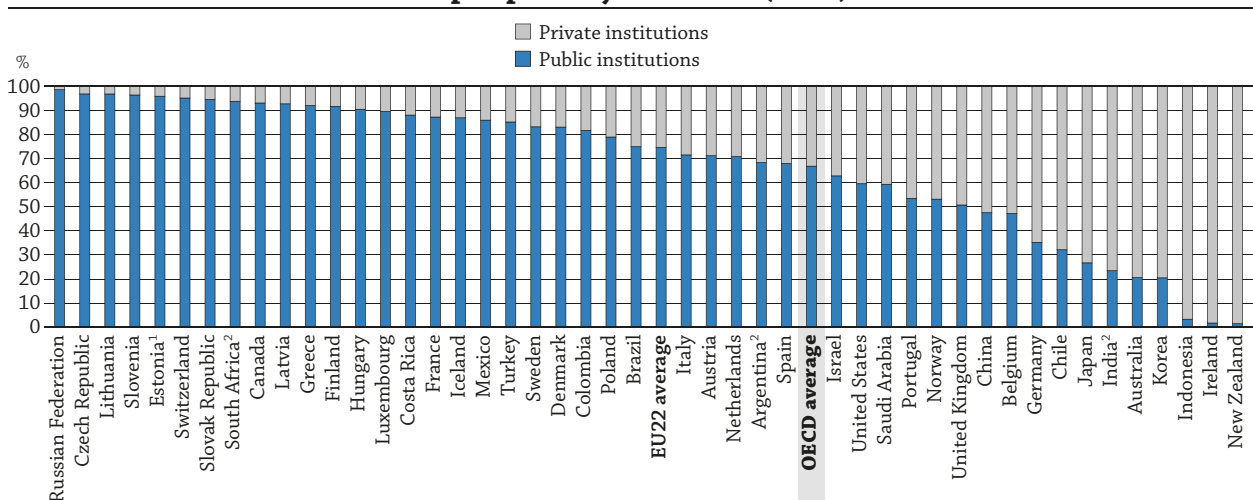
Parents' needs and expectations regarding accessibility, cost, programme and staff quality, and accountability are all important in assessing the expansion of ECE programmes and the type of providers. When parents' needs for quality, accessibility or accountability are not met by public institutions, some parents may be more inclined to send their children to private pre-primary institutions (Shin, Jung and Park, 2009).

In most countries, the proportions of children enrolled in private ECE institutions are considerably larger than in primary and secondary education. Private institutions can be classified into two different types: government-dependent and independent private. Independent private institutions are controlled by a non-governmental organisation or by a governing board not selected by a government agency, and receive less than 50% of their core funding from government agencies. Although government-dependent private institutions have similar governance structures, they rely on government agencies for more than 50% of their core funding.

For just over half of countries with available data, at least 50% of children in early childhood educational development programmes are enrolled in private institutions. On average across all OECD countries, 55% of children in early childhood educational development programmes and 33% of children in pre-primary education are enrolled in private institutions (Figure C2.2). For pre-primary education, approximately one-third of children enrolled in private institutions (i.e. 12% of all children) are enrolled in independent private institutions.

In New Zealand, 99% of children enrolled in pre-primary education attend government-dependent private institutions, while Ireland has the highest share of children enrolled in independent private pre-primary institutions, at 98%. Regarding private early childhood educational development programmes, 100% of children in Turkey and Indonesia attend independent private institutions, while 99% of children in New Zealand attend government-dependent institutions. On the other hand, in Colombia, the Russian Federation and Slovenia, over 95% of children in early childhood educational development programmes attend public institutions.

**Figure C2.2. Percentage of children enrolled in public and private institutions in pre-primary education (2015)**




1. Pre-primary includes early childhood development programmes.

2. Year of reference 2014.

Countries are ranked in descending order of the percentage of children enrolled in public institutions in pre-primary education.

Source: OECD (2017), Table C2.2. See Annex 3 for notes ([www.oecd.org/education/education-at-a-glance-19991487.htm](http://www.oecd.org/education/education-at-a-glance-19991487.htm)).

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### Variation in child-teacher ratios across OECD countries

Research demonstrates that enriched, stimulating environments and high-quality pedagogy are fostered by better-qualified practitioners, and that better-quality staff-child interactions facilitate better learning outcomes. Qualifications indicate how much specialised and practical training is included in initial staff education, what types of professional development and education are available and taken up by staff, and how many years of experience staff have accumulated. While qualifications are one of the strongest predictors of staff quality, the level of qualification tells only part of the story. Working conditions can also influence professional satisfaction, which is likely to affect the ability and willingness of professionals to build relationships and interact attentively with children. High turnover disrupts the continuity of care, undermines professional development efforts, lowers overall quality and adversely affects child outcomes (OECD, 2017a).

The ratio of children to teaching staff is an important indicator of the resources devoted to education. It is obtained by dividing the number of full-time equivalent children at a given level of education by the number of full-time equivalent teachers at that level and in similar types of institutions (see Indicator D2).

Table C2.2 shows the ratio of children to teaching staff and also the ratio of children to contact staff (e.g. teachers and teachers' aides) in ECE. On average across OECD countries, there are 14 children for every teacher in pre-primary education. The child-teacher ratio, excluding teachers' aides, ranges from more than 20 children per teacher in Brazil, Chile, Colombia, France, Mexico and South Africa to fewer than 10 in Iceland, New Zealand, Slovenia and Sweden (Table C2.2).

Many countries make very limited use of teachers' aides, and ten of the countries with available data do not make use of teachers' aides at all (Belgium, Czech Republic, Hungary, Italy, Korea, Luxembourg, Mexico, Slovak Republic, Slovenia and Sweden). However, Chile employs one teacher's aide per 19 children, and Norway employs one for every 11. Thus, for these two countries, there are more aides per child than there are teachers. Contrasting pre-primary education with early childhood educational development programmes, we see that there is a smaller average ratio of children to teaching staff in early childhood educational development programmes than in pre-primary education (8 children compared to 14 children per teacher, respectively).

In countries where data are available, early childhood educational development programmes typically make far greater use of teachers' aides than pre-primary programmes. Chile and Norway each employ more teachers' aides than teachers at this level, as is the case in Mexico, where teachers' aides are not employed at all in pre-primary education. The greater use of teachers' aides at this level is quite possibly driven by the fact that younger children require more attention than those at the pre-primary level, and may also be an ancillary effect of the higher share of privately-run early childhood educational development institutions, which may have different relationships both with parents and with teachers' unions.

### Financing early childhood education

Sustained public financial support is critical for the growth and quality of ECE programmes. Appropriate funding helps to recruit professional staff who are qualified to support children's cognitive, social and emotional development. Investment in early childhood facilities and materials also helps support the development of child-centred environments for well-being and learning. In countries that do not channel sufficient public funding towards achieving both broad access and high-quality programmes, some parents may be more inclined to send their children to private ECE services, which implies heavier financial burdens on households, and where the ability to pay significantly influences the quality of services (OECD, 2017a). These issues may be compounded in countries where public funding for parental leave is limited, and parents must therefore choose between looking to the private market for childcare; relying on informal arrangements with family, friends and neighbours; or else decreasing professional activity altogether (OECD, 2011a).

At the level of early childhood educational development, annual expenditure per child – from both public and private sources and for both public and private institutions – averages USD 13 536 in OECD countries with available data. In almost all of these countries, expenditure per child is much higher in early childhood educational development than in pre-primary education. Public educational expenditure at the pre-primary level is mainly channelled through public institutions, but in some countries it also funds private institutions to varying degrees. For instance, virtually all ECE programmes are in government-dependent private institutions in New Zealand, which by definition receive more than 50% of their funding through public sources. Annual ECE expenditure per child from both public and private sources averages USD 8 858 across OECD countries. However, expenditure varies from less than USD 2 500 in Indonesia, South Africa and Turkey to more than USD 13 000 in Denmark, Iceland, Luxembourg, Norway and Sweden (Table C2.3).

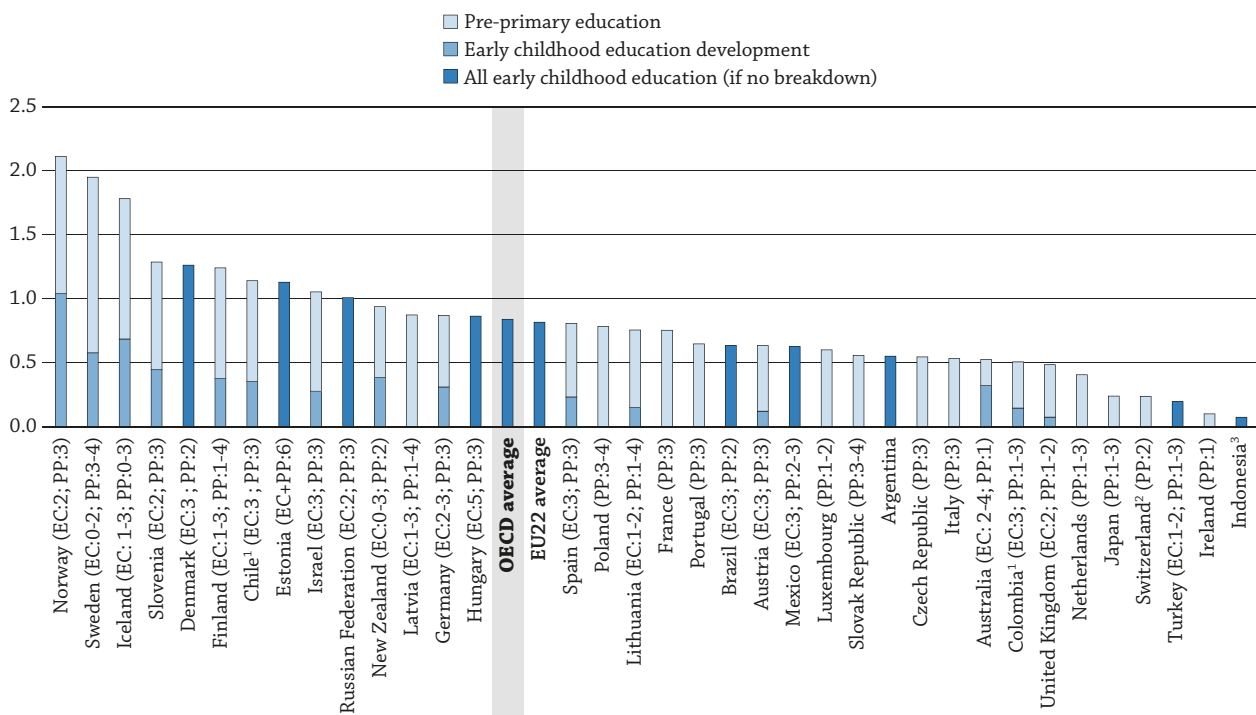
In early childhood educational development, public sources account for 71% of total expenditure on average across OECD countries. Of the 13 countries for which data are available, the proportion of public funding is at least 80% in 6 countries, and exceeds 90% for just 2 (Finland and Sweden). Conversely, in Colombia, Israel, Spain and the United Kingdom, the proportion of public spending is less than 60%. Public funding is generally more significant in pre-primary education, where it contributes to 83% of total expenditure on average for OECD countries; for two-thirds of countries, 80% or more of expenditure comes from the government. The share of pre-primary education provided by public sources exceeds 97% in Ireland, Latvia and Luxembourg. The only countries where private sources account for more than 50% of total expenditure at pre-primary level are Japan (54%) and the United Kingdom (52%).

In ECE, many governments delegate responsibilities to local authorities and public funding is more decentralised in early childhood education than at any other level of education. Local governments contribute 100% of public ECE funding in Norway, Denmark and Iceland. Once transfers are taken into account, the same is also true of Latvia, Poland and Estonia. For 10 countries, at least one-fifth of total public ECE expenditures are transferred to local governments to be administered. There are advantages and disadvantages to the devolution of expenditure and other policy making, however. It can make services better-adapted to the needs and circumstances of local families, and improve co-ordination with parents and communities. However, devolution can also have drawbacks, including widening differences in access and quality between regions. In the devolution process, it is important to ensure that

early childhood services are part of a well-conceptualised national policy, with devolved powers to local authorities on the one hand, and a national approach to goal setting, legislation and regulation, financing, staffing criteria, and programme standards on the other (OECD, 2017a).

Expenditure on all ECE accounts for an average of 0.8% of GDP across OECD countries, of which 0.6% is allocated to pre-primary education (Figure C2.3). Differences between countries are significant. For example, while less than 0.3% of GDP is spent on ECE in Indonesia, Ireland, Japan, Switzerland and Turkey, countries such as Iceland, Norway and Sweden spend over 1.7% of GDP (Table C2.3). These differences are largely explained by enrolment rates, legal entitlements and costs, and the different starting age for primary education. These estimates are also influenced by the non-negligible effect of missing data on private institutions for some countries. Moreover, certain key programmes fall outside ISCED classifications; for instance, investment in childcare programmes in France amounted to 0.6% of GDP in 2013. Finally, comparison of different countries' relative expenditure on ECE can be complicated by the shorter duration of pre-primary education resulting from early transitions to primary education, as is the case in Australia and Ireland. The theoretical duration of countries' ECE programmes is summarised in Table C2.3.

**Figure C2.3. Expenditure on early childhood educational institutions (2014)**  
As a percentage of GDP, by category



**Note:** The number in parentheses corresponds to the theoretical duration of early childhood educational development (EC) and pre-primary (PP).  
1. Year of reference 2015.  
2. Public expenditure only.  
3. Year of reference 2013.

Countries are ranked in descending order of public and private expenditure on educational institutions.

**Source:** OECD (2017), Table C2.3. See Annex 3 for notes ([www.oecd.org/education/education-at-a-glance-19991487.htm](http://www.oecd.org/education/education-at-a-glance-19991487.htm)).

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Generally speaking, countries with a shorter theoretical duration for ECE programmes allocate a smaller share of GDP to them. For example, countries such as Switzerland and Turkey spend relatively small fractions of GDP on ECE, partly explained by the comparatively shorter theoretical duration of their ECE programmes (both pre-primary and early childhood development). Estonia, Poland, the Slovak Republic and Sweden have the longest pre-primary ECE programmes, though here expenditure as a share of GDP varies significantly, from 0.6% of GDP in the Slovak Republic to 1.4% in Sweden.

## Subnational variation in early childhood education

The OECD average enrolment rate in early childhood education for three-year-olds is 78%, though enrolment rates vary significantly across subnational regions, ranging from 4% to 100% in the 13 countries with subnational data. While in Belgium, Germany and Sweden subnational averages for enrolment are 92% or higher, with no region falling below 90%, there is much greater regional variation in larger federal countries such as the Russian Federation and the United States. In these two countries, subnational enrolment rates range from 12% to 100% (the Russian Federation) and 12% to 67% (the United States). Data for overall enrolment rates in early childhood education or primary education by age show that subnational variation diminishes as children grow older (OECD/NCES, 2017).

## Definitions

**Education-only programmes** in early childhood education are those that primarily offer education services for a short period of the day. Working parents usually have to use additional care services in the morning and/or afternoon.

**Integrated programmes** in early childhood education are those that provide both early childhood education and care in the same programme.

**Integrated system** refers to systems where the responsibilities for early childhood education and care services are under one (leading) authority (at the national and/or regional level), e.g. the education ministry, ministry of social welfare or another authority. Those responsibilities may stretch from curriculum development to standard-setting, monitoring or financing.

**ISCED level 0** refers to early childhood programmes that have an intentional education component. ISCED level 0 programmes cover early childhood education (ECE) for all ages and target children below the age of entry into primary education (ISCED level 1), are institutionalised, and meet the minimum intensity of 2 hours per day over a duration of at least 100 days per year (OECD, European Union, UNESCO, 2015).

There are two categories of ISCED level 0 programmes, which are classified depending on age and the level of complexity of the educational content:

**ISCED level 01** refers to early childhood educational development programmes, typically aimed at children under 3 years old. The learning environment is visually stimulating and language rich, and fosters self-expression with an emphasis on language acquisition and the use of language for meaningful communication. There are opportunities for active play so that children can exercise their co-ordination and motor skills under supervision and in interaction with staff.

**ISCED level 02** refers to pre-primary education programmes, aimed at children in the years immediately prior to starting compulsory schooling, typically aged between 3 and 5 years old. Through interaction with peers and educators, children improve their use of language and their social skills, start to develop logical and reasoning skills, and talk through their thought processes. They are also introduced to alphabetical and mathematical concepts, understanding and use of language, and are encouraged to explore their surrounding world and environment. Supervised gross motor activities (i.e. physical exercise through games and other activities) and play-based activities can be used as learning opportunities to promote social interactions with peers and to develop skills, autonomy and school readiness.

Please see Indicators B1 and B2 for definitions on *Expenditure per student by educational institution* and *Expenditure per student by educational institutions relative to per capita GDP*.

## Methodology

ISCED level 0 programmes are usually school-based or otherwise institutionalised for a *group* of children. As the institutions authorised to provide ISCED level 0 programmes vary between jurisdictions (e.g. centre-based, community-based, home-based), to be reported in the UOE collection both the *programme* and the *mode or institution of delivery* should be recognised within the country's early childhood education system. Particular care is given to programmes delivered from home-based settings: if the programme meets the criteria as set out above *and* is recognised under the country's regulations, it is included in reporting.

Programmes that provide childcare only are excluded from this indicator. However in some countries, institutions providing early childhood education also provide extended day or evening childcare programmes. Education programmes traditionally provided during the day may now be provided outside these hours to offer further flexibility to parents and carers of children. These are given special consideration in reporting.

The concepts used to define full-time and part-time participation at other ISCED levels, such as study load, child participation, and the academic value or progress that the study represents, are not easily applicable to ISCED level 0. In addition, the number of daily or weekly hours that represent a typical full-time enrolment in an education programme at ISCED level 0 varies widely between countries. Because of this, full-time-equivalents cannot be calculated for ISCED level 0 programmes in the same way as for other ISCED levels.

For data-reporting purposes, countries separate ISCED level 0 data into ISCED 01 and ISCED 02 by age only, as follows: data from age-integrated programmes designed to include children younger and older than 3 are allocated to 01 and 02 according to the age of the children, as described above. This may involve estimation of expenditures and personnel at levels 01 and 02.

Please see Indicators B1 and B2 for methodology relating to the calculation of *Expenditure per student by educational institution* and *Expenditure per student by educational institutions relative to per capita GDP*.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017b) and Annex 3 for country-specific notes ([www.oecd.org/education/education-at-a-glance-19991487.htm](http://www.oecd.org/education/education-at-a-glance-19991487.htm)).

### Source

Data are for the school year 2014/15 (unless otherwise specified) and are based on the UOE data collection on education systems administered annually by UNESCO, the OECD and Eurostat for all OECD and partner countries. Data from Argentina, China, Columbia, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).

Data on subnational regions for selected indicators have been released by the OECD, with the support from the US National Centre for Education Statistics (NCES) and are currently available for 13 countries: Belgium, Finland, Germany, Greece, Ireland, Italy, Poland, the Russian Federation, Slovenia, Spain, Sweden, Turkey and the United States. Subnational estimates were provided by countries using national data sources or were calculated by Eurostat based on data for Level 2 of the Nomenclature of Territorial Units for Statistics (NUTS 2).


#### Note regarding data from Israel

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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**Indicator C2 Tables**StatLink  <http://dx.doi.org/10.1787/888933560985>**Table C2.1** Enrolment rates in early childhood and primary education, by age (2005 and 2015)**Table C2.2** Characteristics of early childhood educational development programmes and pre-primary education (2015)**Table C2.3** Expenditure on early childhood educational institutions (2014)**WEB** **Table C2.4** Profile of education-only and integrated pre-primary programmes (2015)**WEB** **Table C2.5** Characteristics of early childhood education programmes in OECD and partner countries

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at <http://dx.doi.org/10.1787/eag-data-en>. More breakdowns can also be found at <http://stats.oecd.org/>, Education at a Glance Database.

Table C2.1. **Enrolment rates in early childhood and primary education, by age (2005 and 2015)**

Early childhood educational development programmes = ISCED 01, pre-primary education = ISCED 02

	Enrolment rates (2015)															Enrolment rates (2005)			
	Age 2			Age 3			Age 4			Age 5			Age 6			Age 3		Age 4	
	ISCED 01	ISCED 02	Total	ISCED 01	ISCED 02	Total	ISCED 02	ISCED 01	Total	ISCED 02	ISCED 01	Total	ISCED 02	ISCED 01	Total	ISCED 02	ISCED 02	ISCED 01	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
<b>OECD</b>																			
Australia	56	0	56	47	21	68	89	2	90	19	82	100	0	100	100	17	51	2	53
Austria	32	7	39	11	64	75	92	0	92	97	0	97	41	58	99	47	85	0	85
Belgium	m	52	m	m	98	m	98	0	98	97	1	98	4	94	98	m	m	0	m
Canada	m	m	m	m	m	m	m	m	m	x(12)	x(12)	95	x(15)	x(15)	100	m	m	m	m
Chile	29	1	31	6	49	56	86	0	86	93	0	93	15	82	98	23	30	12	42
Czech Republic	a	13	13	a	77	77	85	0	85	91	0	91	45	49	94	66	91	0	91
Denmark	90	1	91	5	92	97	98	0	98	97	2	99	8	91	99	m	m	m	m
Estonia <sup>1</sup>	x(3)	x(3)	61	x(6)	x(6)	87	91 <sup>d</sup>	0	91 <sup>d</sup>	92 <sup>d</sup>	0	92 <sup>d</sup>	91 <sup>d</sup>	1	92 <sup>d</sup>	80	84	0	84
Finland	53	0	53	0	68	68	74	0	74	79	0	79	97	1	98	62	69	0	69
France	a	12	12	a	99	99	100	0	100	99	1	100	1	100	100	100	100	0	100
Germany	66	0	66	0	93	93	97	0	97	98	0	98	34	65	99	80	89	0	89
Greece	m	a	m	m	a	m	48	a	48	94	0	94	3	96	99	0	56	0	56
Hungary	13	0	13	1	80	81	95	0	95	95	0	95	59	32	91	73	91	0	91
Iceland	95	0	95	0	97	97	97	0	97	98	0	98	0	98	98	m	m	m	m
Ireland	a	0	0	a	38	38	56	33	89	0	96	96	0	99	99	m	m	44	m
Israel	40	0	40	0	100	100	98	0	98	96	0	97	13	84	97	66	84	0	84
Italy	m	16	m	m	92	m	96	0	96	88	8	97	1	96	98	99	100	0	100
Japan	a	1	1	a	80	80	94	0	94	97	0	97	0	100	100	69	95	0	95
Korea	89	0	89	0	92	92	91	0	91	92	0	93	0	98	98	15	30	0	30
Latvia	a	0	0	a	87	87	92	0	92	96	0	96	93	4	97	66	73	0	73
Luxembourg	a	4	4	a	66	66	95	0	95	94	5	99	5	93	99	62	95	0	95
Mexico	5	0	5	4	42	46	89	0	89	84	27	100	1	100	100	23	69	0	69
Netherlands	a	0	0	a	83	83	96	0	96	99	0	99	0	100	100	m	98	0	98
New Zealand	65	0	65	0	89	89	94	0	94	3	95	97	0	98	98	m	m	m	m
Norway	91	0	91	0	95	95	97	0	97	98	0	98	1	99	100	85	88	0	88
Poland	a	7	7	a	65	65	79	0	79	95	0	95	50	45	95	28	38	0	38
Portugal	m	0	m	m	79	m	90	0	90	97	0	97	7	91	98	61	84	0	84
Slovak Republic	a	13	13	a	60	60	76	0	76	81	0	81	40	50	90	m	m	0	m
Slovenia	69	0	69	0	83	83	89	0	89	92	0	92	7	93	99	67	76	0	76
Spain	55	0	55	0	95	95	97	0	97	98	0	98	1	96	97	94	99	0	99
Sweden	87	0	87	0	91	91	93	0	93	94	0	94	97	1	98	84	89	0	89
Switzerland	m	0	m	m	3	m	46	0	47	98	1	98	56	44	100	9	39	0	39
Turkey	0	0	0	0	9	9	32	0	32	51	21	72	0	96	96	2	5	0	5
United Kingdom	44	0	44	0	100	100	100	3	100	0	98	98	0	99	99	m	m	32	m
United States	m	0	m	m	43	m	66	0	66	85	6	91	21	77	98	39	68	0	68
OECD average <sup>2</sup>	54	4	39	4	73	78	86	1	87	82	13	95	23	74	98	54	73	3	76
EU22 average <sup>2</sup>	57	6	35	2	81	80	88	2	90	85	10	95	31	66	97	67	83	4	83
<b>Partners</b>																			
Argentina <sup>3</sup>	10	0	10	1	38	40	81	0	81	99	1	99	1	99	100	m	m	m	m
Brazil	36	0	37	50	10	60	79	0	79	85	8	92	9	89	99	m	m	m	m
China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Colombia	44	1	44	0	60	60	80	1	81	75	20	95	7	77	84	m	m	m	m
Costa Rica	3	0	3	5	0	5	59	0	59	91	0	91	6	88	94	m	m	m	m
India <sup>3</sup>	a	m	m	a	m	m	m	4	m	m	33	m	m	86	m	m	m	m	m
Indonesia	7	0	7	10	12	22	21	0	21	21	2	23	62	32	94	m	m	m	m
Lithuania	55	0	55	0	77	77	86	0	86	89	0	89	93	5	98	53	58	0	58
Russian Federation	47	0	47	0	76	76	88	0	88	86	1	87	77	11	89	42	42	0	42
Saudi Arabia	a	0	0	a	1	1	9	0	9	33	1	34	9	84	93	m	m	m	m
South Africa <sup>3</sup>	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
G20 average	m	m	m	m	m	m	m	1	m	m	17	m	m	84	m	m	m	m	m

Note: Early childhood education targets children aged below the age of entry into ISCED level 1. There are two categories of ISCED level 0 programmes: early childhood educational development (ISCED 01) and pre-primary education (ISCED 02). Enrolment rates at young ages should be interpreted with care; mismatches between the coverage of the population data and the enrolment data mean that the participation rates may be underestimated.

1. Pre-primary (ISCED 02) includes early childhood development (ISCED 01).

2. The OECD and EU22 averages for ISCED 01 are calculated only for countries in which these programmes exist and are not comparable to averages from previous editions of *Education at a Glance*.

3. Year of reference 2014.

Source: OECD (2017). See *Source* section for more information and Annex 3 for notes ([www.oecd.org/education/education-at-a-glance-19991487.htm](http://www.oecd.org/education/education-at-a-glance-19991487.htm)).

Please refer to the *Reader's Guide* for information concerning symbols for missing data and abbreviations.


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Table C2.2. **Characteristics of early childhood educational development programmes and pre-primary education (2015)**

Early childhood educational development programmes = ISCED 01, pre-primary education = ISCED 02

	Children enrolled in pre-primary education (ISCED 02) as a percentage of total enrolment in early childhood education (ISCED 01 + ISCED 02)	Distribution of children in ISCED 01, by type of institution				Distribution of children in ISCED 02, by type of institution				Ratio of children to teaching staff in full-time equivalents					
		Public	Private		Total	Public	Private		Total	ISCED 01		ISCED 02		Total (ISCED 0)	
			Government-dependent private	Independent private			Government-dependent private	Independent private		Children to contact staff (teachers and teachers aides)	Children to teaching staff	Children to contact staff (teachers and teachers aides)	Children to teaching staff	Children to contact staff (teachers and teachers aides)	Children to teaching staff
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
<b>OECD</b>															
Australia	44	m	m	a	m	21	79	a	79	m	m	m	m	m	
Austria	85	33	x(5)	x(5)	67	71	x(9)	x(9)	29	6	9	9	13	9	
Belgium	m	m	m	m	m	47	53	0	53	m	m	15	15	m	
Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m	
Chile	80	69	29	2	31	32	61	7	68	5	12	11	25	11	
Czech Republic	100	a	a	a	a	97	3	a	3	a	a	13	13	13	
Denmark	64	50	10	39	50	83	17	0	17	m	m	m	m	m	
Estonia	m	x(6)	a	x(8)	x(9)	96 <sup>d</sup>	a	4 <sup>d</sup>	4 <sup>d</sup>	m	x(15)	m	x(15)	m	
Finland	80	88	12	a	12	92	8	a	8	m	m	m	10	m	
France <sup>1</sup>	100	a	a	a	a	87	12	0	13	a	a	15	22	15	
Germany	74	27	x(5)	x(5)	73	35	x(9)	x(9)	65	5	5	9	10	7	
Greece	m	m	m	m	m	92	a	8	8	m	m	m	m	m	
Hungary	96	86	7	7	14	90	7	3	10	10	10	12	12	12	
Iceland	69	82	18	0	18	87	13	0	13	m	3	m	5	m	
Ireland	100	a	a	a	a	2	0	98	98	a	a	m	m	m	
Israel	78	a	67	33	100	63	29	8	37	m	m	m	m	m	
Italy	m	m	m	m	m	72	0	28	28	a	a	13	13	13	
Japan	100	a	a	a	a	27	a	73	73	a	a	14	15	14	
Korea	65	8	92	0	92	21	79	0	79	5	5	13	13	9	
Latvia	100	a	a	a	a	93	a	7	7	m	a	m	10	m	
Luxembourg	100	a	a	a	a	90	0	10	10	a	a	11	11	11	
Mexico	95	37	a	63	63	86	a	14	14	5	15	25	25	21	
Netherlands	100	a	a	a	a	71	a	29	29	a	a	14	16	14	
New Zealand	61	1	99	0	99	1	99	0	99	m	4	m	6	m	
Norway	65	49	51	a	51	53	47	a	47	4	9	7	16	5	
Poland	100	a	a	a	a	79	2	19	21	a	a	m	15	m	
Portugal	m	m	m	m	m	53	31	16	47	m	m	m	17	m	
Slovak Republic	100	a	a	a	a	95	5	a	5	a	a	12	12	12	
Slovenia	71	95	5	0	5	96	3	0	4	6	6	9	9	8	
Spain	76	51	15	33	49	68	28	4	32	m	9	m	15	m	
Sweden	74	81	19	0	19	83	17	0	17	5	5	6	6	6	
Switzerland	m	m	m	m	m	95	1	4	5	a	a	m	m	m	
Turkey	100	a	a	100	100	85	a	15	15	m	m	m	m	m	
United Kingdom	82	10	87	3	90	51	44	5	49	m	m	m	m	m	
United States	m	m	m	m	m	60	a	40	40	m	m	10	12	m	
<b>OECD average</b>	<b>84</b>	<b>45</b>	<b>m</b>	<b>m</b>	<b>55</b>	<b>67</b>	<b>21</b>	<b>12</b>	<b>33</b>	<b>6</b>	<b>8</b>	<b>m</b>	<b>14</b>	<b>11</b>	
<b>EU22 average</b>	<b>88</b>	<b>58</b>	<b>m</b>	<b>m</b>	<b>42</b>	<b>75</b>	<b>13</b>	<b>12</b>	<b>25</b>	<b>6</b>	<b>7</b>	<b>m</b>	<b>13</b>	<b>11</b>	
<b>Partners</b>															
Argentina <sup>2</sup>	93	44	x(5)	x(5)	56	68	x(9)	x(9)	32	m	m	m	m	m	
Brazil	62	64	a	36	36	75	a	25	25	8	14	18	21	13	
China	100	a	a	a	a	48	x(9)	x(9)	52	a	a	m	20	m	
Colombia	72	100	x(5)	x(5)	m	82	x(9)	x(9)	18	m	m	m	38	m	
Costa Rica	93	22	x(5)	x(5)	78	88	x(9)	x(9)	12	m	5	m	13	m	
India <sup>2</sup>	100	a	a	a	a	23	5	72	77	a	a	m	m	m	
Indonesia	72	0	0	100	100	3	0	97	97	m	20	m	15	m	
Lithuania	84	94	a	6	6	97	a	3	3	7	10	7	11	7	
Russian Federation	85	99	a	1	1	99	a	1	1	m	m	m	m	7	
Saudi Arabia	100	a	a	a	a	59	x(9)	x(9)	41	a	a	m	11	m	
South Africa <sup>2</sup>	m	m	m	m	m	94	x(9)	x(9)	6	m	m	m	30	m	
<b>G20 average</b>	<b>84</b>	<b>m</b>	<b>m</b>	<b>m</b>	<b>m</b>	<b>57</b>	<b>m</b>	<b>m</b>	<b>43</b>	<b>m</b>	<b>m</b>	<b>m</b>	<b>17</b>	<b>m</b>	


Note: Columns listing the characteristics of early childhood education programmes (Columns 16-22) are available for consultation on line (see *StatLink* below).

1. Data for Columns 12 to 15 represent public and government-dependent private institutions only.

2. Year of reference 2014.

Source: OECD (2017). See Source section for more information and Annex 3 for notes ([www.oecd.org/education/education-at-a-glance-19991487.htm](http://www.oecd.org/education/education-at-a-glance-19991487.htm)).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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A corrigendum has been issued for this page. See: <http://www.oecd.org/about/publishing/Corrigendum-Education-at-a-Glance2017.pdf>

Table C2.3. Expenditure on early childhood educational institutions (2014)

	Theoretical duration of the programme (years)		Expenditure on educational institutions as a percentage of GDP			Annual expenditure by educational institutions per student (in USD using PPPs)			Proportion of total expenditure from public sources		
	Early childhood educational development	Pre-primary	Early childhood educational development	Pre-primary	All early childhood education	Early childhood educational development	Pre-primary	All early childhood education	Early childhood educational development	Pre-primary	All early childhood education
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>OECD</b>											
Australia	2-4	1	0.3	0.2	0.5	12 498	12 613	12 542	63	72	67
Austria	3	3	0.1	0.5	0.6	11 729	9 122	9 525	77	87	85
Belgium <sup>1</sup>	2.5-3	3	m	0.7	m	m	7 807	m	m	97	m
Canada	1-3	1-2	m	m	m	m	m	m	m	m	m
Chile <sup>2</sup>	3	3	0.4	0.8	1.1	9 524	5 309	6 153	86	83	84
Czech Republic	a	3	a	0.5	0.5	a	5 031	5 031	a	92	92
Denmark <sup>3</sup>	3	2	x(5)	x(5)	1.3	x(8)	x(8)	16 298	x(11)	x(11)	81
Estonia	x(2)	6 <sup>4</sup>	x(5)	x(5)	1.1	x(8)	x(8)	6 162	x(11)	x(11)	91
Finland	1-3	1-4	0.4	0.9	1.2	19 083	10 546	12 205	91	89	89
France	a	3	a	0.8	0.8	a	7 758	7 758	a	93	93
Germany	2-3	3	0.3	0.6	0.9	15 573	9 569	11 094	77	79	78
Greece	1-3	1-2	m	m	m	m	m	m	m	m	m
Hungary	5	3	x(5)	x(5)	0.9	x(8)	x(8)	6 829	x(11)	x(11)	94
Iceland	1-3	0-3	0.7	1.1	1.8	16 683	11 517	13 074	89	85	87
Ireland	a	1	a	0.1	0.1	a	6 579	6 579	a	100	100
Israel	3	3	0.3	0.8	1.1	4 475	4 432	4 443	15	90	70
Italy	a	3	a	0.5	0.5	a	6 468	6 468	a	84	84
Japan	a	1-3	a	0.2	0.2	a	6 572	6 572	a	46	46
Korea	1-3	1-3	m	0.5	m	m	7 461	m	m	83	m
Latvia	1-3	1-4	a	0.9	0.9	a	5 352	5 352	a	98	98
Luxembourg	a	1-2	a	0.6	0.6	a	21 210	21 210	a	99	99
Mexico	3	2-3	x(5)	x(5)	0.6	x(8)	x(8)	2 668	x(11)	x(11)	83
Netherlands	a	1-3	a	0.4	0.4	a	8 482	8 482	a	89	89
New Zealand	0-3	2	0.4	0.6	0.9	14 050	12 178	12 882	73	87	81
Norway	2	3	0.9	0.9	1.8	24 564	13 650	17 468	85	85	85
Poland	a	3-4	a	0.8	0.8	a	6 211	6 211	a	79	79
Portugal	a	3	a	0.6	0.6	a	6 349	6 349	a	66	66
Slovak Republic	a	3-4	a	0.6	0.6	a	5 596	5 596	a	86	86
Slovenia	2	3	0.4	0.8	1.3	12 587	8 839	9 913	78	78	78
Spain	3	3	0.2	0.6	0.8	8 121	6 224	6 674	57	83	75
Sweden	0-2	3-4	0.6	1.4	1.9	15 473	13 198	13 796	94	95	94
Switzerland <sup>3,4</sup>	a	2	a	0.2	0.2	a	6 171	6 171	a	m	m
Turkey	1-2	1-3	x(5)	x(5)	0.2	x(8)	x(8)	2 395	x(11)	x(11)	66
United Kingdom	2	1-2	0.1	0.4	0.5	11 605	9 586	9 849	40	48	47
United States	a	1-3	m	0.4	m	m	10 427	m	m	74	m
OECD average			m	0.6	0.8	13 536	8 723	8 858	71	83	82
EU22 average			m	0.6	0.8	13 453	8 551	9 069	73	86	85
<b>Partners</b>											
Argentina	m	m	x(5)	x(5)	0.6	x(8)	x(8)	2 747	x(11)	x(11)	78
Brazil <sup>3</sup>	3	2	x(5)	x(5)	0.6	x(8)	x(8)	3 768	m	m	m
China	m	m	m	m	m	m	m	m	m	m	m
Colombia <sup>2</sup>	3	1-3	0.1	0.4	0.5	m	1 011	m	12	71	54
Costa Rica <sup>2,3</sup>	m	m	m	m	m	x(8)	x(8)	4 011	m	m	m
India	m	m	a	m	m	a	m	m	a	m	m
Indonesia <sup>2,3</sup>	m	m	x(5)	x(5)	0.1	x(8)	x(8)	2 261	x(11)	x(11)	89
Lithuania	1-2	1-4	0.2	0.6	0.8	6 300	4 973	5 191	80	83	83
Russian Federation	2	3	x(5)	x(5)	1.0	x(8)	x(8)	5 541	x(11)	x(11)	90
Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m
South Africa <sup>3,5</sup>	m	m	a	m	m	a	824	824	a	m	m
G20 average			m	m	m	m	m	m	m	m	m

1. Theoretical duration of early childhood educational development refers to the Flemish Community.

2. Year of reference 2015.


3. Public institutions only for annual expenditure by educational institutions per student.

4. Public expenditure only for expenditure on educational institutions as a percentage of GDP.

5. Year of reference 2013.

Source: OECD (2017). See Source section for more information and Annex 3 for notes ([www.oecd.org/education/education-at-a-glance-19991487.htm](http://www.oecd.org/education/education-at-a-glance-19991487.htm)).

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StatLink  <http://dx.doi.org/10.1787/888933560928>



**From:**  
**Education at a Glance 2017**  
OECD Indicators

**Access the complete publication at:**  
<https://doi.org/10.1787/eag-2017-en>

**Please cite this chapter as:**

OECD (2017), "Indicator C2 How do early childhood education systems differ around the world?", in *Education at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/eag-2017-24-en>

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