

Chapter 2. Standards and governance for quality early childhood education and care

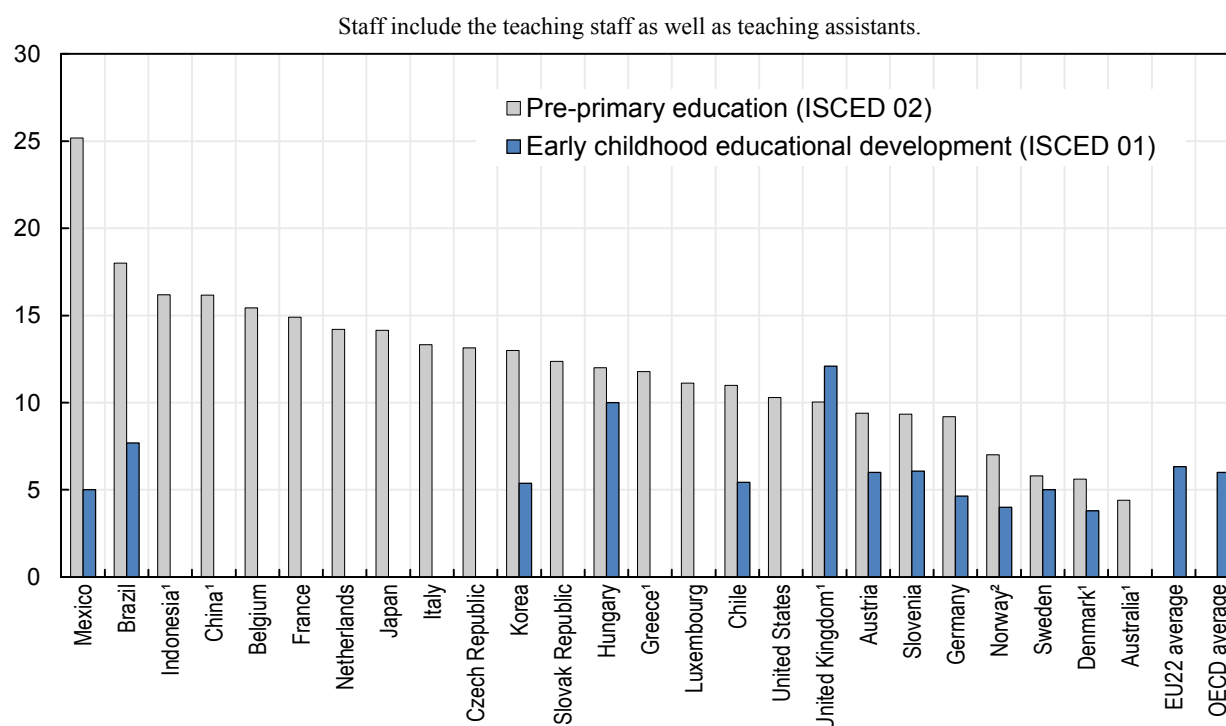
Aspects of governance and standards are among the most commonly used regulations for improving early childhood education and care (ECEC) quality. This chapter provides an overview of the evidence linking structural mechanisms in standards and governance to staff-child interactions, by integrating the evidence for centres for children aged 3 to 5, and for children aged 0 to 2, including family daycare settings. Structural characteristics, such as ratio of children to staff, group sizes or physical location of the centre, affect the environment for staff and children, and thereby influence staff-child relationships established in ECEC settings and the support to children's development. Other aspects of governance, such as funding and classroom composition are also likely to play a role. The evidence on the benefits of longer hours of provision in general and licensing in family daycare remains largely inconclusive.

Introduction

Policy makers use many structural indicators to determine the quality of early childhood education and care (ECEC) centres, including aspects of governance and standards. Structural aspects, such as the ratio of children to adults, group sizes, funding structure of the organisation (public vs. private) or physical location of the centre (urban vs. rural, in a school or in a daycare centre), are likely to affect the working conditions for staff, and therefore influence the relationships established in ECEC settings between staff and children.

Child-staff ratios and group size are the most commonly studied aspects, and also the most commonly used regulations for improving ECEC quality. Based on the existing evidence from the schooling sector, as well as developmental and educational theory highlighting the importance of individualised pedagogy, particularly for the youngest children, many countries have implemented policies to reduce group size in early childhood development programmes (ISCED 01), and a trend is observed of smaller child-staff ratios in OECD countries in ISCED 01, compared to pre-primary education (ISCED 02) (see Figure 2.1) (OECD, 2017a_[10]).

Figure 2.1. Child-staff ratios in early childhood education and care (ISCED 0) (2015).



Notes: 1. Year of reference is 2014. 2. Including early childhood development (ISCED 01). Countries are ranked in descending order of child-staff ratios in pre-primary education, including early childhood development (ISCED 01). Data for Belgium for ISCED 02 exclude students and teachers from the German-speaking Community. See Education at a Glance 2017 Annex 3 for further notes (www.oecd.org/education/education-at-a-glance-19991487.htm). Data for the Flemish Community of Belgium were available for ISCED 01 in 2015. However, due to the recent policy transition, no data were reported at this stage.

Source: (OECD, 2017d_[95]).

Countries organise the funding structure for ECEC in different ways. Some countries have a public sector that provides universal access from a certain age, such as the European Nordic countries; whereas in other countries, the private sector chiefly runs ECEC settings, or there is a mix of the two. Private settings usually are more common for the youngest children. In this report, settings were considered public if they received funding from different public agencies at the state, city or country level.

The type of programme children attend determines the number of hours they spend in ECEC. Full-day programmes tend to be five to six hours a day, five days a week, whereas part-day programmes tend to involve a reduced number of hours and/or days. Full-day programmes are generally assumed to be better for children's development and learning because longer days give staff the opportunity to develop a more complete and multifaceted programme, and children can be more involved in planning of activities as well as in more process-oriented activities. A full-day programme during the last year of ECEC can ease the transition to primary school pedagogically, i.e. by allowing a more relaxed pace in ECEC and adequate time to prepare for the transition (Winters, Saylor and Phillips, 2003^[96]). It is also assumed that full-day programmes are particularly beneficial for economically disadvantaged children, as has been observed, for example, in Ontario (Zvoch, 2009^[97]).

Moreover, countries adopt different policies in addressing educational inequalities. Some countries apply targeted measures, specifically seeking to enrol children from disadvantaged backgrounds; whereas others choose to expand universal provision for all children, or both. Consequently, selection effects in the usage of provisions exist, leading to differences in the composition of class- and playrooms, as well as potential differences in quality (Freitas, Shelton and Tudge, 2008^[98]; Slot, Lerkkanen and Leseman, 2015^[99]).

Summary of findings

On the topic of ECEC settings' quality standards and governance, the majority of the evidence summarised demonstrated that smaller ratios and group sizes were associated with positive staff-child relationships across all types of centres (i.e. the evidence for family daycare settings is less clear than for centre-based). Despite the somewhat consistent links between ratios and group sizes and staff-child interactions, these structural indicators do not seem to be directly linked to child development and learning. The review of the literature indicated a mixed pattern of associations both across and within countries, and the meta-analysis conducted for this report demonstrated that there was no relationship between child-staff ratios and emerging academic skills, i.e. early literacy and early numeracy.

Other mechanisms, such as funding of ECEC settings, the physical location of the centre and intensity of daily services, were based on fewer studies, and returned less consistent results. Public centres for children between 3 and 6 seemed to provide better staff-child interactions than private centres; however, associations varied across countries. Moreover, although not-for-profit centres for children under 3 scored higher on structural indicators, such as health, safety and furnishings, when compared to for-profit centres, these structural differences appeared to have no implications for staff-child interactions.

The physical location of a preschool might also be related to process quality. The literature review indicated that higher process quality was observed in preschools located in schools than in preschools situated outside school grounds or in independently functioning centres. Although the evidence for this mechanism is consistent and from

multiple countries, the number of studies is limited. Moreover, the opposite pattern was also observed for centres for children under 3.

The meta-analysis conducted for this report demonstrated that intensity of daily service is not consistently related to the quality of staff-child interactions. The association varied within and across countries, and depended on how the interactions between staff and children were observed and documented in the class- or playroom.

In terms of group composition, children in class- or playrooms with a larger percentage of immigrant or bilingual children seemed to experience a lower quality of staff-child interactions, particularly for centres for children 3 to 5 years old, and family daycare settings. Classroom composition was shown to affect children's development as well, i.e. children from disadvantaged backgrounds attending preschools, with a larger percentage of other children with similarly disadvantaged backgrounds, presented lower language and literacy skills.

Finally, the literature shows little and inconsistent empirical evidence supporting the added value of licensing and regulations in determining the quality of staff-child interactions in family day care. The evidence available was also limited to the US. Other aspects of standards and governance seem to be under-researched for family daycare.

This chapter provides an overview of the evidence linking structural mechanisms in standards and governance to staff-child interactions, as well as child development, learning and well-being. To build a solid knowledge base on this theme, it draws on a literature review and meta-analysis that update conceptual knowledge and the empirical evidence base for the strength of these associations, while keeping a cross-national focus. The chapter first summarises these two pieces of research, to discuss the importance of these mechanisms for process quality in ECEC. One mechanism is examined at a time, and integrates the evidence for centres for children aged 3 to 5, centres for children under the age of 3, and finally family daycare settings.

What does research tell us about the importance of quality standards and governance for quality staff-child interactions in early childhood education and care?

Smaller ratios and group sizes support positive staff-child relationships in centres for children of 3 to 6 in most studies

The majority of studies generally indicated that in centres for children aged 3 to 5, smaller group sizes and child-staff ratios were related to better staff-child interactions. This was confirmed by the meta-analysis conducted for this report. However, some studies reported no relationship between these governance indicators and process quality, particularly for overall group size. Considerable variation in reported group sizes and child-staff ratios in the summarised studies may partially account for the variation in results (see Table 2.1).

Table 2.1. Diversity in child-staff ratios and group sizes in reported studies for centres for children aged 3 to 5.

Country/Region	Study	Child-staff ratio	Group size
US	Burchinal et al, 2002	53% compliance with 7:1 for preschool	
China	Hu et al (2016)	18	
US	Mashburn et al, 2008, 2009	7	18
US	Philips et al., 2000	93% compliance with 10:1 regulation in MA, 83% compliance with 10:1 regulation in VI, 87% compliance with 15:1 regulation in GA	
US	Phillipsen et al, 1997	Per state (non-profit programs / for-profit): California: 7 / 9 Colorado: 7 / 7 Connecticut: 6 / 7 North Carolina: 9 / 11	Per state: (non-profit programs / for-profit): California: 15 / 16 Colorado: 13 / 16 Connecticut: 13 / 13 North Carolina: 14 / 15
US	Pianta et al., 2005	7	
Denmark	Slot et al., 2017b	8 or less: 16% of children 9-10: 37% of children 11-12: 33% of children 13-14: 8% of children 15 or more: 6.5% of children	
Spain	Sandstrom, 2012	20	25
Europe and North America	Vermeer et al., 2016	8.6	15
Spain and Germany	Cryer et al., 1999		24 (Spain) 20 (Germany)
Germany	Kuger et al (2016)	13	
Netherlands	Vermeer et al (2010):	6	
Spain	Vermeer et al (2010):	15	
US	Dennis et al (2013)	7	
US	Howes et al (2008)	9	
US	Hatfield et al (2013)	7	
US	Howes et al, (2008)	9	18
US	Blau, 1999		6
US	Burchinal et al, 2011	16	
US	Coley et al., 2016	6	
US	Bowne et al., 2017	9	17

Note: Averages of ratios and group sizes in each study were rounded up to the unit level. In (Philips et al., 2000_[100]) only the following cities participated in the study: Boston (Massachusetts, MA), Virginia and Atlanta (Georgia, GA). In (Phillipsen et al., 1997_[101]) only specific cities or areas were part of the study the four states (California, Colorado, Connecticut, and North Carolina). (Vermeer et al., 2016_[50]) was a meta-analysis of 17 studies. (Bowne et al., 2017_[102]) was a meta-analysis of 38 rigorous program evaluation studies.

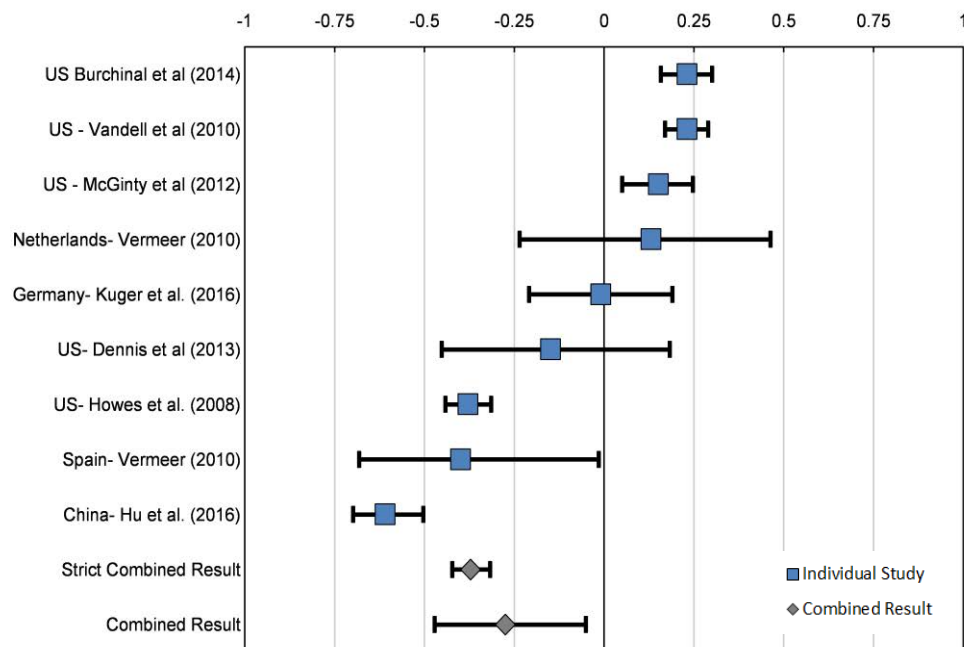
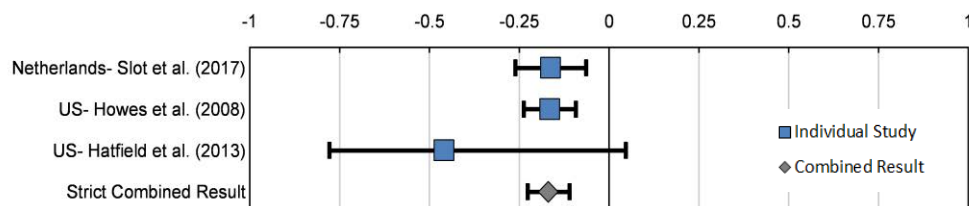
In examining studies from individual countries, a smaller number of children per ECEC staff and a smaller number of children overall seem to be associated with more responsive, warm and positive staff-child relations in the United States (Burchinal et al., 2002_[103]), as well as higher overall process quality in the United States, China and Portugal (Burchinal et al., 2002_[103]; Hu et al., 2016a_[104]; Mashburn et al., 2008_[44]; Philips et al., 2000_[100]; Phillipsen et al., 1997_[101]). Other studies have found no evidence of an association between child-staff ratio and process quality in countries such as Denmark, Spain and the US (Pianta et al., 2005_[31]; Sandstrom, 2012_[105]; Slot et al., 2017b_[63]) or group size and process quality in Denmark (Sandstrom, 2012_[105]).

A previous meta-analysis of 17 studies from Europe and North America showed similar results, with a prevalence of a positive association between child-staff ratio and process quality generally indicating that fewer children per caregiver was associated with higher quality. However, there was no significant relation between group size and process quality (as measured with the Environment Rating Scale, or ERS (Vermeer et al., 2016_[50])). The same study also reported finding no significant differences in the mean group size and child-staff ratio across the group of countries. The mean group size across countries was around 15, with a range of 9.1 to 30.0, and the child-staff ratio was on average 8.60, with a range of 3.1 to 25.0.

A cross-country comparison study also examined the same associations and revealed inconsistent patterns across countries, with positive relations of small group sizes and a favourable ratio to process quality in some countries, but not in others (Cryer et al., 1999_[106]). The findings revealed that a smaller child-to-teacher ratio was related to higher process quality in Germany and the US, but not in Portugal and Spain. In addition, a negative relation was found between group size and overall process quality for Spain, but, remarkably, a positive relation was found for Germany. Note that the average group size in Spain was much larger and showed stronger variation than in Germany (with a mean group size of 23.64 and a standard deviation of 6.38 and a mean of 20.42 and standard deviation of 5.48 respectively), which may explain these contradictory results.

The meta-analysis conducted for this report demonstrated that the quality of staff-child interactions was significantly higher in groups with a lower number of children per ECEC staff (see Figure 2.2).

This was true for studies looking at an overall interactions index between the ECEC staff and the group, as well as an aggregated score of staff-child interactions, including staff emotional, instructional and organisation interactions with the children (see Box 2.1). It is also important to note that in the meta-analysis conducted for this report, the studies summarised referred only to the interactions between the lead teacher and the children, and not between children and all adults in the play- or classroom.

Figure 2.2. Lower child-staff ratios are associated with positive staff-child interactions.**Panel A. Using a global score of staff-child interactions.****Panel B. Based on a combined score of staff emotional, instructional, and organisational staff-child interactions.**

Note: Effect sizes are depicted as either blue squares for individual studies or grey diamonds for combined results, each with black lines spanning the lower limit and the upper limit of the 95% confidence interval for each estimated effect. Individual studies, labelled here with the information for country of study, author, and the year of study publication, refer to original studies that provided effect size measures entering into each meta-analysis. These measures are then combined into a summary effect size, which is the average association between two variables. See Box 2.1 for more details on how to interpret the charts.

Source: (von Suchodoletz et al., 2017_[17]).

Box 2.1. Interpreting the meta-analysis charts

The meta-analysis charts report associations in the form of standardised effect sizes. For the current analysis, effect size is defined as the degree and direction of association, or correlation, between two variables (e.g. between indicators of structural and process quality, and between indicators of structural/process quality and child development and learning).

Effect sizes reported are standardised, such that a measure ranges between -1 to 1. An effect size measure closer to 0 means little association between the two variables represented in the chart, while an effect size closer to either -1 or 1 (i.e. larger absolute value) would indicate stronger association between the variables. An effect size of negative value would mean that an increase in the measure of one variable is associated with a decrease in the measure of the other variable, while an effect size of positive value would mean that both variables increase or decrease in same direction.

Depending on which statistical assumption underlies the process of averaging, a meta-analysis can produce either Combined Result (based on a “fixed-effect model”) or Strict Combined Result (based on a “random-effects model”). The main difference between the two in the present meta-analysis is that the former gives larger weighting to the individual studies based on larger sample size.

Because of the diversity of measures used in research to assess process quality, meta-analysis results are examined in terms of three indicators:

- Global score of staff-child interactions: an overall index of the interactions between the ECEC staff and the group, irrespective of the type or subdomains of interaction, used when the studies only reported one single score to describe the quality of interactions;
- Combined score of staff-child interactions: an aggregate score of staff-child interactions, including the staff’s positive emotional, instructional, and organisation interactions with children, generally based on a set of domain-specific scores reported in the studies.
- Developmental and educational activities: an aggregate score of the exposure and/or quality of developmental and educational activities provided by staff.

For child data, meta-analysis results are examined in terms of two indicators:

- Emerging academic skills: An aggregate score of early numeracy and literacy skills.
- Combined score of behavioural and social-emotional indicators: an aggregate score of social and behavioural skills, including behaviour regulation, executive function, behavioural problems, and social competence.

Child-staff ratios and group size do not appear to be consistently linked to child development and learning

Despite the largely consistent links between ratios and group sizes and process quality, these structural indicators do not seem to be consistently linked to child development and learning. A review of the literature indicates a mixed pattern of associations both across and within countries.

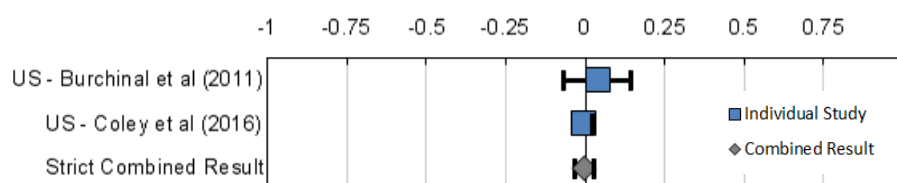
Based on a large-scale survey study conducted in the United States, Blau (1999^[107]) found that smaller group size in preschool was related to better vocabulary skills for children across preschool and elementary school, and higher reading skills across elementary school from age 5 years onwards. The average group size was six and pertained to different centre-based and home-based care arrangements. Another US study only reported a significant negative association between group size and literacy skills for groups larger than 20 children, but no associations were found for language and cognitive skills (Mashburn et al., 2008^[44]). Similar patterns were found in Germany and other US studies, demonstrating that smaller group size in preschool was related to better literacy or vocabulary skills (Ebert et al., 2013^[108]; Mashburn et al., 2008^[44]).

However, other US studies and a cross-national study have shown that either group size and/or child-staff ratio were not related to children's language and literacy skills (Howes et al., 2008^[34]; Mashburn et al., 2008^[44]; Mashburn et al., 2009^[109]; Montie, Xiang and Schweinhart, 2006^[110]). The two US studies reported an average child-staff ratio ranging from 7 to 8, and an average group size of 18. The cross-national study reported an average group size of 20 children, and a range from 4 to 49 children.

The meta-analysis conducted for this report indicated little to no relationship between child-staff ratios and emerging academic skills (i.e. early literacy and early numeracy; see Figure 2.3. However, since the findings are based on only two US studies, this association is yet to be confirmed by more research from different countries.

Figure 2.3. No consistent evidence of association between child-staff ratios and emerging academic skills

Findings based exclusively on studies from the United States



Note: Effect sizes are depicted as either blue squares for individual studies or grey diamonds for combined results, each with black lines spanning the lower limit and the upper limit of the 95% confidence interval for each estimated effect. Individual studies, labelled here with the information for country of study, author, and the year of study publication, refer to original studies that provided effect size measures entering into each meta-analysis. These measures are then combined into a summary effect size, which is the average association between two variables. See Box 2.1 for more details on how to interpret the charts.

Source: (von Suchodoletz et al., 2017^[17]).

The meta-analysis also demonstrated that these associations did not vary according to the geographical location of the studies included, defined as from the United States as

compared to studies from outside the United States (i.e. combined across all other countries).

A recent meta-analysis looking at all US ECEC programme evaluation studies for centres for 3- to 6-year-olds, published between 1960 and 2007, presented a potential explanation for these mixed results; namely that rather than assuming a continuous increase or decrease of skills per additional child in the group or child-per-staff, the relations between group size and child-staff ratios with children's cognitive development and achievement are nonlinear (Bowne et al., 2017_[102]). In summary, ECEC structural conditions for maximum child development and learning improved as ratios and group sizes approached an optimum of 7.5 children to 1 adult and a maximum group size of 15 children, and then decreased. The results were less clear for children's socio-emotional outcomes, due to the small sample size.

A possible reason for these inconsistent findings could be that structural characteristics within governance are *indirectly* related to child development and learning, influencing child development through process quality. A large-scale US study (NICHD Early Child Care Research Network, 2002_[62]) found evidence of these indirect paths, namely that child-staff ratios affected staff-child interactions, which in turn affected children's cognitive development. These indirect effects were smaller than the direct effects of staff-child interactions, particularly when compared with aspects of emotionally supportive staff-child interactions on child development, well-being and learning reported in the same study, which were larger. More evidence is necessary from cross-national studies to confirm these patterns.

Smaller ratios and group sizes also matter for positive staff-child relationships for younger children in centres and family day care, but fewer studies have been conducted

Concerning evidence related to centres for children under the age of 3, most studies showed that a smaller group size and fewer children per staff member were related to higher-quality staff-child interactions, although there were a few studies showing null associations.

Smaller group size and child-staff ratios were related to better staff-child interactions in the Flemish Community in Belgium, the Netherlands, in Portugal and the US (Barros and Aguiar, 2010_[111]; Barros et al., 2016_[39]; Deynoot-Schaub and Riksen-Walraven, 2005_[112]; Hulpia et al., 2016_[73]; Jamison et al., 2014_[65]; Thomason and La Paro, 2009_[38]; Phillipsen et al., 1997_[101]). This particularly concerned emotionally supportive interactions with children.

However, two US studies and one Portuguese study found no associations between group size and child-staff ratios with observed classroom quality (Pessanha, Aguiar and Bairrão, 2007_[113]; Vogel et al., 2015a_[66]; Vogel et al., 2015b_[67]). Both US studies concerned settings that were part of the targeted Early Head Start programme, with an average group size of 6 children (well within the maximum group size of 8 children) and an average child-staff ratio of 2.7 (which was also within the state regulation of 4 children).

One Dutch study found no associations between observed group size and staff-child interactions, whereas child-staff ratio was related to staff-child interactions (Slot et al., 2017b_[63]). A smaller ratio was associated with higher *emotional* support and support for children's development and learning, with a slightly stronger effect for the latter (Slot

et al., 2017b_[63]). In this study, the average group size was 10, ranging from 1 to 25, and the observed child-staff ratio was 5, ranging from 0 to 16.

Another Dutch study reported effects of both group size and child-staff ratio in staff-child interactions. In an experimental study in the Netherlands, two structured play situations were observed in which the number of children was manipulated (de Schipper, Riksen-Walraven and Geurts, 2006_[114]). The quality of interactions was higher in the play situation with three children compared to the one with five children. Moreover, the effect of smaller ratios was stronger for younger children. In this study, children's age showed large variation and ranged from 10 months up to almost 4 years of age.

Together, the findings seem to more strongly support a smaller child-staff ratio, rather than just a smaller group size. However, it is important to note that the partially inconsistent findings of these two studies may be a function of different group sizes and ratios (see Table 2.2), but also methodology (i.e. the difference between an observational and experimental study).

Table 2.2. Diversity in child-staff ratios and group sizes in reported studies for centres for children aged 0 to 2.

	Study	Children-to-staff ratio	Group size
Portugal	Barros and Aguiar, 2010	7	13
Portugal	Barros et al., 2016	3	5
Netherlands	Deynoot-Schaub and Riksen-Walraven, 2005	4	9
Flemish Community in Belgium	Hulpia et al., 2016	Infants: 2-13 Toddlers: 1-14	Infants: 2-20 Toddlers: 1-23
US	Jamison et al., 2014	2.5	6
US	Thomason and La Paro, 2009	83% met recommendation 6:1 for toddler child care	90% met recommendation 12 for toddler child care
US	Phillipsen et al, 1997	Per state (non-profit programs / for-profit): California: 4 / 3 Colorado: 4 / 4 Connecticut: 3 / 3 North Carolina: 5 / 6	Per state (non-profit programs / for-profit): California: m / 9 Colorado: 6 / 7 Connecticut: 8 / 10 North Carolina: 7 / 9
Portugal	Pessanha, Aguiar and Bairrão, 2007	7	16
US	Vogel et al. 2015a, 2015b	3	6
Netherlands	Slot et al., 2017b	5	10
Netherlands	de Schipper, Riksen-Walraven and Geurts, 2006	3 and 5	3 and 5
Basque region in Spain and the Netherlands	Vermeer et al., 2010	Basque region: 15 Netherlands: 6	Basque region: 15 Netherlands: 12
US	NICHD Early Child Care Research Network, 2000	15 Months: 3 24 Months: 3 36 Months: 5	15 Months: 4 24 Months: 5 36 Months: 7

Note: Averages of ratios and group sizes in each study were rounded up to the unit level. In (Phillipsen et al., 1997_[101]) only specific cities or areas were part of the study the four states (California, Colorado, Connecticut, and North Carolina). In (de Schipper, Riksen-Walraven and Geurts, 2006_[114]), authors manipulated child-staff ratios and group sizes experimentally.

A comparison between the Basque region in Spain and the Netherlands showed that group size was negatively related to staff-child interactions in the Basque region, but unrelated to interactions in the Netherlands (Vermeer et al., 2010^[115]). The average group size in the Basque region was significantly higher, with 15 compared to 12 in the Netherlands, with comparatively larger child-staff ratios (15 and 6 respectively for the Basque region and the Netherlands), which could explain these differences.

The research examining the relations of child-staff ratio with staff-child interactions in family daycare settings is mixed and only pertains to one to three studies. A possible explanation could be that considering the overall small group size in family daycare, other mechanisms are more salient in providing high-quality care. However, it is important to note that there is considerable variation across studies and countries (see Table 2.3). A cross-national comparison of the family daycare settings (Boogaard, Bollen and Dijkers, 2014^[78]), demonstrated considerable variation in regulated group sizes in family daycare settings across the Flemish Community of Belgium (up to 8 children), the United Kingdom and the Netherlands (6), Denmark, Germany and Switzerland (5), and France (2 to 4 children). Studies from the United States reported an average group size of 6 children (Burchinal, Howes and Kontos, 2002^[76]).

Table 2.3. Diversity in child-staff ratios and group sizes in reported studies for family daycare settings.

Country	Study	Child-staff ratio	Group size
US	Colwell et al., 2013	For 2-year-olds: 3 For 4-year-olds: 6	For 2-year-olds: 4 For 4-year-olds: 15
US	Burchinal, Howes and Kontos, 2002	-	6
Flemish Comm. (Belgium)	Hulpia et al., 2016	5	5

Note: Averages of ratios and group sizes in each study were rounded up to the unit level.

One study in the United States showed that group size for family daycare for children aged 2 and 4 was negatively related to staff-child interactions, with weak associations (Colwell et al., 2013^[116]), but no relations were found for child-staff ratio. Also, another US study for family daycare for children aged 2 to 5 revealed no relations of child-staff ratio with process quality, concerning both overall environmental process quality and sensitive caregiving (Burchinal, Howes and Kontos, 2002^[76]).

A study from the Flemish Community in Belgium also found negative relations between group size and the overall environmental quality of the provision with small-to-medium sized associations (Hulpia et al., 2016^[73]). This study reported no associations between group size and the quality of interactions for infants and toddlers based on staff-child interactions (as measured by the CLASS), but there were positive relations between child-staff ratio and quality of interactions for toddlers (Hulpia et al., 2016^[73]). The average group size in home-based care was 5, ranging from 1 to 10, while the statutory maximum group size is 8 (i.e. only two groups had 10 children; (Daems et al., 2016^[117]). The mean child-staff ratio was 5, ranging from 1 to 10 children.

The quality of the relationships in centres seems to differ across private and public providers, in tandem with other structural characteristics

The literature review demonstrated that public centres for children between 3 and 6 seem to provide higher process quality (as measured with the ECERS) than private settings, in countries such as China, Portugal, and the US (Coley et al., 2016^[77]; Hu et al., 2016a^[104]; Slot, Lerkkanen and Leseman, 2015^[99]). However, in Spain, no significant differences were found between public or private preschools (Sandstrom, 2012^[105]).

In US centres for children under the age of 3, non-profit provision scored higher on a number of quality features, including health, safety and furnishings and aspects related to provisions for staff, when compared to for-profit centres (King et al., 2016^[74]). However, in comparison to what was found for centres for children 3 to 6 years old, these structural differences had no implication for staff-child interactions in the United States or Portugal centres for under 3s (Barros and Aguiar, 2010^[111]; King et al., 2016^[74]).

A possible reason for these inconsistent findings could be the interrelatedness of these structural features with other features, such as staff education or monitoring provisions. For instance, in the United States, staff working in the public sector were on average more highly educated (Coley et al., 2016^[77]; Fuligni et al., 2009^[79]) and were also subject to less monitoring (Fuligni et al., 2009^[79]) than staff in private settings. In China, staff in public settings tended to be more highly educated and earned higher salaries (Hu et al., 2016a^[104]).¹ In Portugal, quality was higher in classrooms with higher, unfavourable child-staff ratios, and lower with more favourable ratios, but only in the public sector (Slot, Lerkkanen and Leseman, 2015^[99]). For the private sector, no differences in process staff-child interactions were found related to the ratio. This seems to point to a compensating factor of working in the public sector. A possible explanation suggested by the authors was that the attractive working conditions in the public sector attracted more motivated staff.

The physical location of centres may influence staff practices

The physical location of a preschool might be related to better staff-child interactions. The literature review indicated that higher-quality staff-child interactions were observed in preschools located in schools than in preschools situated outside the school grounds or in independently functioning centres. Although the evidence for this mechanism is consistent and from multiple countries, the number of studies is limited.

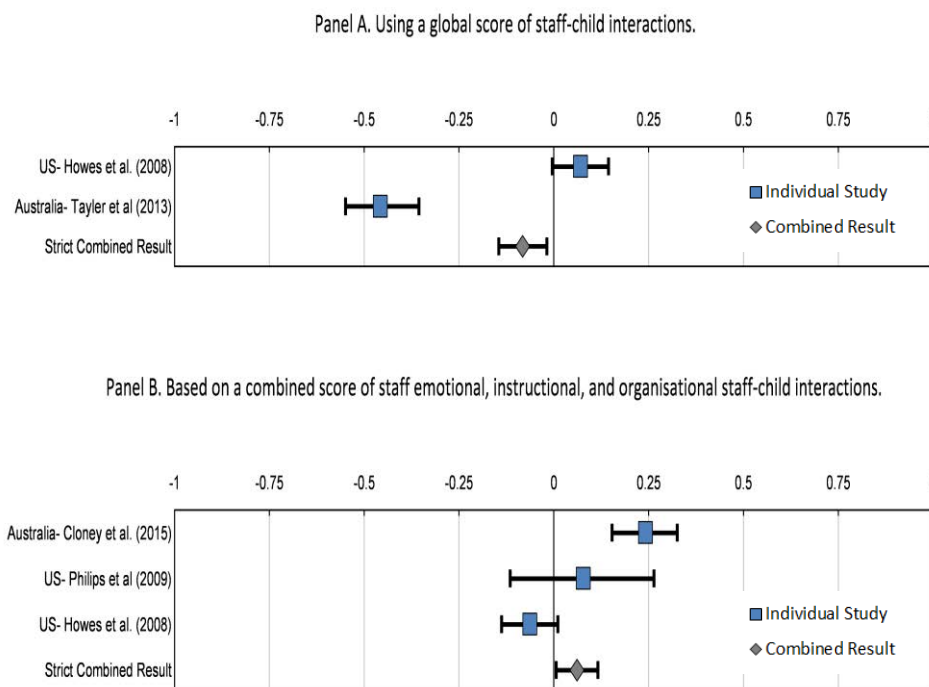
This pattern was observed in the United States and Finland in centres for children 3 to 6, where higher-quality staff-child interactions were found for preschools located in schools (Pianta et al., 2005^[31]; Slot, Lerkkanen and Leseman, 2015^[99]). Staff working in classrooms situated within elementary schools are likely to be more exposed to the curriculum, methods and culture of elementary school, through contact and perhaps collaboration with elementary school staff. This might result in care and education practices with a stronger educational orientation, i.e. practices that more strongly resemble those of elementary schools, than independently operated ECEC centres. For example, research has shown that ECEC classrooms located in schools provide less free play and more whole group instruction (Pianta et al., 2005^[31]). Staff working in ECEC centres that are part of a school may differ on other aspects as well. For instance, (Clifford et al., 2005^[118]) showed that staff working in classrooms located in schools had higher education levels and were paid more compared to staff working in independently run centres.

Higher-quality staff-child interactions were also observed in centres located in urban settings (as opposed to rural settings) for children 3 to 6, but the pattern was the opposite for centres offering services for children under 3. For example, in Portugal, staff working in non-urban centres showed more positive and sensitive interactions with children than staff working in urban centres (Barros et al., 2016^[39]). The authors hypothesised that staff working in rural or suburban areas might have higher life satisfaction and lower levels of stress, which might have resulted in better staff-child interactions. However, there is some evidence suggesting a lower quality of ECEC for children 3 to 6 in rural areas in China and the US (Hu et al., 2016a^[104]; Maher, Frestedt and Grace, 2008^[119]).

It is unclear whether the intensity of daily service matters for staff-child interactions

The meta-analysis conducted for this report demonstrated that the quality of staff-child interactions was inconsistently related to the intensity of daily service, and the association between whether the centre provided full-time or part-time service and staff-child interactions varied depending on how the interactions between staff and children were observed and documented. When a global score of staff-child interactions was used, full-day programmes were associated with lower average quality scores, when compared with half-day programmes. In contrast, when an aggregated score of staff emotional, instructional, and organisation interactions was used, full-day programmes were associated with higher-quality staff-child interactions than half-day programmes. This inconsistency is reflected in Figure 2.4. Further to the inconsistency of the patterns, studies from the same country included in this meta-analysis reflected opposite associations for two countries (Australia and the United States, see Figure 2.4).

With regard to centres for children under the age of 3, evidence from the Netherlands based on observations in 276 classrooms in 2011 indicated that there appeared to be no differences in the emotional support provided by staff between full-time daycare centres and half-time preschool provisions, but half-time preschools scored higher in supporting children's development and learning (Slot et al., 2017b^[63]; 2017c^[72]). These differences may be based on other existing regulations. For example, in the Netherlands, preschools are part of a targeted educational policy to combat early disparities in disadvantaged children, and therefore may be more likely to adopt a stronger educational orientation than day care centres. Moreover, full-day daycare settings offer services to children from birth in mixed age groups of infants and toddlers, whereas preschools enrol 2- and 3-year-old children in more homogeneous groups.

Figure 2.4. Mixed associations between intensity of daily service and staff-child interactions.

Note: Effect sizes are depicted as either blue squares for individual studies or grey diamonds for combined results, each with black lines spanning the lower limit and the upper limit of the 95% confidence interval for each estimated effect. Individual studies, labelled here with the information for country of study, author, and the year of study publication, refer to original studies that provided effect size measures entering into each meta-analysis. These measures are then combined into a summary effect size, which is the average association between two variables. See Box 2.1 for more details on how to interpret the charts.

Source: (von Suchodoletz et al., 2017_[17]).

Children in class- or playrooms with a larger percentage of immigrant or bilingual children experience lower quality

Providing ECEC to children from disadvantaged backgrounds to allow them to catch up has been a key motivation for ECEC investments. And the quality of services is crucial for ensuring that ECEC benefits those who need it most. However, research finds lower quality staff-child interactions in groups with a larger percentage of immigrant or bilingual children in the ECEC group in centres for children 3 to 6. In Danish (Slot et al., 2017b_[63]), German (Kuger et al., 2015_[120]; Leu and Schelle, 2009_[27]; Lehl, Kuger and Anders, 2014_[121]; Slot, Lerkkanen and Leseman, 2015_[99]), and US classrooms (LoCassale-Crouch et al., 2007_[122]; Tonyan and Howes, 2003_[123]) staff-child interactions were of poorer quality in classrooms with higher proportions of ethnic minority or multilingual children. Only one study from the US showed that instructional process quality was not related to the number of children with limited English proficiency (Justice et al., 2008_[124]).

The evidence from research examining class- or playgroup composition in centres for children under the age of 3 is more mixed. Emotional and educational support was lower in class- or playrooms in the Flemish Community of Belgium where a higher percentage of children spoke another home language (Hulpia et al., 2016^[73]). This association was found for toddler care centres, but not services for infants. However, in Dutch centres, higher educational support was observed in class or playrooms with a higher share of non-Dutch speaking children (Slot et al., 2017a^[36]). This positive effect is likely to be a function of the targeted policy in place (Slot et al., 2017a^[36]). In line with this targeted policy, disadvantaged children, including children speaking another home language, are more often enrolled in preschools, rather than day care settings, and provided with greater support for learning (Slot et al., 2015^[40]).

In the family day care literature, lower environmental quality (in terms of the basic furnishings and equipment) and lower caregiver abilities to adapt objects, play and learning activities according to children's interests and needs was found in playgroups with more home language diversity (Hulpia et al., 2016^[73]).

Moreover, a number of studies have examined how the mean age in the classroom is related to staff-child interactions, and found mixed results (Early et al., 2010^[125]; Lehl, Kuger and Anders, 2014^[121]; Leseman et al., 2017^[126]; Wishard et al., 2003^[127]). Mocan et al. (1995^[128]) found no relations between mean age in the classroom and staff-child interactions, but a recent study by Kuger et al. (2015^[120]) showed that staff-child interactions were better in classrooms with, on average, older children.

Children in class- or playrooms with a larger percentage of immigrant or bilingual children tend to demonstrate lower on development and learning skills

Classroom composition has also been shown to affect children's development. For instance, a German study demonstrated that preschoolers' vocabulary skills were lower and showed less growth over time in classrooms with a larger share of immigrant children, when compared to classrooms with a smaller percentage (Ebert et al., 2013^[108]). Likewise, other studies from the Netherlands and the US have shown that children from disadvantaged backgrounds attending preschools with a larger percentage of other children with similarly disadvantaged backgrounds made less progress in their language skills (Schechter and Bye, 2007^[129]) or literacy development (de Haan et al., 2013^[130]) than their counterparts in more socio-economically mixed preschool classrooms.

Classroom composition may be indirectly related to child development and learning, influencing child development through staff-child interactions. A large-scale Danish study involving over 3 000 preschool children and 400 staff showed that process quality, specifically emotional support and classroom organisation, mediated the relationship between the proportion of non-Danish children in the classroom and children's language and pre-literacy skills (Slot et al., 2017b^[63]).

There is some evidence suggesting linkages between licensing and quality interactions in family daycare settings

Issues of governance and standards in family daycare settings focus on regulations and licensing. Countries often establish minimum requirements for licensing as incentives for providers to invest in quality improvements, and signal to parents differences in quality within the system of provision. There is some empirical evidence from the US supporting

the added value of licensing and regulations to quality staff-child interactions in family daycare.

In the United States, higher quality has been observed in licensed providers in terms of overall process quality (Burchinal, Howes and Kontos, 2002^[76]; Raikes et al., 2013^[131]), and sensitive interactions in particular (Burchinal, Howes and Kontos, 2002^[76]). Also, Doherty et al. (2006^[132]) showed that the staff's intention to meet the standards was one of the strongest predictors of higher observed quality of staff-child interactions, and the number of years as an unregulated home-care provider was negatively related to staff-child interactions.

In the Flemish Community in Belgium all home-care providers are licensed and some are also affiliated with a professional organisation that mediates between the parents and the home-care provider, handles administration and financial issues and provides support for ongoing professional development. Recent findings revealed no significant differences in process quality between affiliated and non-affiliated home-care providers (Vandenbroeck et al., 2018^[29]). There might be two possible explanations for the lack of differences. One possibility is that the actual support home-based care providers receive is limited to financial and administrative support. At the same time the government has recently invested in providing pedagogical support to home-care providers that are not affiliated with an organisation. Altogether, the differences between both types of providers appear to be minimal regarding process quality.

Note

1; Note that the Chinese study only revealed a significant difference between public and private settings when accounting for centre characteristics (e.g. physical location of the centre, government funding, staff salary and child tuition). After accounting for staff characteristics, such as pre-service qualifications, work experience and classroom features, including group size and child-staff ratio, the type of setting no longer predicted differences in quality (Hu et al., 2016a_[104]).

References

- Barros, S. and C. Aguiar (2010), “Assessing the quality of Portuguese child care programs for toddlers”, *Early Childhood Research Quarterly*, Vol. 25/4, pp. 527-535, <http://dx.doi.org/10.1016/j.ecresq.2009.12.003>. [25]
- Barros, S. et al. (2016), “Infant child care in Portugal: Associations with structural characteristics”, *Early Childhood Research Quarterly*, Vol. 37/1, pp. 118-130, <http://dx.doi.org/10.1016/j.ecresq.2016.05.003>. [26]
- Blau, D. (1999), “The effect of child care characteristics on child development”, *Journal of Human Resources*, Vol. 34/4, pp. 786-822, <http://dx.doi.org/10.2307/146417>. [19]
- Boogaard, M., I. Bollen and L. Dijkers (2014), *Gastouderopvang in West-Europese landen- Een inventarisatie van best practices voor organisatie, toezicht, handhaving en kwaliteit in zes West-Europese landen (Host parent care in Western European countries-An inventory of best practices for organization)*, Kohnstamm Instituut, Amsterdam, <http://www.kohnstammstituut.uva.nl/assets/ki922.pdf> (accessed on 24 september 2017). [36]
- Bowne, J. et al. (2017), “A meta-analysis of class size and ratios in early childhood programs: Are thresholds of quality associated with greater impacts on cognitive, achievement, and socioemotional outcomes?”, *Educational Evaluation and Policy Analysis*, advanced online publication, <http://dx.doi.org/10.3102/0162373716689489>. [10]
- Burchinal, M., C. Howes and S. Kontos (2002), “Structural predictors of child care quality in child care homes”, *Early Childhood Research Quarterly*, Vol. 17/1, pp. 87-105, [http://dx.doi.org/10.1016/S0885-2006\(02\)00132-1](http://dx.doi.org/10.1016/S0885-2006(02)00132-1). [37]
- Burchinal, M. et al. (2002), “Caregiver training and classroom quality in child care centers”, *Applied Developmental Science*, Vol. 6/1, pp. 2-11, http://dx.doi.org/10.1207/S1532480XADS0601_01. [11]
- Clifford, R. et al. (2005), “What is pre-kindergarten? Characteristics of public pre-kindergarten programs”, *Applied Developmental Science*, Vol. 9/3, pp. 126-143, http://dx.doi.org/10.1207/s1532480xads0903_1. [43]
- Coley, R. et al. (2016), “Comparing public, private, and informal preschool programs in a national sample of low-income children”, *Early Childhood Research Quarterly*, Vol. 36, pp. 91-105, <http://dx.doi.org/10.1016/j.ecresq.2015.11.002>. [40]

- Colwell, N. et al. (2013), “New evidence on the validity of the Arnett Caregiver Interaction Scale: Results from the early childhood longitudinal study-birth cohort”, *Early Childhood Research Quarterly*, Vol. 28/2, pp. 218-233, <http://dx.doi.org/10.1016/j.ecresq.2012.12.004>. [38]
- Cryer, D. et al. (1999), “Predicting process quality from structural quality in preschool programs: A cross-country comparison”, *Early Childhood Research Quarterly*, Vol. 14/3, pp. 339-361, [http://dx.doi.org/10.1016/S0885-2006\(99\)00017-4](http://dx.doi.org/10.1016/S0885-2006(99)00017-4). [17]
- Daems, M. et al. (2016), *MeMoQ Deelrapport 12: Nulmeting: contextvariabelen (MeMoQ subreport 12: Baseline measurement: Context variables)*, Kind en Gezin, KU Leuven, UGent, Brussel, Leuven, Gent. [39]
- de Haan, A. et al. (2013), “Targeted versus mixed preschools and kindergartens: Effects of class composition and teacher-managed activities on disadvantaged children's emergent academic skills”, *School Effectiveness and School Improvement: An International Journal of Research, Policy and Practice*, Vol. 24/2, pp. 177-194, <http://dx.doi.org/10.1080/09243453.2012.749792>. [59]
- de Schipper, E., J. Riksen-Walraven and S. Geurts (2006), “Effects of child-caregiver ratio on the interactions between caregivers and children in child-care centers : An experimental study”, *Child Development*, Vol. 77/4, pp. 861-874, <http://dx.doi.org/10.1111/j.1467-8624.2006.00907.x>. [34]
- Deynoot-Schaub, M. and J. Riksen-Walraven (2005), “Child care under pressure: The quality of Dutch centers in 1995 and in 2001”, *The Journal of Genetic Psychology: Research and Theory on Human Development*, Vol. 166/3, pp. 280-296, <http://dx.doi.org/10.3200/GNTP.166.3.280-296>. [27]
- Doherty, G. et al. (2006), “Predictors of quality in family child care”, *Early Childhood Research Quarterly*, Vol. 21/3, pp. 296-312, <http://dx.doi.org/10.1016/j.ecresq.2006.07.006>. [61]
- Early, D. et al. (2010), “How do pre-kindergarteners spend their time? Gender, ethnicity, and income as predictors of experiences in pre-kindergarten classrooms”, *Early Childhood Research Quarterly*, Vol. 25/2, pp. 177-193, <http://dx.doi.org/10.1016/j.ecresq.2009.10.003>. [54]
- Ebert, S. et al. (2013), “Internal and external influences on vocabulary development in preschool children”, *School Effectiveness and School Improvement: An International Journal of Research, Policy and Practice*, Vol. 24/2, pp. 138-154, <http://dx.doi.org/10.1080/09243453.2012.749791>. [20]
- Freitas, L., T. Shelton and J. Tudge (2008), “Conceptions of US and Brazilian early childhood care and education: A historical and comparative analysis”, *International Journal of Behavioral Development*, Vol. 32/2, pp. 161-170, <http://dx.doi.org/10.1177/0165025407087216>. [5]

- Fuligni, A. et al. (2009), “Diverse pathways in early childhood professional development: An exploration of early educators in public preschools, private preschools, and family child care homes”, *Early Education and Development*, Vol. 20/3, pp. 507-526, <http://dx.doi.org/10.1080/10409280902783483>. [42]
- Howes, C. et al. (2008), “Ready to learn? Children’s pre-academic achievement in pre-Kindergarten programs”, *Early Childhood Research Quarterly*, Vol. 23/1, pp. 27-50, <http://dx.doi.org/10.1016/j.ecresq.2007.05.002>. [21]
- Hu, B. et al. (2016a), “Predictors of Chinese early childhood program quality: Implications for policies”, *Children and Youth Services Review*, Vol. 70, pp. 152-162, <http://dx.doi.org/10.1016/j.childyouth.2016.09.013>. [12]
- Hulpia, H. et al. (2016), *MeMoQ Deelrapport 10. Emotionele en educatieve ondersteuning in de nulmeting*, Kind en Gezin, Ugent, KU Leuven. [28]
- Jamison, K. et al. (2014), “CLASS-Infant: An observational measure for assessing teacher-infant interactions in center-based child care”, *Early Education and Development*, Vol. 25/4, pp. 553-572, <http://dx.doi.org/10.1080/10409289.2013.822239>. [29]
- Justice, L. et al. (2008), “Quality of language and literacy instruction in preschool classrooms serving at-risk pupils”, *Early Childhood Research Quarterly*, Vol. 23/1, pp. 51-68, <http://dx.doi.org/10.1016/j.ecresq.2007.09.004>. [51]
- King, E. et al. (2016), “Classroom quality in infant and toddler classrooms: impact of age and programme type”, *Early Child Development and Care*, Vol. 186/11, pp. 1821-1835, <http://dx.doi.org/10.1080/03004430.2015.1134521>. [41]
- Kuger, S. et al. (2015), “Stability and patterns of classroom quality in German early childhood education and care”, *An International Journal of Research, Policy, and Practice*, Vol. 27/3, pp. 418-440, <http://dx.doi.org/10.1080/09243453.2015.1112815>. [46]
- Lehrl, S., S. Kuger and Y. Anders (2014), “Soziale disparitäten beim zugang zu kindergartenqualität und differenzielle konsequenzen für die vorschulische mathematische entwicklung (Social disparities in access to preschool quality and differential consequences on the development of early numeracy)”, *Unterrichtswissenschaft*, Vol. 42, pp. 132-151. [48]
- Blossfeld, H. et al. (eds.) (2017), *Effectiveness of Dutch targeted preschool education policy for disadvantaged children*, Edward Elgar, Cheltenham, UK, <http://dx.doi.org/10.4337/9781786432094.00019>. [55]
- Leu, H. and R. Schelle (2009), “Between education and care? Critical reflections on early childhood policies in Germany”, *Early Years*, Vol. 29/1, pp. 5-18, <http://dx.doi.org/10.1080/09575140802689034>. [47]
- LoCassale-Crouch, J. et al. (2007), “Observed classroom quality profiles in state-funded pre-kindergarten programs and associations with teacher, program, and classroom characteristics”, *Early Childhood Research Quarterly*, Vol. 22/1, pp. 3-17, <http://dx.doi.org/10.1016/j.ecresq.2006.05.001>. [49]

- Maher, E., B. Frestedt and C. Grace (2008), “Differences in child care quality in rural and non-rural areas”, *Journal of Research in Rural Education*, Vol. 23/4, pp. 1-3. [44]
- Mashburn, A. et al. (2008), “Measures of classroom quality in prekindergarten and children’s development of academic, language, and social skills”, *Child Development*, Vol. 79/3, pp. 732-749, <http://dx.doi.org/10.1111/j.1467-8624.2008.01154.x>. [13]
- Mashburn, A. et al. (2009), “Peer effects on children’s language achievement during pre-kindergarten”, *Child Development*, Vol. 80/3, pp. 686-702, <http://dx.doi.org/10.1111/j.1467-8624.2009.01291.x>. [22]
- Helburn, S. (ed.) (1995), *Models of quality in early childhood care and education*, Department of Economics, Denver, CO. [57]
- Montie, J., Z. Xiang and L. Schweinhart (2006), “Preschool experience in 10 countries: Cognitive and language performance at age 7”, *Early Childhood Research Quarterly*, Vol. 21/3, pp. 313-331, <http://dx.doi.org/10.1016/j.ecresq.2006.07.007>. [23]
- NICHD Early Child Care Research Network (2002), “Child-care structure → process → outcome: Direct and indirect effects of child-care quality on young children’s development”, *Psychological Science*, Vol. 13/3, pp. 199-206, <http://dx.doi.org/10.1111/1467-9280.00438>. [24]
- OECD (2017a), *Starting Strong 2017: Key OECD Indicators on Early Childhood Education and Care*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264276116-3-en>. [1]
- OECD (2017d), *Education at a Glance 2017: OECD Indicators*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/eag-2017-en>. [2]
- Pessanha, M., C. Aguiar and J. Bairrão (2007), “Influence of structural features on Portuguese toddler child care quality”, *Early Childhood Research Quarterly*, Vol. 22, pp. 204-214, <http://dx.doi.org/10.1016/j.ecresq.2007.02.003>. [31]
- Philips, D. et al. (2000), “Within and beyond the classroom door: Assessing quality in child care centers”, *Early Childhood Research Quarterly*, Vol. 15/4, pp. 475-496, [http://dx.doi.org/10.1016/S0885-2006\(01\)00077-1](http://dx.doi.org/10.1016/S0885-2006(01)00077-1). [7]
- Phillipsen, L. et al. (1997), “The prediction of process quality from structural features of child care”, *Early Childhood Research Quarterly*, Vol. 12, pp. 281-303, [http://dx.doi.org/10.1016/S0885-2006\(97\)90004-1](http://dx.doi.org/10.1016/S0885-2006(97)90004-1). [8]
- Pianta, R. et al. (2005), “Features of Pre-Kindergarten programs, classrooms, and teachers: Do they predict observed classroom quality and child-teacher interactions?”, *Applied Developmental Science*, Vol. 9/3, pp. 144-159. [14]
- Raikes, H. et al. (2013), “Family child care in four Midwestern states: Multiple measures of quality and relations to outcomes by licensed status and subsidy program participation”, *Early Childhood Research Quarterly*, Vol. 28/4, pp. 879-892, <http://dx.doi.org/10.1016/j.ecresq.2013.06.001>. [60]

- Sandstrom, H. (2012), “The characteristics and quality of pre-school education in Spain”, *International Journal of Early Years Education*, Vol. 20/2, pp. 130-158, <http://dx.doi.org/10.1080/09669760.2012.715012>. [15]
- Schechter, C. and B. Bye (2007), “Preliminary evidence for the impact of mixed-income preschools on low-income children's language growth”, *Early Childhood Research Quarterly*, Vol. 22/1, pp. 137-146, <http://dx.doi.org/10.1016/j.ecresq.2006.11.005>. [58]
- Slot, P. et al. (2015), “Associations between structural quality aspects and process quality in Dutch early childhood education and care settings”, *Early Childhood Research Quarterly*, Vol. 33, pp. 64-76, <http://dx.doi.org/10.1016/j.ecresq.2015.06.001>. [53]
- Slot, P., M. Lerkkanen and P. Leseman (2015), *The relations between structural quality and process quality in European early childhood education and care provisions: Secondary data analyses of large scale studies in five countries*, CARE, http://ecec-care.org/fileadmin/careproject/Publications/reports/CARE_WP2_D2_2_Secondary_data_analyses.pdf. [6]
- Slot, P. et al. (2017a), “Measurement properties of the CLASS Toddler in ECEC in the Netherlands”, *Journal of Applied Developmental Psychology*, Vol. 48, pp. 79-91, <http://dx.doi.org/10.1016/j.appdev.2016.11.008>. [52]
- Slot, P. et al. (2017b), *Structural and Process Quality of Danish Preschools: Direct and Indirect Associations with Children's Growth in Language and Pre-Literacy Skills*, Revision submitted for publication. [16]
- Slot, P. et al. (2017c), *Kwaliteit van de Nederlandse kinderdagopvang, peuteropvang, buitenschoolse opvang en gastouderopvang. Meting 2017 (Quality of the Dutch child day care, toddler care, after-school care and home-based care. Measurement 2017)*, Landelijke Kwaliteitsmonitor Kinderopvang (National Child Care Quality Monitor), <http://www.monitorlkk.nl>. [45]
- Thomason, A. and K. La Paro (2009), “Measuring the quality of teacher–child interactions in toddler child care”, *Early Education and Development*, Vol. 20, pp. 285-304, <http://dx.doi.org/10.1080/10409280902773351>. [30]
- Tonyan, H. and C. Howes (2003), “Exploring patterns in time children spend in a variety of child care activities: Associations with environmental quality, ethnicity, and gender”, *Early Childhood Research Quarterly*, Vol. 18/1, pp. 121-142, [http://dx.doi.org/10.1016/S0885-2006\(03\)00006-1](http://dx.doi.org/10.1016/S0885-2006(03)00006-1). [50]
- Vandenbroeck, M. et al. (2018), *Quality in family child care providers: A study of variations in process quality of home-based childcare*, Submitted for publication in European Early Childhood Education Journal. [62]
- Vermeer, H. et al. (2010), “Child care quality and children's cortisol in Basque Country and the Netherlands”, *Journal of Applied Developmental Psychology*, Vol. 31/4, pp. 339-347, <http://dx.doi.org/10.1016/j.appdev.2010.05.001>. [35]
- Vermeer, H. et al. (2016), “Quality of child care using the environmental rating scales: A meta-analysis of international studies”, *International Journal of Early Childhood*, Vol. 48/1, pp. 33-60, <http://dx.doi.org/10.1007/s13158-015-0154-9>. [9]

- Vogel, C. et al. (2015a), *Toddlers in early Head Start: A portrait of 2-years-olds, their families, and the program serving them*, Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC. [32]
- Vogel, C. et al. (2015b), *Toddlers in early Head Start: A portrait of 3-years-olds, their families, and the program serving them*, Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC. [33]
- von Suchodoletz, A. et al. (2017), *"Associations among quality indicators in early childhood education and care (ECEC) and relations with child development and learning: A meta-analysis"*, Internal document, OECD, Paris. [18]
- Young Children Vol., P. (ed.) (2003), "Full-day kindergarten: A story of successful adoption and initial implementation", *Young Children*, Vol. 58/6, pp. 54-58. [3]
- Wishard, A. et al. (2003), "Child care program and teacher practices: Associations with quality and children's experiences", *Early Childhood Research Quarterly*, Vol. 18/1, pp. 65-103, [http://dx.doi.org/10.1016/S0885-2006\(03\)00007-3](http://dx.doi.org/10.1016/S0885-2006(03)00007-3). [56]
- Zvoch, K. (2009), "Treatment fidelity in multisite evaluation: A multilevel longitudinal examination of provider adherence status and change", *American Journal of Evaluation*, Vol. 30/1, pp. 44-61, <http://dx.doi.org/10.1177/1098214008329523>. [4]



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