



Department
for Education

Study of Early Education and Development (SEED): Study of Quality of Early Years Provision in England (Revised)

Research Brief

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Study of Early Education
& Development



Social Science in Government

¹ This revised report, published May 2018, includes corrections to the multivariate analysis of process quality by structural characteristics for two-year-old settings and for three- to four-year-old settings

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Glossary

CPD

Continuing Professional Development.

ECEC

Early Childhood Education and Care.

ECERS-E

Early Childhood Environment Rating Scale (Extension). An observational rating scale for ECEC settings for the over-threes; assessment is across 3 domains: Literacy, Mathematics and Diversity.

ECERS-R

Early Childhood Environment Rating Scale (Revised). An observational measure of ECEC settings overall quality for over-threes; assessment is across 5 domains: Personal Care Routines, Language Reasoning, Activities, Interaction and Programme Structure.

IMD

Index of Multiple Deprivation; a measure of area deprivation.

ITERS-R

Infant / Toddler Environment Ratings Scale. An observational measure of overall quality of ECEC settings for under-threes; assessment is across 6 domains: Space and Furnishings, Personal Care Routines, Listening and Talking, Activities, Interaction and Program Structure.

SEN/D

Special Educational Needs and Disability provision.

SD

Standard deviation (SD) is a number used to tell how measurements for a group are spread out from the average (mean), or expected value. A low standard deviation means that most of the numbers are very close to the average. A high standard deviation means that the numbers are spread out.

SSTEWS

Sustained Shared Thinking and Emotional Well-being scale. A measure of the quality of interactions between staff and children in ECEC settings; assessment is across 5 domains: Building Trust: Confidence and Independence; Supporting and Extending Language and Communication; Supporting Emotional Well-being; Supporting Learning and Critical Thinking and Assessing Learning and Language.

Summary

Introduction

Previous research findings have indicated that the quality of early childhood education and care (ECEC) received may relate to child development and learning (Sylva et al., 2012). This report aims to explore the quality and characteristics of ECEC in different group settings in England, as well as the relationship between the characteristics of a setting and the quality of care and education it offers.

Methods

In this study, quality and setting characteristics were measured in 1,000 group ECEC settings, comprising 402 two-year-old and 598 three- to four-year-old room visits. Settings were a subsample of those attended by children from the SEED longitudinal study and to be representative of the distribution of group setting types in England.

A questionnaire completed by the setting manager measured structural characteristics including adult to child ratios, staff qualifications and group size. Half-day observations using academically validated measures of process quality measured overall setting quality, educational practices and staff to child interaction.

Results

Quality across all types of providers was generally at least adequate, and comparison with findings from the previous DfE funded longitudinal study suggests that quality of ECEC as well as staff qualification levels appear to have improved in England over the past 16 years. Some regional variation in quality was observed, although quality of provision was similar across advantaged and disadvantaged areas.

A number of structural characteristics were associated with process quality. Key characteristics associated with quality include a higher overall staff to child ratio, a higher level of staff qualification, having a staff training plan or budget, having lower staff turnover, a narrower age range, having a larger number of places, and in some cases having specialist SEN/D provision were associated with improvements in quality. Variation was seen according to child age and the type of setting studied.

Conclusions

Good quality ECEC is being delivered across providers in England, and improvements in ECEC quality have been seen over time. A number of setting characteristics which are seen to be associated with process quality may be potential areas for development to further improve ECEC quality in England.

Introduction

Background to the study

The Study of Early Education and Development (SEED) includes a major longitudinal study that investigates the impact of early childhood education and care (ECEC) on children's school readiness and longer-term outcomes, including its impact on the most disadvantaged children.

Early publications from the longitudinal SEED study indicated that ECEC at age two is associated with improvement in children's cognitive and socio-emotional development at age three (DfE, 2017). This finding is in line with previous findings from the Effective Pre-school, Primary and Secondary Education (EPPSE) study, which found that ECEC continues to relate to improved cognitive and socio-emotional development through primary and secondary school (Sylva et al., 2008; 2012).

Research findings have also indicated that the quality of ECEC received may also relate to child development and learning (Sylva et al., 2012). Quality is often measured as (a) process quality, which includes the quality of the curriculum, pedagogical practices and child experiences that support children's development; and (b) structural characteristics, including adult-child ratios, staff qualifications, group size and characteristics of the physical space (Sylva et al., 2004). These factors may be inter-related so that structural characteristics such as staff qualification have been found to be associated with measures of process quality (Sylva et al., 2004).

Aims

This report deals with findings of the study of quality of provision for early years settings within the SEED project.²

The main objectives of this report were to explore:

1. The distribution of quality of ECEC in different group settings for two-year-old and three- to four-year-old children in England
2. The relationship between the characteristics of a setting and the quality of care and education it offers.

² Findings from a separate study of quality in childminder settings is available at <https://www.gov.uk/government/collections/study-of-early-education-and-development-seed>

Methods

To assess the quality of provision for two-year-old and three- to four-year-old children, structural characteristics (including adult-child ratios, staff qualifications, group size and characteristics of the physical space) were measured through a questionnaire for the manager, Early Years Foundation Stage Lead or head teacher.³

Information about process quality (including the curriculum, pedagogical practices and child experiences that support development) was collected through observations lasting half a day and was measured using scales detailed in Table 1.

Table 1: Scales used to assess process quality for each age group

	Two-year-olds	Three- to Four-year-olds
Infant and Toddler Environment Rating Scale (ITERS-R) An overall measure of quality	✓	
Early Childhood Environment Rating Scale (ECERS-R) An overall measure of quality		✓
Early Childhood Environment Rating Scale Extension (ECERS-E) Focuses on educational aspects		✓
Sustained Shared Thinking and Emotional Well-being Scale (SSTEWS) Focuses on the quality of interactions between staff and children	✓	✓

From May 2014 to the end of April 2016, 1000 visits were carried out: 402 room visits for settings for two-year-olds and 598 room visits for settings for three- to four-year-olds.

The overall SEED longitudinal study sample was recruited from the most complete sampling frame available at the time; Child Benefit records (see Speight et al., 2015 for details). For the quality study, the number of settings selected in each type (private, voluntary, children's centre, nursery class/school, local authority nursery) were chosen to provide a similar percentage to the overall number of settings in that category as used by the longitudinal sample of children. The sample of settings used in this quality study can therefore be regarded as reasonably representative of group settings in England.

Overview of the quality scales

The ITERS-R⁴ is an overall measure of quality, and was used to assess settings for two-year-old children across six domains:

I. Space and Furnishings

³ See Technical Report Appendix B.

⁴ Harms, Cryer & Clifford, 2006.

- II. Personal Care Routines
- III. Listening and Talking
- IV. Activities
- V. Interaction
- VI. Program Structure

The ECERS-R⁵ is an overall measure of quality, and was used to assess settings for three- to four-year-old children across five domains:

- I. Personal Care Routines
- II. Language Reasoning
- III. Activities
- IV. Interaction
- V. Programme Structure

The ECERS-E⁶ focuses on the educational aspects of experience, and was used to assess settings for three- to four-year-old children across three domains:

- I. Literacy
- II. Mathematics
- III. Diversity

The SSTEW⁷ focuses on the quality of interactions between staff and children, and was used to assess settings (for two-year-old as well as three- to four-year-old children) across five domains:

- I. Building Trust, Confidence and Independence
- II. Supporting and Extending Language and Communication
- III. Supporting Emotional Well-being
- IV. Supporting Learning and Critical Thinking
- V. Assessing Learning and Language

Analyses

Findings are presented separately for two-year-old settings and three- to four-year-old settings as these settings differ in their characteristics and different measures of process quality were used.

Descriptive statistics for structural and process quality are presented, as well as a comparison of structural and process quality for different types of settings.

⁵ Harms, Cryer & Clifford, 2005.

⁶ Sylva, Siraj-Blatchford & Taggart, 2011.

⁷ Siraj, Kingston & Melhuish, 2015.

Because it is useful to understand which factors generally improve quality overall, but also which factors are related more specifically to 'good or better' or 'excellent' quality scores, the relationship between structural and process characteristics was considered in three ways:

1. Whether structural characteristics of ECEC settings were associated with continuous process quality scores (i.e. which characteristics are associated with higher quality scores).
2. Whether structural characteristics of ECEC settings were associated with achieving excellent process quality (score of 6 or more).
3. Whether structural characteristics of ECEC settings were associated with achieving good or better process quality (score of 5 or more).

Variations in the quality of settings by region, setting type and area deprivation are also presented.

Variation in process and structural quality over time is considered through comparison with data from the Effective Provision of Pre-School Education (EPPE) study.

Key findings

Settings for two-year-olds

The majority of assessed ECEC settings for two-year-olds (89%) were either private or voluntary settings, with smaller numbers of children's centres (6%), nursery classes / schools (3%) and Local Authority nurseries (2%), see Table 2. The numbers of Local Authority nurseries (N = 7) and of nursery class / school settings (N=11) were small and these were therefore omitted from the analyses of process quality in terms of structural characteristics of settings, because conclusions based on such small groups are unlikely to be robust.

Table 2: Breakdown of settings for two-year-olds by type.

Type of setting	N	Percent
Private	256	64%
Voluntary	103	26%
Children's Centre	25	6%
Nursery Class / School	11	3%
Local Authority Nursery	7	2%
Total	402	100%

Structural characteristics of settings for two-year-olds

Overview of settings

Most settings accepted children from under two years of age (66%), while some only accepted children from two years of age upwards (34%). Sixty-one per cent of settings made provision for children with special education needs and / or disabilities (SEN/D) whilst 37% did not. The mean staff to child ratio was 1 to 4.⁸

Staff characteristics

The most common level of Manager's qualification was Level 6, which is degree or NVQ Level 6 or equivalent. The mean level of staff qualifications for settings was 3.0 (A-Level / NVQ Level 3 or equivalent). The percentage of staff replaced (staff turnover) in the last year had a mean of 11% (SD = 12.6),⁹ with 42% having staff turnover of 10% or greater.

⁸ For children age two the statutory ratio requirement is one staff member for every four children. Further details on statutory ratio requirements are available in the technical report Appendix D.

⁹ Standard deviation (SD) is a number used to tell how much measurements for a group are spread out from the average (mean), or expected value. A low standard deviation means that most of the numbers are very close to the average. A high standard deviation means that the numbers are spread out.

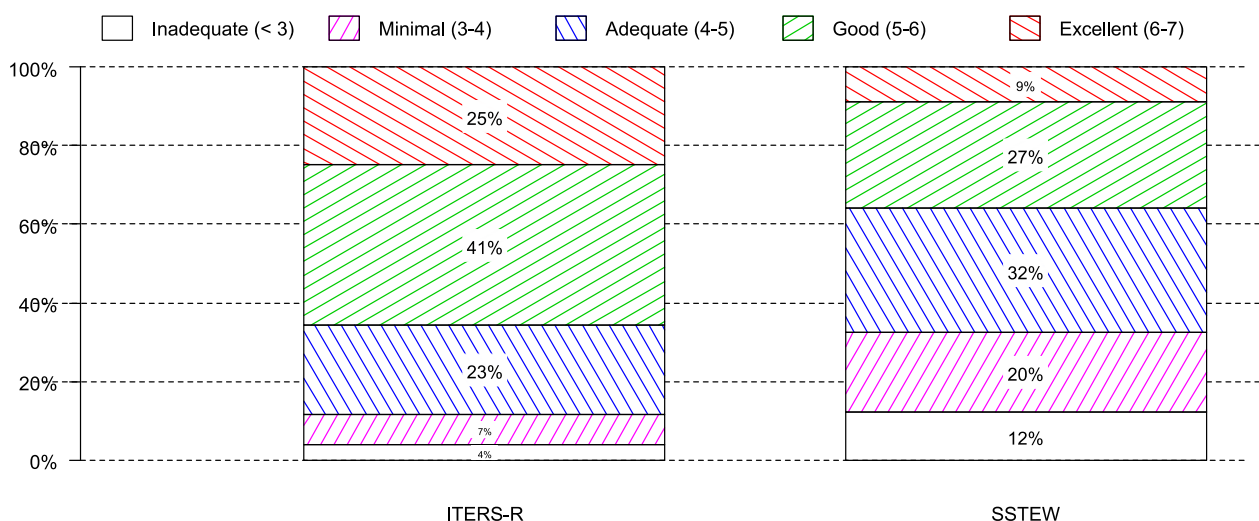
Continuing Professional Development (CPD), supervision and training

The frequency of CPD ranged from 1 to 24 times per year, mean 4.8 (SD = 4.1). The frequency of staff supervision ranged from annually to weekly. The mean number of supervisions per year was 8.7 (SD = 11.0). Eighty-seven per cent of settings had a training plan in place, 12% did not. Forty-five per cent of settings had a training budget, 56% did not.

Process quality of settings for two-year-olds

Settings quality was usually at least adequate, with 89% of settings being rated adequate or better on the Infant / Toddler Environment Ratings Scale (ITERS-R) and 68% of settings being rated adequate or better on the Sustained Shared Thinking and Emotional Well-being scale (SSTEWS). See Figure 1.

Figure 1: Breakdown of ITERS-R and SSTEWS scores for settings for two-year-olds by quality band.



On average, process quality scores tended to be higher at nursery classes / schools and at children's centres than at the private and voluntary settings. See Figures 2-3. Any differences between nursery classes and nursery schools cannot be established in this report due to small numbers of these settings.

Figure 2: Breakdown by quality band of ITERS-R scores for settings for two-year-olds by type.

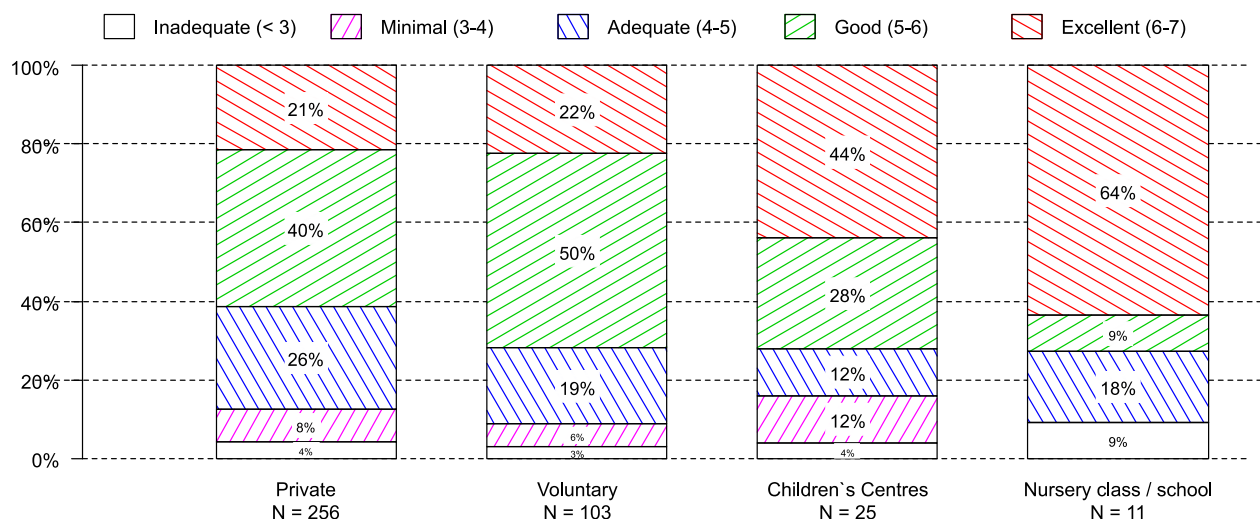
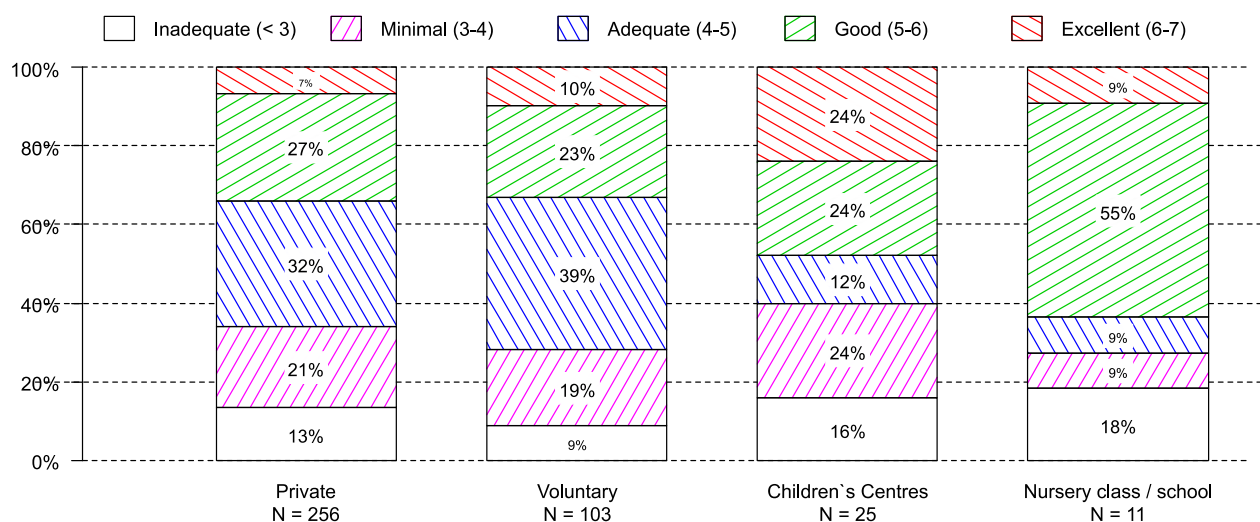


Figure 3: Breakdown by quality band of SSTEWS scores for settings for two-year-olds by type.



Associations between structural characteristics and process quality for two-year-olds

Analyses examined which structural characteristics were predictive of higher quality scores using multivariate regression. Given observed structural differences between the setting types, separate analyses were performed for:

- Private settings
- Voluntary settings
- Children's centres

Associations are ordered below in reference to the strength of linear associations observed between structural characteristics and process quality.

Private Settings

The factors associated with higher quality at private settings were:

- Having a higher overall staff to child ratio (i.e. fewer children per staff member across the whole setting) was the strongest predictor of process quality. This factor was associated with higher scores on both the ITERS-R scale (overall quality) and the SSTEWS scale (quality of staff / child interactions) and with achieving “good or better” scores on these scales.
- Having a minimum age of two for children accepted at the setting was associated with higher scores for both the ITERS-R (overall quality) and SSTEWS (quality of staff / child interactions).
- Having a larger number of places at the setting was associated with higher scores for both ITERS-R (overall quality) and SSTEWS (quality of staff / child interactions). This factor was also associated with an increased probability of achieving “good or better” ITERS-R scores and of achieving “excellent” SSTEWS scores.
- Having a higher mean level of staff qualification was associated with higher scores on the SSTEWS scale (quality of staff / child interactions). This factor was also associated with an increased probability of achieving “good or better” SSTEWS scores and with an increased probability of achieving “excellent” ITERS-R scores (overall quality).
- Having a lower maximum age for children accepted at the setting was associated with higher ITERS-R scores (overall quality) and with an increased probability of achieving “good or better” ITERS-R scores.
- Where the childcare setting was on single site there was an increased probability of achieving “good or better” ITERS-R scores.

The results for private settings are summarized in Table 3.

Table 3: Summary of models of process quality in terms of structural characteristics (two-year-olds) for private settings.

Characteristics of ECEC settings; Private settings	Predictors of higher process quality		Predictors of excellent process quality		Predictors of good or better process quality	
	ITERS-R	SSTEWS	ITERS-R	SSTEWS	ITERS-R	SSTEWS
Having a higher overall staff to child ratio (i.e. fewer children per staff member)	1	1			1	2
Having a higher mean level of staff qualification		3	1			1
Having a larger number of places	3	4		1	3	
Having a minimum age for children of two	2	2				
Having a lower maximum age for children	4				2	
Childcare setting is on single site					4	

For each model, statistically significant factors are ranked in order of effect size (1 = largest effect, 2 = second largest effect etc.). Different numbers of effects are seen for each model because only statistically significant effects are shown.

Higher process quality is measured as a continuous outcome measure, while excellent and good or better process quality are measured as categorical outcomes.

Voluntary Settings

The factors associated with higher quality at voluntary settings were:

- Not having specialist SEN/D provision was associated with higher scores for ITERS-R (overall quality), was the strongest predictor of higher scores for the SSTEWS (quality of staff / child interactions) and was associated with an increased probability of achieving “good or better” scores on these scales.
- Having a staff training plan in place was the strongest predictor of higher scores on the ITERS-R scale (overall quality) and was associated with an increased probability of achieving “good or better” scores on this scale.

The results for voluntary settings are summarized in Table 4.

Table 4: Summary of models of process quality in terms of structural characteristics (two-year-olds) voluntary settings (predictor rank order)

Characteristics of ECEC settings; Voluntary settings	Predictors of higher process quality		Predictors of excellent process quality		Predictors of good or better process quality	
	ITERS-R	SSTE-W	ITERS-R	SSTE-W	ITERS-R	SSTE-W
Setting does not have specialist SEN/D provision	2	1			1	1
Settings has a staff training plan in place	1				2	

For each model statistically significant factors are ranked in order of effect size (1 = largest effect, 2 = second largest effect etc.). Different numbers of effects are seen for each model because only statistically significant effects are shown. Higher process quality is measured as a continuous outcome measure, while excellent and good or better process quality are measured as categorical outcomes.

Children's Centres

The separate models for children's centres for two-year-olds found no statistically significant predictors of process quality among the structural characteristics. This may relate to the small sample size and relative homogeneity (i.e. limited range in quality scores) of these settings; a larger and more variable sample would be better able to detect any relationships that may exist.

Settings for three- to four-year-olds

The breakdown of three- to four-year-old ECEC settings by type is given in Table 5. The majority of settings for three- to four-year-olds were private or voluntary (74%), followed by nursery classes / schools (21%) and children's centres (4%). The small group of Local Authority nurseries (N = 4) were omitted from the analyses of process quality in terms of structural characteristics of settings.

Table 5: Breakdown of settings for three- to four-year-olds by type.

Type of setting	N	Percent
Private	302	51%
Voluntary	143	24%
Nursery Class / School	123	21%
Children's Centre	26	4%
Local Authority Nursery	4	0.7%
Total	598	100%

Structural characteristics of settings for three- to four-year-olds

Overview of settings

Some settings accepted children below two years of age (46%); and some only accepted children from two years upwards (54%). Sixty-three per cent of settings made specialist provision for children with special education needs and / or disabilities (SEN/D) whilst 37% did not. The mean overall staff to child ratio was 1 to 8.¹⁰

Staff characteristics

The most common level of Manager's qualification was Level 6, which is degree or NVQ Level 6 or equivalent. The average level of staff qualification across all settings was 3.2 (SD = 0.82) which is A-Level / NVQ Level 3 or equivalent. The percentage of staff replaced (staff turnover) had a mean of 11% (SD = 14.8), with 38% having replaced 10% or more) in the last year.

Continuing Professional Development (CPD), supervision and training

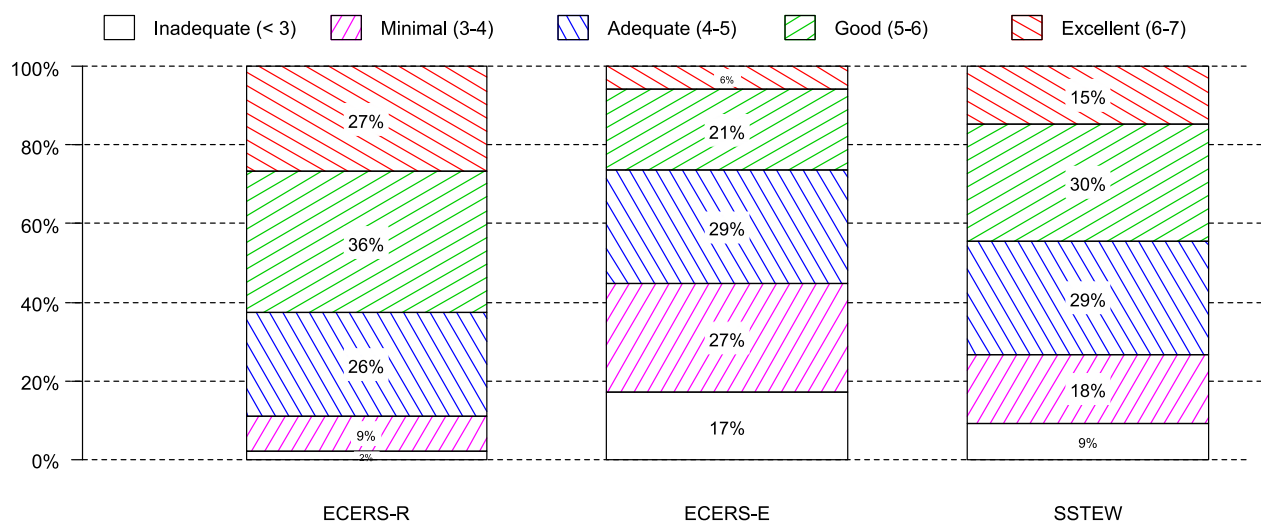
The frequency of CPD ranged from one to 24 times per year, mean 4.7 (SD = 4.0). The frequency of staff supervision ranged from weekly to annually. The mean number of supervisions per year was 8.7 (SD = 12.3). Eighty-six per cent of settings had a training plan in place, 14% did not. Fifty-six per cent of settings had a training budget, 44% did not.

Process quality of settings for three- to four-year-olds

Settings quality was usually at least adequate, with 89% of settings rated adequate or better on the Early Childhood Environment Rating Scale (ECERS-R), 56% rated adequate or better on the Early Childhood Environment Rating Scale: Extension (ECERS-E) and 74% rated adequate or better on the Sustained Shared Thinking and Emotional Well-being scale (SSTEWS). See Figure 4.

¹⁰ Details on statutory ratio requirements are available in the technical report Appendix D.

Figure 4: Breakdown of ECERS-R, ECERS-E and SSTEW scores settings for three- to four-year-olds by quality band.



On average, process quality scores tended to be higher at nursery classes / schools and at children's centres than at the private and voluntary settings. See Figures 5-7. Any differences between nursery classes and nursery schools cannot be established in this report due to small numbers of nursery schools.

Figure 5: Breakdown by quality band of ECERS-R for settings for three- to four-year-olds by type.

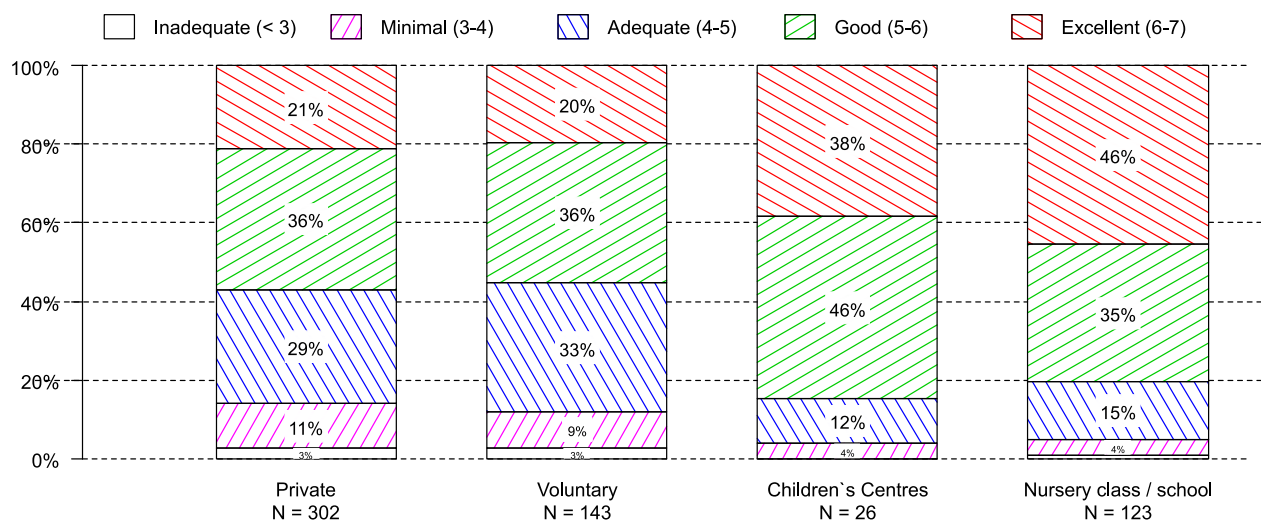


Figure 6: Breakdown by quality band of ECERS-E for settings for three- to four-year-olds by type.

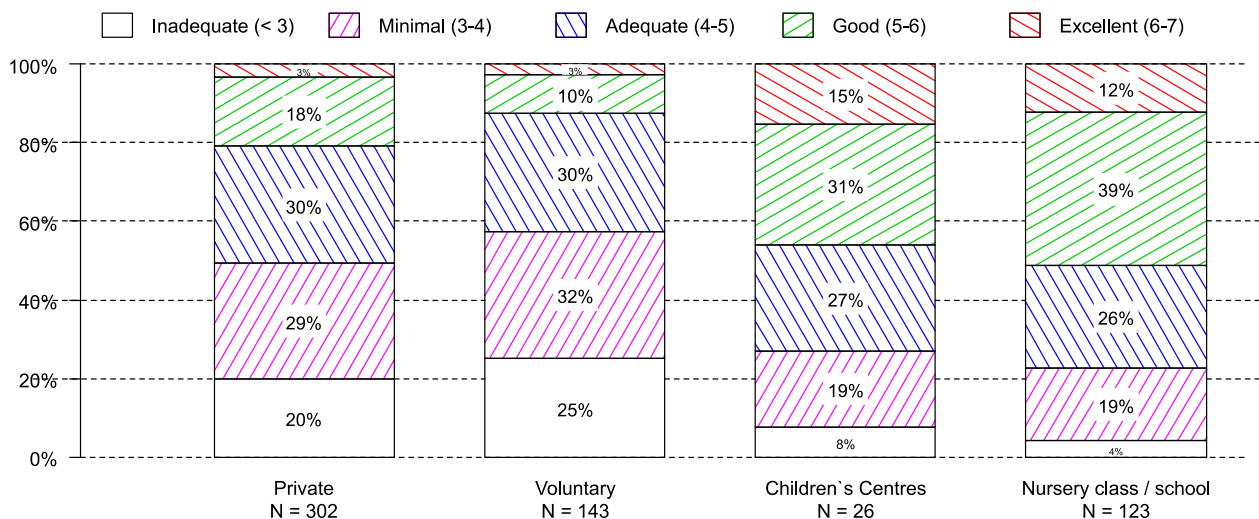
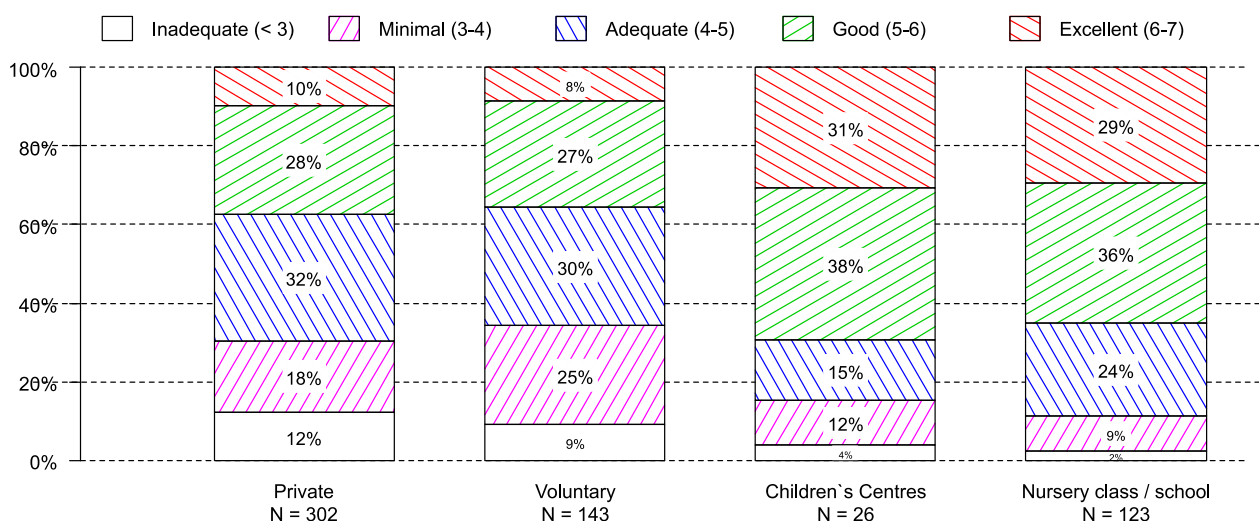


Figure 7: Breakdown by quality band of SSTEWS for settings for three- to four-year-olds by type.



Associations between structural characteristics and process quality for three- to four-year-olds

Multivariate regression analyses were conducted to determine which structural characteristics were predictive of higher quality scores. Given observed structural differences between the setting type, separate analyses were performed for:

1. Private settings
2. Voluntary settings
3. Nursery classes / schools
4. Children's centres

Associations are ordered below in reference to the strength of linear associations observed between structural characteristics and process quality.

Private settings

The following factors were associated with higher quality at private settings:

- Having a higher mean level of staff qualification was the strongest predictor of higher scores for ECERS-R (overall quality), ECERS-E (educational quality) and SSTEW (quality of staff / child interaction). This factor was also associated with an increased probability of achieving “good or better” ECERS-R and SSTEW scores and of achieving “excellent” ECERS-R scores.
- Having a larger number of places at the setting was associated with higher scores for ECERS-R (overall quality), ECERS-E (educational quality) and SSTEW (quality of staff / child interaction). This factor was also associated with a higher probability of achieving “good or better” scores on these scales and with a higher probability of achieving “excellent” ECERS-E and SSTEW scores.
- Having a minimum age for children of two was associated with higher scores on the ECERS-R, ECERS-E and SSTEW scales and with an increased probability of achieving “good or better” scores on the ECERS-E and SSTEW scales.
- Having specialist SEN/D provision was associated with higher scores on the ECERS-E scale (educational quality).
- Having a higher overall staff to child ratio (i.e. fewer children per staff member across the whole setting) was associated with an increased probability of achieving “excellent” SSTEW scores (quality of staff / child interaction) and an increased chance of achieving “good or better” ECERS-R scores (overall quality).
- Having a lower frequency of staff continuing professional development (CPD) was associated with an increased probability of achieving “excellent” scores on the ECERS-R scale (overall quality).¹¹

Factors associated with higher quality at private settings are summarized in Table 6.

¹¹ This may be an instance of “reverse causation”; i.e. those settings which are performing relatively less well may increase their frequency of staff CPD in an attempt to improve quality.

Table 6: Summary of models of process quality in terms of structural characteristics (three- to four-year-olds) private settings (predictor rank order).

Structural characteristics of ECEC settings (private settings)	Predictors of higher process quality			Predictors of excellent process quality			Predictors of good or better process quality		
	ECERS-R	ECERS-E	SSTEWS	ECERS-R	ECERS-E	SSTEWS	ECERS-R	ECERS-E	SSTEWS
Setting has larger number of places	2	2	3		1	2	3	1	2
Setting has a higher mean level of staff qualification	1	1	1	1			1		1
Minimum age for children is two	3	3	2					2	3
Setting has a higher overall staff to child ratio (i.e. fewer children per staff member)						1	2		
Setting has a lower frequency of staff CPD				2					
Setting has specialist SEN/D provision		4							

For each model, statistically significant factors are ranked in order of effect size (1 = largest effect, 2 = second largest effect etc.). Different numbers of effects are seen for each model because only statistically significant effects are shown. Higher process quality is measured as a continuous outcome measure, while excellent and good or better process quality are measured as categorical outcomes

Voluntary settings

The factors associated with achieving higher quality at voluntary settings were:

- Having a staff training plan in place was the strongest predictor of higher scores on the ECERS-R scale (overall quality) and the SSTEWS scale (quality of staff / child interaction). This factor was also associated with an increased probability of achieving “good or better” SSTEWS scores.
- Having a higher staff to child ratio for three- to four-year-olds (i.e. fewer three- to four-year-olds per member of staff supervising this age group) was the strongest predictor of higher scores on the ECERS-E scale (educational quality) and was associated with an increased probability of achieving “good or better” scores on this scale.
- Having a higher overall staff to child ratio (i.e. fewer children per staff member across the whole setting) was associated with higher ECERS-R scores (overall quality).

- Not having specialist SEN/D provision was associated with an increased probability of achieving “excellent” ECERS-R scores (overall quality).
- Having a minimum age for children of zero to one accepted at the setting was associated with an increased chance of achieving “good or better” ECERS-E scores (educational quality).

The factors linked with higher quality at voluntary settings are summarized in Table 7.

Table 7: Summary of models of process quality in terms of structural characteristics (three- to four-year-olds) voluntary settings (predictor rank order).

Structural characteristics of ECEC settings (voluntary settings)	Predictors of higher process quality			Predictors of excellent process quality			Predictors of good or better process quality		
	ECERS-R	ECERS-E	SSTEWS	ECERS-R	ECERS-E	SSTEWS	ECERS-R	ECERS-E	SSTEWS
Setting has a staff training plan in place	1		1						1
Setting has a higher staff to child ratio for three- to four-year-olds (i.e. fewer three- to four-year-olds per member of staff supervising this age group)		1						2	
Setting has a minimum age for children of zero to one								1	
Setting does not have specialist SEN/D provision				1					
Setting has a higher overall staff to child ratio (i.e. fewer children per staff member)	2								

For each model, statistically significant factors are ranked in order of effect size (1 = largest effect, 2 = second largest effect etc.). Different numbers of effects are seen for each model because only statistically significant effects are shown. Higher process quality is measured as a continuous outcome measure, while excellent and good or better process quality are measured as categorical outcomes.

Nursery classes / schools

Three factors emerged as statistically significantly associated with settings’ achieving higher standards as measured by the ECERS-R, ECERS-E and / or SSTEWS quality scales (see Table 6):¹²

¹² Sample size for nursery classes / school (and for children’s centres) was insufficient to examine the relationship with the binary outcomes of ‘good or better’ or ‘excellent’ quality scores.

- Having a lower maximum age for children accepted at the setting was the strongest predictor of overall quality on the ECERS-R (overall quality) and was also a statistically significant predictor of scores on the ECERS-E (educational quality).
- Having a staff training budget in place was the strongest predictor of quality on the ECERS-E (educational quality) and the SSTEWS (quality of staff / child interaction).
- Having a lower rate of staff turnover was also a statistically significant but less strong predictor of scores on the SSTEWS (quality of staff / child interaction).

Table 8: Summary of models of process quality in terms of structural characteristics (settings for three- to four-year-olds) nursery classes / schools.

Structural characteristics of ECEC settings	Predictors of higher process quality		
	ECERS-R	ECERS-E	SSTEWS
Having a lower maximum age for children	1	2	
Having a staff training budget in place		1	1
Having a lower rate of staff turnover			2

Statistically significant relationships between the process quality outcome and the structural characteristic covariate in the final multivariate regression model are numbered here in order of strength (1 = strongest relationship). Different numbers of effects are seen for each model because only statistically significant effects are shown. Higher process quality is measured as a continuous outcome measure.

Children's centres

Having a higher mean level of staff qualification was the only structural characteristic that was predictive of higher ECERS-R quality scores (overall quality). None of the structural characteristics of children's centres for three- to four-year-olds were statistically significant predictors of higher ECERS-E (educational quality) or SSTEWS scores (quality of staff / child interaction). This may relate to the small sample size and relative homogeneity (i.e. limited range in quality scores) of these settings; with a larger and more variable sample it would generally be easier to detect any relationships between variables that may exist.

Comparing quality between the settings for two-year-old and for three- to four-year-old children

There was a small but statistically significant difference in mean SSTEWS scores (quality of staff / child interaction) between the settings for two-year-olds and those for three- to four-year-olds. Mean SSTEWS scores for settings for two-year-olds were 4.49, whereas mean SSTEWS scores for settings for three- to four-year-olds were 4.70, although for both ages the mean score was within the 'adequate' range. Additional analyses suggest that this difference in quality was partly attributable to the higher levels of staff and manager qualification at the settings for three- to four-year-olds.

Comparing quality by region, settings type, area deprivation, and over time

ECEC setting quality showed considerable variation by region and by type of ECEC setting. The different distribution of types of ECEC settings by region partly explains the regional variations in quality.

There was little evidence of systematic variation in ECEC setting quality by Index of Multiple Deprivation, a measure of relative disadvantage of the areas in which settings are located.

The comparison of data from SEED and the Effective Provision of Pre-School Education (EPPE) Project¹³ (data collected 1998-1999) indicated an increase in the quality of settings for three- to four-year-olds over time. An increase in the qualification level for both managers and staff in settings was also observed from when the EPPE Project interviews were carried out in 1998. It is probable that the increase of the qualification level of managers and staff is related to the rise in quality levels. There may be other factors related to the apparent rise in quality levels, such as the other structural characteristics that are linked to process quality in this report.

¹³ Sylva et.al, 1999a.

Conclusion

The findings indicate that process quality across all types of settings was generally sufficient, with adequate or greater ratings often seen in private and voluntary settings as well as nursery classes / schools and children's centre settings. Furthermore, quality appears to have improved in England over the past 16 years across settings. This may be associated with concurrent improvements in staff qualifications among other factors.

Although quality is generally high, some variation was observed by setting type and by age group. Nursery classes / schools, as well as children's centres, tend to score higher on process quality than private and voluntary settings which make up the majority of provision, although differences between nursery classes and schools cannot be established in this report due to limitations in the numbers of these settings. Furthermore, higher process quality scores on the SSTEWS, a measure of quality of interactions between staff and children, were observed in three- to four-year-old settings than in two-year-old settings. These differences are partly explained by differences in the levels of staff and manager qualification. These findings indicate that, although quality is often adequate, there is scope to increase the quality of private and voluntary settings in particular. In addition, focussing on improving quality for two-year-old settings may be of particular importance.

A number of structural characteristics were identified that relate to process quality and may therefore be targets for change to improve ECEC quality. These include staff qualifications, staff training and turnover, staff to child ratios, the age range of children at settings, size of settings and whether or not settings offered specialist SEN/D provision. Variation was seen according to type of setting, i.e. whether settings were private, voluntary, nursery classes / schools or children's centres, as well as the age of children studied.

At private settings the strongest predictor of both quality measures for two-year-old settings was a higher overall staff to child ratio (i.e. fewer children per member of staff across the whole setting), while the strongest predictor of all quality measures for three- to four-year-old settings was a higher overall level of staff qualification. Other predictors of quality for both two- and three- to four-year-olds in private settings were a narrower age range (i.e. minimum age for children of two years accepted at the setting or a lower maximum age), and the setting having a larger number of places. Having specialist SEN/D provision was also associated with better educational quality at three- to four-year-old private settings.

For voluntary settings, a strong predictor of setting quality for both age groups was having a training plan in place. For the three- to four-year-old voluntary settings a higher overall staff to child ratio across the whole setting (i.e. fewer children per member of staff) was also associated with higher overall quality and a higher staff to child ratio for three- to four-year-olds (fewer three- to four-year-olds per member of staff) was associated with higher educational quality. One issue that may require further research is the association

found at voluntary settings between not having specialist SEN/D provision and higher setting quality.

At nursery classes / schools a lower maximum age for children accepted at the setting was predictive of higher overall quality and educational quality, whilst having a training budget was associated with better educational quality and staff / child interactions. A lower rate of staff turnover was also significant for improved staff / child interactions for nursery class / schools.

Addressing these structural factors set out above may therefore be a route to improving the quality of early years provision.

Although regional variation in setting quality was observed, this partly relates to regional differences in the distribution of setting types since areas of lower quality appear to have more private and voluntary settings and fewer nursery classes / schools or children's centre settings. Furthermore, regional variation does not appear to relate to area deprivation, given that findings indicate that children in deprived areas are equally likely to receive good quality provision as children in less deprived areas. Given that previous studies have indicated variation in quality relating to area deprivation, this may indicate that efforts to address quality in deprived areas have been effective.

The findings from this study indicate that the quality of ECEC is generally high, and appears to have improved over time, potentially in response to a number of policy changes. Further, the findings have identified a number of potential structural characteristics of settings that might be targets for efforts to improve the quality of early years provision. In particular, the findings highlight the potential benefits of a focus on improving the quality of private and voluntary provision, as well as the quality of provision for two-year-olds. Although previous research in England has indicated a relationship between process quality and child cognitive development outcomes (Sylva et al., 2004, Melhuish et al., 2010), this report has focused on linking structural characteristics and process quality. Quality has not yet been linked with outcomes in the SEED study; this is a question that will be addressed in future SEED reports.

References

- Department for Education (2017). *Study of Early Education and Development (SEED): Impact Study on Early Education Use and Child Outcomes up to Age Three*. London: Department for Education
- Harms, T., Cryer, D., & Clifford, R.M. (2005). *Early Childhood Environment Rating Scale: Revised Edition*. New York: Teachers College Press.
- Harms, T., Cryer, D., & Clifford, R.M. (2006). *Infant Toddler Environment Rating Scale: Revised Edition*. New York: Teachers College Press.
- Melhuish, E., Belsky, J., MacPherson, K., & Cullis, A. (2010). The quality of group childcare settings used by 3-4 year old children in Sure Start local programme areas and the relationship with child outcomes (Research report DFE-RR068).
- Siraj, I., Kingston D., Melhuish E. (2015). *Assessing Quality in Early Childhood Education and Care. Sustained shared thinking and emotional well-being (SSTEWE) scale for 2–5-year-olds provision*. London: Trentham Books.
- Speight, S., Maisey, R., Chanfreau, J., Haywood, S., Lord, C. and Hussey, D. (2015). Study of Early Education and Development. *Baseline Survey of Families. Research Report*. London: Department for Education. DFE-RR480. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/444852/DFE-RR480_Study_of_early_education_and_development_survey_of_families.pdf
- Sylva, K., Siraj-Blatchford, I. & Taggart, B. (2011). *ECERS-E The Four Curricular Subscales Extension to the Early Childhood Environment Rating Scale: 4th Edition with Planning Notes*. New York: Teachers College Press.
- Sylva, K., Siraj-Blatchford, I., Melhuish, E. C., Sammons, P., Taggart, B. , Evans, E., Dobson, A., Jeavons, M., Lewis, K., Morahan, M. & Sadler, S. (1999a). *The Effective Provision of Pre-school Education Project, Technical Paper 6: Characteristics of the centres in the EPPE sample: Observational Profiles*. London: IOE / DfEE.
- Sylva, K., Melhuish, E.C., Sammons, P., Siraj, I. and Taggart, B. (2004). *The Effective Provision of Pre-School Education (EPPE) Project: Technical Paper 12 - The Final Report: Effective Pre-School Education*. London: DfES / IOE, University of London.
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2008). *Final report from the primary phase: Pre-school, school and family influences on children's development during Key Stage 2 (7-11)*. Nottingham, United Kingdom: Department for Children, Schools and Families.
- Sylva, K., Melhuish, E. C., Sammons, P., Siraj-Blatchford, I., Taggart, B., Toth, K., ... & Welcomme, W. (2012). *Effective pre-school, primary and secondary education 3-14 project (EPPSE 3-14)-Final report from the Key Stage 3 phase: influences on students' development from age 11-14*.



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