Research Report DFE-RR144c

Evaluation of the Graduate Leader Fund: Factors relating to quality: findings from the baseline study

Arjette Karemaker, Sandra Mathers, James Hall, Kathy Sylva and Sam Clemens

Department for Education

Content

Tables

Figures

Acknowledgements

Social surveys are the work of a team, and the authors would like to gratefully acknowledge the contribution of many colleagues. We would like to thank Deborah Sanders at the DfE for her support during the baseline stage of the project and the members of our Steering Group for their assistance and advice.

We are very grateful to Zeenat Ghumra, Natalia Kucirkova and Sophie Walsh at the University of Oxford who took part in the research, and to the fieldwork team who carried out the observations and collected the data.

We are also grateful to Christopher Price and Mary Baginsky at the Children's Workforce Development Council for their assistance and advice during the baseline phase of the project.

We also thank all the settings, their managers and staff, and the local authority staff who agreed to take part in the study – without their participation there would be no study and no report.

Executive Summary

Introduction and background

Since 2006 the Government has provided funding through the Transformation Fund (TF) to help professionalise the early years workforce and to deliver the Ten Year Strategy for Childcare. A total of £250 million was made available to private, voluntary and independent (PVI) early years settings to fulfil these aims. In August 2007 the TF was replaced by the Graduate Leader Fund (GLF) which provided a further £305 million in funding between April 2008 and March 2011.

The GLF supports all full day care PVI sector providers in employing a graduate or **Early Years Professional (EYP)** by 2015, to lead practice across the Early Years Foundation Stage (EYFS). The role of these graduate leaders is to support and mentor others, as well as to model skills and good practice to secure high quality provision. From April 2011 LAs have been funding support for EYPs in PVI settings through the Early Intervention Grant.

The National Evaluation of the Graduate Leader Fund (2007-2011) was commissioned by the former Department for Education and Skills (DfES) and carried out by a consortium of researchers from the National Centre for Social Research (NatCen), the University of Oxford and the Institute of Education (University of London). The main aim of the national evaluation was to **assess the implementation of the Graduate Leader Fund and its impact on the quality of early years provision in the PVI sector**. This report presents the findings from the baseline quality assessments, carried out in 2007 and 2008.

Methodology

The University of Oxford carried out a 'before and after' impact study to assess whether the GLF funding (and specifically, the presence of an **Early Years Professional or EYP**) had an impact on the quality of provision offered to children. Data were collected from a sample of PVI settings visited at two time-points, with approximately two years between the baseline and follow-up assessments.

The baseline quality visits (November 2007-July 2008) aimed to gather baseline data on quality of provision and setting characteristics prior to any settings gaining an EYP. The quality of provision in 323 childcare settings was assessed using systematic observational rating scales: the Early Childhood Environment Rating Scale-Revised Edition (ECERS-R) (Harms, Clifford & Cryer, 2005), its UK curricular extension the Early Childhood Environment Rating Scale-Extension (ECERS-E) (Sylva, Siraj-Blatchford & Taggart, 2003) and the Infant Toddler Environment Rating Scale-Revised Edition (ITERS-R) (Harms, Cryer & Clifford, 2003). Each setting was visited for up to two days to carry out observations and to gather information on the qualifications of the whole childcare staff team, including all childcare-related qualifications currently held and qualifications being worked towards. In addition, information about general setting characteristics was collected via questionnaires.

Key findings

This chapter presents findings on the 'predictors of quality' at the baseline stage of the GLF evaluation.

ECERS-R (assesses overall quality for pre-school children aged 30 months to 5 years)

- For pre-school children having a teacher or a graduate on the staff team offered higher quality of provision.
- When the qualifications of the whole staff team were considered, childcare qualifications *being worked towards* were a more significant predictor of quality than currently held qualifications. The average level of qualifications being worked towards was an important predictor of overall quality and was also related to a number of individual dimensions of quality.
- The relationships between qualifications being worked towards and quality were stronger for long-standing staff members.
- Staff-child ratios were related to the quality of staff-child interactions (the more children per staff member, the lower the quality of interactions).
- The quality of care routines was higher in rooms providing for younger children and conversely, lower in rooms providing for a greater proportion of children over four4 years.

ECERS-E (assesses curricular quality for children aged three to five years)

- As with the ECERS-R, qualifications were an important predictor of curricular quality. The presence of a qualified *teacher* and the level of qualifications being worked towards by the staff team as whole were the most significant quality predictors.
- As with the ECERS-R, the level of qualifications being worked towards (by the whole childcare staff team) was more related to quality than the level of currently held qualifications.
- Mean years of service at the setting was found to be a predictor of quality for the '*diversity*' subscale.

ITERS-R (assesses overall quality for children aged from birth to 30 months)

- For the infant and toddler rooms observed (children from birth to 30 months) only two factors were found to be related to observed quality:
    - length of service (for the whole staff team): settings where the mean length of service was longer offered higher quality provision for listening and talking.
    - child-staff ratios within the relevant room: rooms with fewer children per adult offered higher quality of care routines (and vice versa).

Conclusions

The baseline study identified a number of factors related to the quality of provision offered to children in the impact study sample. These included qualifications, staff length of service and staff-child ratios. These findings support previous research in identifying relationships between quality and qualifications and therefore support the aims of the GLF. They add to existing literature and also provided valuable information to inform the final stages of the GLF evaluation and analysis (see Mathers et al., 2011a).

1 Introduction

1.1 Graduate Leader Fund policy background

The Government has provided funding since 2006 to help transform and professionalise the early years workforce and to deliver the Ten Year Strategy for Childcare. A key element of this approach has been the development of a graduate-led workforce, based on the findings of research such as the EPPE project (Sylva et al., 2003), which highlighted the relationship between qualifications and the quality of early years provision, as well as differences in quality between the maintained and the private, voluntary and independent (PVI) sectors.

The 2006 Childcare Act abolished the distinction between care and education for young children and set the scene for the introduction of a new Early Years Foundation Stage (EYFS) curriculum for the birth to five age range (DfES, 2007), as well as the introduction of a new professional status for the early years workforce; the **Early Years Professional Status (EYPS).**

Funding to support workforce reform in the PVI sector was provided by the Transformation Fund (TF), also established in 2006 and providing £250 million in funding to early years settings via their local authorities (LAs). In April 2008 the TF was superseded by the Graduate Leader Fund (GLF), which provided a further £305 million in funding to support all full day care PVI sector providers in employing a graduate or Early Years Professional (EYP) by 2015. The ring-fenced GLF funding ended in March 2011; from April 2011 LAs are required to support the development of EYPs in PVI settings through the Early Intervention Grant.

1.2 The National Evaluation of the Graduate Leader Fund

In June 2007, the (former) Department for Education and Skills (DfES)[1] commissioned a consortium of researchers from the National Centre for Social Research (NatCen), the University of Oxford and the Institute of Education (University of London) to undertake an evaluation of the TF. The aims and design of the evaluation were revised in August 2007 to reflect the policy transition from the TF to the GLF, and the research was completed in the spring of 2011. The main aim of the evaluation was to **assess the implementation of the Graduate Leader Fund and its impact on the quality of early years provision in the PVI sector**.

[1] Most recently Department for Children, Schools and Families (DCSF) and since May 2010 the Department for Education (DfE).

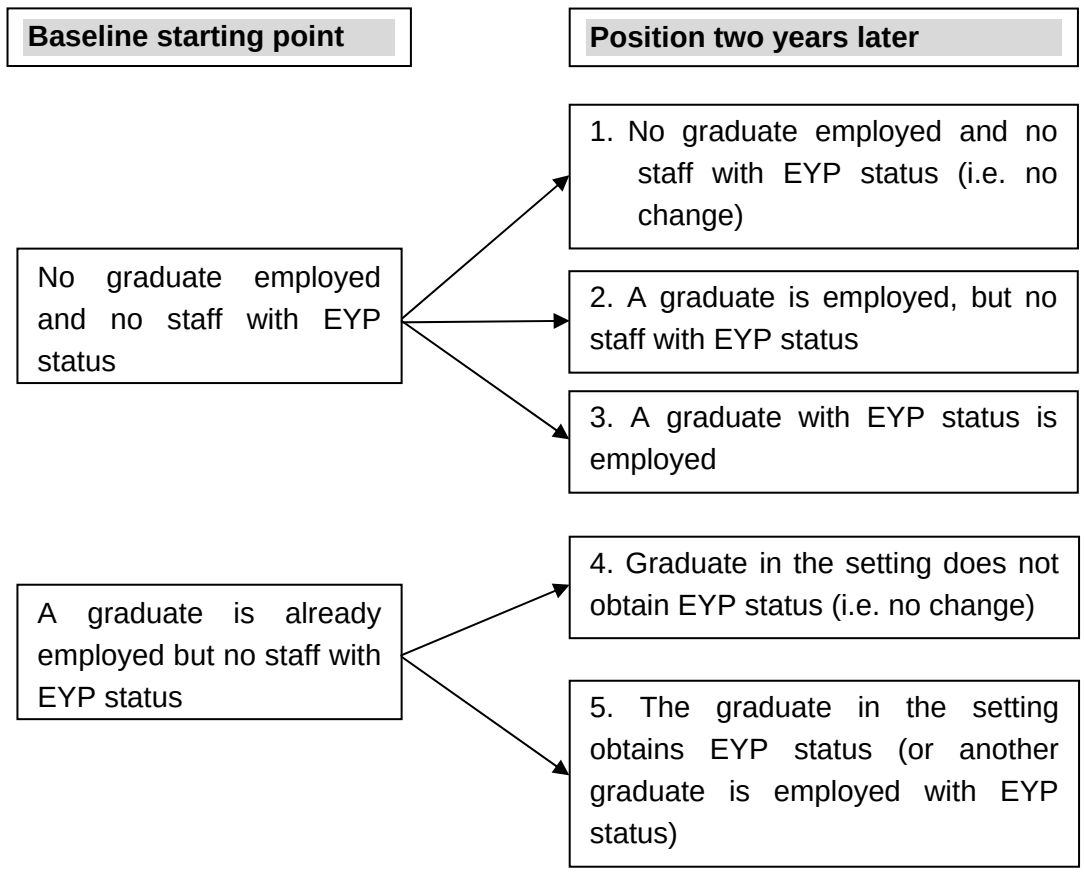
1.3 The impact study

At the heart of the GLF evaluation is the impact study, which aimed to identify the impact of Early Years Professional Status (EYPS) on quality – both at a single time-point, and the impact of gaining a graduate or an EYP on change in quality over time.

The University of Oxford carried out a 'before and after' quality study to assess whether the GLF funding (and specifically, the presence of an **Early Years Professional or EYP**) had an impact on the quality of provision offered to children. Data were collected from a sample of PVI settings visited at two time-points (November 2007-July 2008 and February-October 2010), with approximately two years between the baseline and follow-up assessments. The main purpose of the visits was to assess the quality of provision at each time-point, using the Early Childhood Environment Rating Scales (ECERS and ITERS, see Section 1.5).

Figure 1.1 provides an overview of the different leadership trajectories explored[2].

Figure 1.1 Leadership change scenarios to be tested in the impact study



This report presents findings from the baseline quality assessments and was **not intended to stand alone as a study in its own right**. As none of the settings had an Early Years Professional at this stage, no conclusions were drawn about the impact of EYPS on quality of provision. However, a large amount of valuable information was collected, both on the quality

[2] Further detail on all the components of the evaluation along with details of where each element is reported are summarised in Appendix A. A Technical Report is also available (see Mathers et al., 2011b).

of provision offered and on a range of other characteristics of the sample settings (including qualifications). This report sets out to present the early baseline findings and also to explore the 'predictors' of quality. We wanted to know which centres were providing the highest quality care, and which characteristics of these sample settings (e.g. qualifications, staff experience in childcare, staff turnover) were most related to the quality of provision offered. Even at this baseline stage, these findings are interesting and relevant both in the context of existing research and to provide important messages about priorities for childcare. This report is therefore intended not only for policy makers, but also for practitioners and owners/managers of early years settings. In addition, the baseline analysis was invaluable in informing and refining the data collection and analysis at the follow-up stage of the evaluation. The overall conclusions of the evaluation (following completion of the follow-up assessments in 2010) are reported in the Final Report (Mathers et al., 2011a).

1.4 The sample

The sample for the baseline study included 323 private, voluntary or independent (PVI) full day childcare settings in England. These were selected from a larger sample of settings that took part in a baseline survey conducted by NatCen between August and December 2007[3]. Settings were selected for the impact study on the basis that they had room to improve their qualification levels (either from graduate level to EYP or from non-graduate level to graduate) and that they appeared motivated to do so. They were therefore the most pro-active of settings and may not represent the average provider. It is for this reason that the actual quality ratings achieved by the baseline settings are not presented here.

The Technical Report (Mathers et al., 2011b) provides more detail on the sampling methods and characteristics of the sample settings.

1.5 Data collection

Researchers spent up to two days in each setting:

- a day observing provision for children aged 30 months to 5 years
- half a day observing the provision for children under 30 months
- half a day gathering general information about the setting and the qualifications of staff

Three observational rating scales were used to assess quality of provision:

- the Early Childhood Environment Rating Scale-Revised Edition (**ECERS-R**; Harms, Clifford & Cryer, 2005), designed to assess provision for children from 30 months to 5 years
- the Early Childhood Environment Rating Scale-Extension (**ECERS-E**; Sylva, Siraj-Blatchford & Taggart , 2003) designed to assess curricular provision for children aged three to five years
- the Infant Toddler Environment Rating Scale-Revised Edition (**ITERS-**R; Harms, Cryer & Clifford, 2003), which assesses provision for children from birth to 30 months

[3] For more details on the baseline sample: see Technical Report (Mathers et al., 2011b).

Further detail on the ECERS and ITERS scales, and what they measure, is provided in Appendix B.

Specially designed questionnaires were used to collect general information about setting characteristics, particularly those thought to relate to quality of provision. Data were gathered on:

- qualifications of childcare staff (e.g. NVQ level 3, degree)
- other characteristics of childcare staff (e.g. experience, age)
- characteristics of the settings themselves (e.g. size, sector)
- characteristics of the rooms observed (e.g. the age of children catered for, ratio)

The questionnaires used to gather data on qualifications and setting characteristics are shown in the Technical Report (Mathers et al., 2011b).

1.6 Analysis strategy

Multiple regression analyses were carried out to explore which setting characteristics were most related to quality of provision in the sample settings. For each of the quality scales used (ECERS-R, ECERS-E and ITERS-R), a number of different regression analyses were carried out:

- one for the 'childcare quality' mean (ECERS-R and ITERS-R only)
- one for the 'overall quality' mean (ECERS-E)
- one for each of the individual subscales

The '**childcare quality**' is the mean of the first six subscales of the ECERS-R or ITERS-R. The seventh subscale *('parents and staff')* is considered separately and not reported as part of this baseline summary. Findings for this subscale are reported in greater depth as part of the follow-up analysis (see Mathers et al., 2011a). The **'overall quality'** of curricular provision is the mean of the four subscales of the ECERS-E. The individual **subscales** are the mean of items in each individual subscale, e.g. '*space and furnishings', 'care routines', 'language/reasoning', 'literacy', and 'diversity'*.

Regression analysis allows many possible 'predictors' to be entered into an analysis at one time, to explore their impact on the outcome measure (in this case, quality). The regression model allows the *individual* impact of each variable to be seen, while all others are 'held constant' or accounted for. So for example, the analysis allows us to look at the impact that having a graduate has on quality, whilst accounting for or 'holding constant' all the other variables measured – e.g. the qualifications of other staff, experience in childcare and so on. In this way we can put the magnifying glass onto one characteristic at a time.

Moderator effects

The impact of qualifications on quality was of particular interest in this analysis. During the early stages of the analysis, it was apparent that the impact of qualifications could be quite different depending on the amount of time staff had spent working at their setting. We were interested to know whether the length of time a staff member had worked at a setting (i.e.

their ‘length of service’) affected the way in which their qualifications impacted on quality. For example, is it more effective to raise the qualifications of long-standing members of staff – or do the qualifications of new recruits have more of an influence on quality?

The analysis explored this question by creating ‘moderator’ variables. We considered ‘length of service’ (years worked at the setting) to be a potential **moderator** of the effects of qualifications on quality. Each of the four qualification measures was combined with the time measure to create four moderators – for example ‘mean childcare qualification level x mean length of service’. These moderators were entered into the regression model alongside the other predictors to explore the way that qualification effects varied according to the amount of time staff worked at their childcare settings[4].

1.7 Structure of this report

The structure of the report is as follows:

- Chapter 1 (this chapter) introduces the impact study as well as the methodology and analysis strategy of the baseline study.
- Chapter 2 identifies the predictors of quality in the sample settings at the baseline time-point.
- Chapter 3 summarises the baseline findings and presents conclusions.

[4] The moderator variables provided a useful means of exploring the relationship between quality and qualifications at the baseline stage. As a result of this baseline analysis, it was decided not to use moderator variables as part of the follow-up analysis.

2 Factors relating to quality: findings from the baseline study

Chapter summary

This chapter presents findings on the 'predictors of quality' at the baseline stage of the GLF evaluation.

ECERS-R (assesses overall quality for pre-school children aged 30 months to 5 years)

- For pre-school children, having a teacher or a graduate on the staff team offered higher quality of provision (as measured by the ECERS-R).
- When the qualifications of the whole staff team were considered, childcare qualifications *being worked towards* were a more significant predictor of quality than currently held qualifications. The average level of qualifications being worked towards was an important predictor of overall quality and was also related to a number of individual dimensions of quality.
- The relationships between qualifications being worked towards and quality were stronger for long-standing staff members.
- Staff-child ratios were related to the quality of staff-child interactions (the more children per staff member, the lower the quality of interactions).
- The quality of care routines was higher in rooms providing for younger children and conversely, lower in rooms providing for a greater proportion of children over four years.

ECERS-E (assesses curricular quality for children aged three to five years)

- As with the ECERS-R, qualifications were an important predictor of curricular quality (as measured by the ECERS-E). The presence of a qualified teacher and the level of qualifications being worked towards by the staff team as whole, were the most significant quality predictors.
- As with the ECERS-R, the level of qualifications being worked towards (by the whole childcare staff team) was more related to quality than the level of currently held qualifications.
- Mean years of service at the setting was found to be a predictor of quality for the '*diversity*' subscale of the ECERS-E.

ITERS-R (assesses overall quality for children aged from birth to 30 months)

- For the infant and toddler rooms observed (children from birth to 30 months) only two factors were found to be related to observed quality:
    - 'length of service' (for the whole staff team): settings where the mean length of service was longer offered higher quality provision for listening and talking.
    - child-staff ratios within the relevant room: rooms with fewer children per adult offered higher quality of care routines (and vice versa).

2.1 Predictors of quality for children aged 30 months to 5 years (ECERS-R)

The ECERS-R considers the quality of the learning environment for pre-school children aged 30 months to 5 years, including both the physical environment and the pedagogical, social and 'emotional' environment. It aligns closely with the Early Years Foundation Stage (EYFS) and addresses many of the same broad aspects of practice. Table 2.1 shows the predictors of overall childcare quality and of the individual dimensions of childcare quality assessed by ECERS-R subscales. In each case, the direction of the effect is indicated by '+' or '-'. So, for example, a positive relationship between the qualifications of childcare staff being worked towards and the quality of activities is represented by a '+', indicating that *the higher the level of qualifications being worked towards the better the range and accessibility of resources to support different types of play, learning and development* (significant at the $p<0.05$ level). Full details on the analysis strategy are shown in the Technical Report (Mathers et al., 2011b).

Qualification effects

Overall, the qualifications of staff at the sample settings were the most important predictor of quality for children aged 30 months to 5 years, as measured by the ECERS-R[5]. Looking first at higher level qualifications, settings with either a qualified teacher or graduate on the staff team offered significantly better quality of provision than settings without a teacher or graduate. '**Teacher presence'** was a stronger predictor of quality than 'graduate presence'[6], significantly related to higher overall quality of provision and also to higher quality in four of the six individual dimensions of quality considered in this analysis (Table 2.1). Settings with a qualified teacher on the staff team achieved higher scores on the '*personal care routines'*, '*language and reasoning',* '*interaction'* and '*program structure'* subscales of the ECERS-R.

The *'personal care routines'* items measure the extent to which settings and staff meet the more basic of the welfare requirements (e.g. health, safety, routines for sleeping, toileting, mealtimes), ensure routines are individualised, and encourage children's independence and self-help skills. '*Language and reasoning'* is possibly the most educational of the ECERS-R subscales, and the findings for this subscale suggest that having a teacher in place significantly improved the quality of support for children's emerging communication and thinking skills. The *'language and reasoning'* items measure, for example, the extent to which adults extend children's verbal contributions in conversation, 'scaffold' conversations and use sustained shared thinking techniques. The '*program structure'* subscale is another of the more educational subscales, and relates to the schedule of the day (e.g. the balance between adult-directed and child-initiated play). The *'interaction'* subscale measures the quality of supervision, behaviour management and the 'emotional environment'. These aspects of quality were all higher in settings with a qualified teacher. Settings with a

[5] Both in terms of the beta weight and in terms of the number of effects found (see Technical Report; Mathers et al., 2011b).
[6] Both in terms of the beta weight and in terms of the number of effects found (see Technical Report; Mathers et al., 2011b).

graduate also offered higher quality than those settings without a graduate on two of the individual dimensions of quality assessed by the ECERS-R (‘*personal care routines’* and ‘*language and reasoning’)*.

Table 2.1 Predictors of quality (ECERS-R) for children aged 30 months to 5 years

	Childcare quality[a]	Space & Furnishings	Personal Care Routines	Language - Reasoning	Activities	Interaction	Program Structure
STAFF CHARACTERISTICS							
Mean childcare qualification level of staff (whole setting)			-				
Mean childcare qualification level *being worked towards* (whole setting)	+ (M)		+ (M)	+	+		+
Presence of *graduate* on staff			+	+			
Presence of *teacher* on staff	+		+	+		+	+
Mean age of staff team (whole setting)							
Mean years of relevant experience (whole setting)							
Mean years worked (at current setting) by staff team							
SETTING CHARACTERISTICS							
Staff turnover							
Number of paid childcare staff (measure of setting size)							
ROOM CHARACTERISTICS							
Highest number of children present during observation							
No. of children per childcare staff member in the room (ratio)						-	
Proportion of children on register aged over 4 years			-				
No. of children on register with SEN							
Bases	227	227	227	227	227	227	227

Note: The table summarises the results from a number of separate regression analyses. Full regression tables are shown in the Technical Report (Mathers et al., 2011b).

a Childcare quality score (all items from subscales 1 to 6), excluding the 'parents & staff' subscale

'+' indicates a significant positive relationship between quality and the relevant staff/setting/room characteristic (significant at the 0.05 level). '-' indicates a significant negative relationship

(M) = Moderated by mean years worked (average length of service for the staff team)

Turning now to the qualifications of all staff in the setting, an interesting finding was identified: the level of **qualifications being worked towards** was more related to quality than the level of currently held qualifications. The mean level of qualifications being worked towards was significantly related to overall childcare quality and also to the quality of *'personal care routines', 'language and reasoning'*, *'activities'* and '*program structure'*[7]. Other than personal care routines, these ECERS-R subscales relate primarily to the provision of a stimulating learning environment for children. For example, the *'activities'* subscale considers the range and accessibility of resources to support different types of play, learning and development.

When interpreting these findings, it should be remembered that this baseline sample had very particular characteristics (i.e. no EYP, but with an intention to gain a staff member with a graduate qualification and/or EYPS). It is possible that, for this particular sample, the drive to improve qualifications meant that qualifications being worked towards were more directly related to quality than existing qualifications. For example, it could be that settings in which many staff members are working towards higher level qualifications exhibit a greater openness to new knowledge, which in turn has an impact on overall quality. The follow-up analysis has provided an opportunity to explore these hypotheses in greater depth, and in fact, at follow-up the balance shifted towards qualifications held rather than those being worked towards as a predictor of quality.

The findings for the '*personal care routines*' subscale were interesting and somewhat mixed. The mean level of qualifications being worked towards and the presence of a graduate or teacher on the staff team were all *positively* related to the quality of care routines. However, a *negative* relationship was identified between the mean level of currently held qualifications and the quality of care routines (i.e. the higher the mean childcare qualification level of the staff, the *lower* the quality of the care routines). The quality of care routines appears to have a complex relationship with qualifications.

Moderators of qualification effects

A potential moderator of the impact of qualifications on quality was tested: the mean length of time staff had worked at the setting (in years). This factor represents the 'potential' of each member of the staff team to impact on the quality of provision offered. 'Length of service' (years worked at the setting) was identified as a moderator of two of the qualification effects described above (this is marked by an 'M' in Table 2.1). The positive impact of qualifications being worked towards on overall childcare quality, and also on the quality of personal care routines, was stronger for staff who had worked at the setting for a long time. These results indicate that training up existing and long-term staff members is a positive strategy and one which may lead to benefits in terms of quality of provision. A number of other moderator

[7] Some effects were found only in the teacher or graduate regression model (see Technical Report; Mathers et al., 2011b).

effects were identified and are reported in the Technical Report (Mathers et al., 2011b); none were of particular interest in terms of interpretation.

Other staff characteristics

The analysis also considered a number of other characteristics of the staff teams working in the settings observed (e.g. experience, age), however no significant predictors were found.

Characteristics of the settings and/or rooms observed

Two characteristics of the rooms observed were significantly associated with the quality of provision: the age of the children in the group and the staff-child ratios in operation. The older the children in the group (i.e. the greater proportion of children aged over four years), the *lower* the quality of personal care routines. This may reflect the fact that staff encouraged greater independence for these older children, in terms of going to the toilet by themselves or using café/rolling-style snacks rather than whole group snacks. Use of these strategies can be very positive in terms of developing children's self-help skills, but can also make it more difficult to supervise hygiene routines such as hand-washing. Similarly, the relationship between children's age and the quality of care routines may reflect the difficult balance faced by staff in terms of supervision (i.e. between allowing children to explore and take 'safe risks' whilst also keeping them safe from potential harm).

The second important predictor of quality for the 30 month to 5 year age range was staff-child ratios. Ratios were related to the quality of interactions. The *'interaction'* subscale of the ECERS-R measures the quality of the emotional environment as well as the appropriateness of supervision and behaviour management. For the rooms observed, the fewer children per staff member the higher the quality of interactions; conversely, more children per adult meant lower quality interactions. This is of particular importance in light of the fact that settings with an Early Years Professional can operate ratios of 1:13 rather than the more usual 1:8. No significant relationships were identified between quality and the number of children with SEN, or the ages of the children in the group.

2.2 Predictors of curricular quality for children aged three to five years (ECERS-E)

The extension to the ECERS-R (the ECERS-E) supplements the broad and balanced focus of the ECERS-R by providing more curricular focus. Its subscales contain supplementary items covering four specific aspects of learning and development ('*literacy*', '*mathematics*', '*science/environment*' and '*diversity*').

Table 2.2 shows the predictors of curricular quality within the sample settings, grouped according to type. It presents the relationships between each of these characteristics and overall mean quality, as well as findings for each individual

dimension of quality assessed by the ECERS-E subscales ('*literacy*', '*mathematics*', '*science/environment*' and '*diversity*'). In each case, the direction of the effect is indicated by '+' or '-'. So, for example, a positive relationship between the qualifications of childcare staff and the quality of literacy provision is represented by a '+'.

Qualification effects

Table 2.2 shows clearly that staff qualifications were the most important overall predictor of curricular quality. The differences between graduate and teacher effects were more evident than for the ECERS-R, with **teacher** presence emerging as a more significant predictor of curricular quality than graduate presence[8]. The positive relationship between teacher presence and quality was identified for the overall quality of curricular provision and also for three of the four individual subscales of the ECERS-E ('*literacy'*, '*maths*' and '*diversity*').

Table 2.2 also reveals that the qualifications of the whole staff team were related to the quality of curricular provision. However as with the ECERS-R, it was the mean qualification level **being worked towards** rather than the mean level of qualifications already held, which predicted quality. The positive relationships between quality and the qualifications being worked towards were identified for overall curricular quality and for all three[9] of the individual aspects measured by the ECERS-E ('*literacy*', '*maths*' and '*diversity*'). As suggested in the previous section, the relatively greater importance of qualifications being worked towards could be related to the particular qualities of the GLF sample at baseline. Settings were only selected for the sample if they did not have an EYP on the staff team but showed an intention to gain a graduate and/or an EYP. The impetus of these GLF settings to improve the qualifications and leadership qualities of their staff may have resulted in qualifications being worked towards being a more relevant predictor of quality than currently held qualifications.

Staff characteristics

Mean years of service at the setting was found to be a predictor of quality for the '*diversity*' subscale of the ECERS-E. This subscale considers how well settings cater for the individual needs of children, and how successfully they celebrate and acknowledge different interests, developmental stages, genders and cultures. It may well be that a well-established staff team is better set up to provide for children's individual needs – not only because they may know the children better, but also because they have had time to establish sound procedures for individual planning, observation and assessment. No other significant effects were identified in relation to the characteristics of the settings or the rooms observed.

[8] Both in terms of beta weights and also in terms of the number of significant effects found.

[9] The ANOVA for the regression analysis predicting scores on the fourth ECERS-E science subscale was not significant.

Table 2.2 Predictors of curricular quality (ECERS-E) for children aged three to five years

	Overall quality[a]	Literacy	Mathematics	Science[b]	Diversity
STAFF CHARACTERISTICS					
Mean childcare qualification level of staff (whole setting)					
Mean childcare qualification level *being worked towards* (whole setting)	+	+	+		+
Presence of *graduate* on staff					
Presence of *teacher* on staff	+	+	+		+
Mean age of staff team (whole setting)					
Mean years of relevant experience (whole setting)					
Mean years worked (at current setting) by staff team					+
SETTING CHARACTERISTICS					
Staff turnover					
Number of paid childcare staff (measure of setting size)					
ROOM CHARACTERISTICS					
Highest number of children present during observation					
No. of children per childcare staff member in the room (ratio)					
Proportion of children on register aged over 4 years					
No. of children on register with SEN					
Bases	227	227	227		227

Note: The table summarises the results from a number of separate regression analyses. Full regression tables are shown in the Technical Report (Mathers et al., 2011b).

a Overall quality score (mean of all items)

b The ANOVA for the regression analysis predicting scores on the ECERS-E science subscale was not significant.

'+' indicates a significant positive relationship between quality and the relevant staff/setting/room characteristic (significant at the 0.05 level). '-' indicates a significant negative relationship.

2.3 Predictors of quality for children from birth to 30 months (ITERS-R)

The Infant Toddler Environment Rating Scale (**ITERS-R**) is a partner scale to the ECERS-R, identical in structure but adapted to assess the quality of provision for very young children between birth and 30 months.

Table 2.3 shows the predictors of overall 'childcare quality' for infants and toddlers (the mean of items in the ITERS-R subscales one to six), grouped according to type. The table also shows which individual dimensions of childcare quality, as assessed by the six ITERS-R **subscales**, were significantly related to each of the characteristics measured. In each case, the direction of the effect is indicated by '+' or '-'.

Only two factors were found to be related to observed quality for this age range:

- 'length of service' (for the whole staff team)
- child-staff ratios within the relevant room

Qualification effects

The most noticeable finding for the baby and toddler rooms observed at baseline is the lack of significant qualification effects, in contrast to the findings for the 30 months to 5 year age range, where several qualification variables were predictive of provision quality. For children under 30 months no qualification effects were identified. There are several possible reasons for the lack of qualification findings for this age group, as compared with the older children. The disparity may be related to the characteristics of the staff working in rooms for younger children. It is possible, for example, that the better qualified staff are not being deployed to work in these rooms or that staff in rooms for younger children are not receiving the same professional development opportunities as colleagues working with older children. Or alternatively it is possible that qualifications and quality are simply not so closely related for this age range.

During the baseline visits, qualifications data were gathered for all staff at the setting and it was therefore not possible to explore exactly which staff members worked in the rooms observed. This information has been gathered during the follow-up assessments to allow a more detailed examination of these different hypotheses. Analysis of follow-up data gathered at the time of writing suggests that the first hypothesis may be true (i.e. the most highly qualified staff are not being deployed to work with the youngest children). In settings with an Early Years Professional at the follow-up stage, data were gathered on the number of hours these EYPs spent working with each age range observed. Data showed that EYPs in the sample settings spent an average of 69 per cent of their time working in the preschool rooms observed, but only 19 per cent of their time in the infants and toddlers rooms observed. In the follow-up analysis, possible reasons for the lack of significant quality

effects for this age group, as compared with the older children, have been explored in greater depth (see Final Report; Mathers et al., 2011a).

Staff characteristics

The number of years staff had worked at their settings was significantly related to the quality of 'listening and talking'. This ITERS subscale measures the extent to which adults help young children to understand and use language, and to communicate with others both verbally and non-verbally. Settings where the mean length of service was longer offered higher quality provision for listening and talking, which may reflect the positive impact of having a stable and long-standing staff team.

Characteristics of the setting and/or rooms observed

The other significant predictor of quality for children aged from birth to 30 months was child-staff ratios. Ratios proved particularly important in relation to the quality of care routines. This dimension of quality relates most closely to attachment and to the key person approach, key considerations for this young age range. As could be expected, the quality of care routines was higher when there were fewer children per adult. Conversely, the quality of care routines was lower when each staff member had more children to care for. The relationship between ratios and care routines was only identified for the ITERS, suggesting that ratios may be more related to the quality of care routines for younger children rather than for the older age range.

Table 2.3 Predictors of quality (ITERS-R) for children from birth to 30 months

	Childcare quality[a]	Space & Furnishings	Personal Care Routines	Listening & Talking	Activities	Interaction	Program Structure
STAFF CHARACTERISTICS							
Mean childcare qualification level of staff (whole setting)							
Mean childcare qualification level *being worked towards* (whole setting)							
Presence of *graduate* on staff							
Presence of *teacher* on staff							
Mean age of staff team (whole setting)							
Mean years of relevant experience (whole setting)							
Mean years worked (at current setting) by staff team				+			
SETTING CHARACTERISTICS							
Staff turnover							
Number of paid childcare staff (measure of setting size)							
ROOM CHARACTERISTICS							
Highest number of children present during observation							
No. of children per childcare staff member in the room (ratio)			-				
Proportion of children on register aged under 3 years							
No. of children on register with SEN							
Bases	184	184	184	184	184	184	184

Note: The table summarises the results from a number of separate regression analyses. Full regression tables are shown in the Technical Report (Mathers et al., 2011b).

a Childcare quality score (all items from subscales 1 to 6), excluding the 'parents & staff' subscale

'+' indicates a significant positive relationship between quality and the relevant staff/setting/room characteristic (significant at the 0.05 level). '-' indicates a significant negative relationship.

3 Summary of findings

Qualifications

- In line with many previous research studies (Sylva et al., 2003; Burchinal et al., 2002), **staff qualifications** were the most important predictor of provision quality for children aged 30 months to 5 years.
- For children aged 30 months to 5 years, settings with a **teacher** on the staff team offered significantly higher overall quality of provision, as measured by the ECERS-R. This effect was found for the overall childcare quality as well as for a number of individual dimensions of quality – care routines, support for children's developing language and reasoning skills, the quality and warmth of adult-child interactions and the appropriateness of the daily structure and schedule. Settings with a **graduate** on the staff team offered significantly higher quality personal care routines and higher quality support for children's language and reasoning skills.
- When looking more specifically at the **quality of curricular provision** (ECERS-E) for the three to five age range, having a **teacher** on the staff team was a more significant predictor of quality than having a graduate on the staff team. Settings with a qualified teacher offered higher overall curricular quality as well as higher quality in the areas of literacy, mathematics and diversity (e.g. planning for individual learning needs and celebrating diversity).
- Qualifications were less strongly related to the quality of provision for **infants and toddlers** (ITERS-R). This is possibly due to the low numbers of highly qualified staff who worked in the room (i.e. those most likely to have an impact on quality). Data collected at the follow-up assessments showed that fewer well qualified staff worked with this young age range.
- An interesting theme was identified when considering the mean qualifications of all the staff working in the sample settings. For the older age range, the mean level of **qualifications being worked towards** was more related to quality than the level of **currently held qualifications**. Significant positive effects were identified for overall childcare quality (ECERS-R) and curricular quality (ECERS-E) as well as for many of the individual dimensions of quality assessed. Thus, settings in which staff teams were working towards higher levels of qualifications offered better quality of provision for the older children. When interpreting these findings it may help to remember that this baseline sample had very particular characteristics suited to the design of the GLF evaluation (i.e. no EYP at baseline, but intending to gain a staff member with a graduate qualification and/or EYP status). It is possible that, for this particular sample, the drive to improve qualifications meant that qualifications being worked towards were more directly related to quality than existing qualifications. It could be that settings in which many staff members are working towards higher level qualifications exhibit a greater openness to new knowledge and motivation to improve existing practice, which in turn has an impact on overall quality. The follow-up analysis allowed us to explore these hypotheses in more depth, and in fact, at follow-up the balance shifted towards qualifications held rather than those being worked towards as a predictor of quality.

Moderators of qualification effects

'Length of service' was identified as a moderator of qualification impacts in two cases. The effects of the mean level of qualifications being worked towards on overall quality, and on the quality of personal care routines (ECERS-R), were both stronger for staff teams with a long 'length of service'. This indicates that training up existing and long-term staff members is a positive strategy and one which may lead to benefits in terms of quality of provision.

Other staff characteristics

Mean years of service at the setting (i.e. the average length of time worked by all staff) was a significant predictor of scores on the ITERS-R listening and talking subscale and the ECERS-E diversity subscale. It is possible that a well-established staff team may be better set up to help young children to understand and use language, and to communicate with others both verbally and non-verbally. In addition they may be better at providing for children's individual needs – not only because they know the children better, but also perhaps because they have had time to establish sound procedures for individual observation, assessment and planning.

No relationships were identified between the age or experience of the staff teams working in the sample settings, although these were identified as predictors of quality at the follow-up stage (see Mathers et al., 2011a). It is possible that the refinements to data collection made as a result of the baseline analysis meant that the follow-up data was of higher quality, allowing these effects to be identified.

Characteristics of the rooms observed

The age of the children in the group was a significant predictor of quality for the older children (ECERS-R). The older the children in the group (i.e. the greater proportion of children aged over four years), the *lower* the quality of personal care routines. The subscale '*personal care routines*' measures the extent to which the children's basic welfare requirements are met, and considers areas such as health, safety and routines for sleeping, toileting and mealtimes. One possible reason for this finding is that staff might find it difficult to balance encouraging greater independence for the older children (e.g. going to the toilet by themselves) whilst also supervising hygiene routines such as hand-washing.

The final important predictor of quality was staff-child ratios. Ratios were related to the quality of care routines for the younger children (ITERS-R) and the quality of staff-child interactions for the older children (ECERS-R). For the rooms observed, the fewer children per staff member, the higher the quality of interactions – and conversely, more children per adult meant lower quality interactions. The interaction subscale of the ECERS-R assesses such essential elements of quality as whether staff *'play with children and show interest in what they do'*, '*react quickly to solve problems in a comforting and supportive way', 'help children develop appropriate social behaviour with their peers'* and provide '*appropriate supervision'* (both in terms of safety and 'active supervision' to support and scaffold children's play and learning). This relationship between staff-child ratios and quality was also identified at the follow-up stage. These findings on the relationships

between ratios and quality are of particular importance in light of the fact that settings with an Early Years Professional can operate ratios of 1:13 rather than the more usual 1:8 for the three to five age range.

Note of caution on interpretation

When reading these results it is important to remember that the settings taking part in this baseline study were not typical. Rather, they had particular characteristics which made them suitable for inclusion in the GLF National Evaluation. All settings were from the PVI sector, with a large majority from the private sector. The sample was deliberately selected to include settings without an Early Years Professional (EYP), but showing an intention to gain a graduate and/or an EYP. They were therefore the most pro-active of settings and may not represent the 'average' provider. Although the settings are not fully representative of the broader population of providers this baseline report provides useful evidence on the role of other factors in ensuring quality. These contextual findings offer important messages about priorities for childcare and education, and about the contexts in which practitioners were working.

Looking to the future

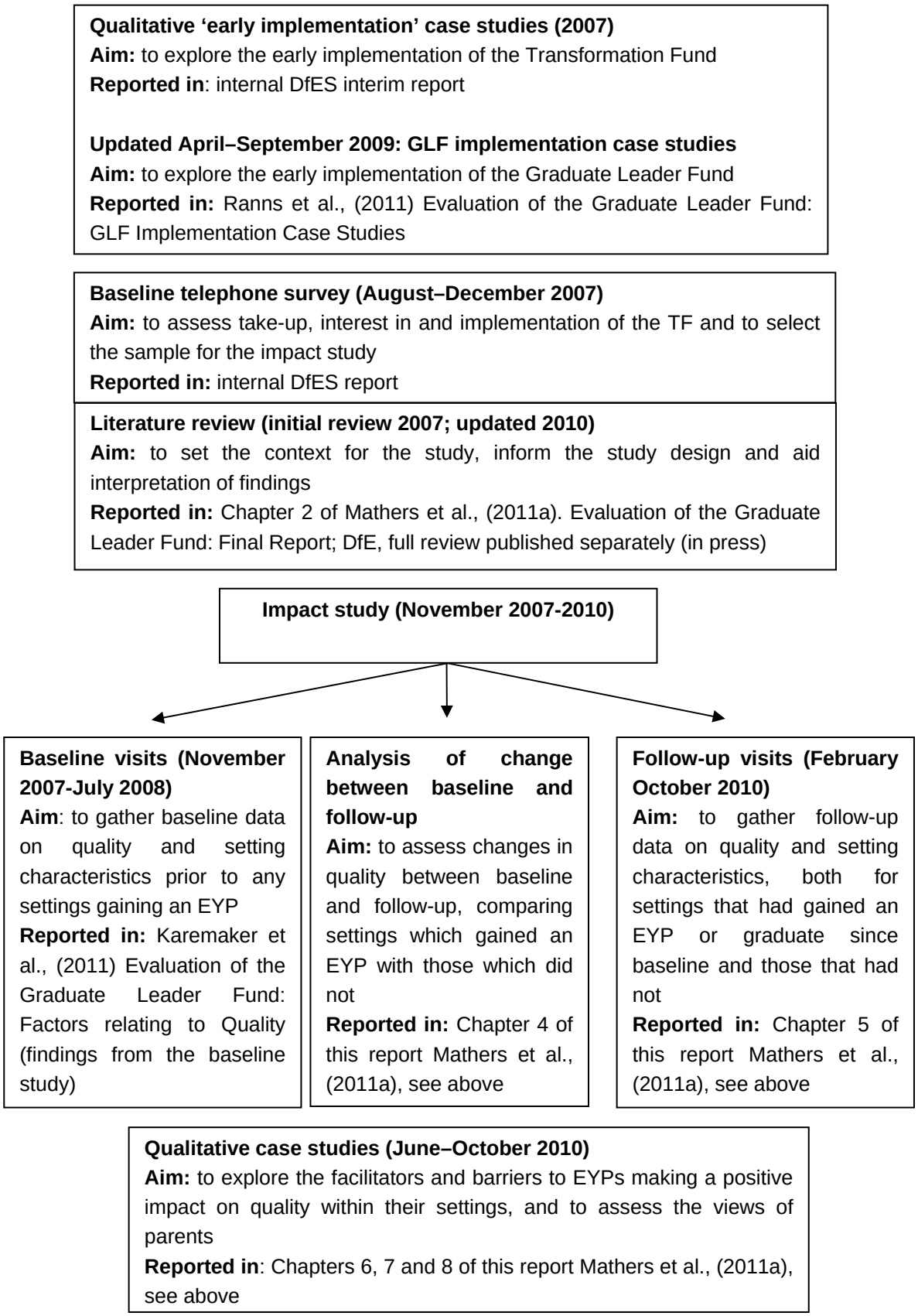
The follow-up quality assessments (carried out in 2010) provided the final piece of the puzzle and allowed us to explore the impact of Early Years Professional Status on quality as well as providing a means of developing the analyses summarised in this report.

The follow-up analysis was informed by this baseline analysis, which was used to refine the evaluation methods. Additional data were gathered at the follow-up stage, and changes were also made to the way some variables were created. For example, a new measure of staff qualifications was developed, using the highest childcare qualification of staff members working 10 hours or more in the rooms observed as part of the quality assessments. Using this measure rather than the setting-wide measure employed at the baseline stage allowed a stronger relationship to be identified between qualifications and quality in the rooms observed.

The overall conclusions of the evaluation are reported in the Final Report (Mathers et al., 2011a).

Appendix A Further details on the evaluation design

Appendix Figure A.1 Elements of the evaluation design and reporting details



Appendix B Quality assessment measures

The **ECERS-R** is a quality assessment tool, originally developed in the US but now used in many countries around the world for research and developing practice. It has had input from many researchers and practitioners over the years and provides a measurable 'profile' of quality in early years settings across a number of different dimensions of quality. The scale has been shown in many different research studies (both in the UK and elsewhere) to be a reliable and valid measure of quality, and to be strongly related to children's developmental outcomes (Sylva et al., 2003; Burchinal et al., 2002; Peisner-Feinberg & Burchinal, 1997).

The ECERS-R considers the quality of the learning environment in its broadest sense, i.e. the context needed for learning to take place. It describes both the characteristics of the physical environment and the pedagogical, social and 'emotional' environment. It aligns closely with the UK Early Years Foundation Stage (EYFS) and addresses many of the same broad aspects of practice. Like the EYFS, the ECERS considers the 'whole child' and several fundamental features of a quality environment are threaded throughout the scale. These include the basic welfare requirements such as health, safety and appropriate supervision; the extent to which children have independent access to stimulating resources and experiences (both indoors and out); the quality of social interactions and support for learning; and the extent to which adults provide an individual and nurturing environment to meet the needs of the 'unique child'.

The items of the ECERS-R are arranged under seven broad headings (known as **'subscales'**):

1. *'Space and furnishings'* (e.g. furniture for play and learning, display for children)
2. *'Personal care routines'* (e.g. health and safety practices, hygiene, mealtimes)
3. *'Language and reasoning'* (e.g. supporting children's developing communication)
4. *'Activities'* (e.g. fine motor activities, sand and water play)
5. *'Interactions'* (e.g. supervision, staff-child interactions and peer interactions)
6. *'Program structure'* (e.g. the balance between child-initiated and adult-directed play)
7. *'Parents and staff'* (e.g. provision for professional needs of staff, partnership with parents)

The first six subscales relate to **childcare quality**. The seventh subscale considers the extent to which settings work in partnership with **parents** as well as provision for **staff** members. This study focuses on the quality of provision for children (i.e. subscales one to six)[10]. The '*Parents and Staff*' subscale was completed during the quality observations,

[10] Previous research studies differ in their approach to using the ECERS-R and ITERS-R. Some use the whole scale, while others focus only on the childcare quality subscales (1-6).

but is not reported as part of this baseline analysis. It will be explored in greater depth during the follow-up phase.

Each of the seven subscales of the ECERS-R is made up of a number of individual **items**. In total there are 43 items within the ECERS-R, each of which are rated on a seven point scale with explicit indicators for scores of 1 (inadequate), 3 (minimal), 5 (good) and 7 (excellent). There are clear rules for giving even numbered scores between the 'anchored' criteria for the odd numbers.

Observers complete items and assign scores by rating specific statements or 'indicators' of quality. To score a 3 (minimal) on the 'Interactions among children' item for example, observers must see evidence that staff '*stop negative and hurtful peer interactions'* and that *'some positive peer interaction occurs*'. To score a 5, a 'good' setting might display more active support for peer interactions, for example staff *'modelling good social skills'* and *'helping children to develop appropriate social behaviour with peers'*. At the highest level, 'excellent' settings (scoring 7) might extend support in more explicit ways, for example by providing *'opportunities for children to work together to complete a task'*.

The extension to the ECERS-R (**the ECERS-E**) supplements the broad and balanced focus of the ECERS-R by providing more curricular focus. Its subscales contain supplementary items covering four specific aspects of learning and development (literacy, mathematics, science/environment and diversity). The ECERS-E, developed in the 1990s as part of the Effective Provision of Pre-School Education (EPPE) project (Sylva et al., 2003), was based on the curriculum guidance for the Foundation Stage. As with the ECERS-R, it aligns closely with the EYFS, particularly in the areas of communication, language and literacy (CLL), problem-solving, reasoning and numeracy (PSRN), knowledge and understanding of the world (KUW), inclusive practice and 'observation, assessment and planning'. The scale was explicitly designed to assess staff support for children's developing language and reasoning skills – an area in which the ECERS-R has been criticised as lacking rigour. The scoring system is identical to the ECERS-R, with scores ranging from 1 to 7.

The Infant Toddler Environment Rating Scale (**ITERS-R**) is a partner scale to the ECERS-R, identical in structure but adapted to assess provision for very young children between birth and 30 months. It also comprises seven subscales, six of which relate to childcare quality and one which assess provision for parents and staff members. As with the ECERS scales, items are scored on a 1 to 7 scale.

The following pages show an overview of subscales and items of the ECERS-R, ECERS-E and ITERS-R.

Appendix Figure 1 Overview of the Subscales and Items of the ECERS-R (Harms, Clifford & Cryer, 2005)

Space and Furnishings

- Indoor space
- Furniture for routine care, play and learning
- Furnishings for relaxation and comfort
- Room arrangement for play
- Space for privacy
- Child-related display
- Space for gross motor play
- Gross motor equipment

Personal Care Routines

- Greeting/departing
- Meals/snacks
- Nap/rest
- Toileting/diapering
- Health practices
- Safety practices

Language-Reasoning

- Books and pictures
- Encouraging children to communicate
- Using language to develop reasoning skills
- Informal use of language

Activities

- Fine motor
- Art
- Music/movement
- Blocks
- Sand/water
- Dramatic play
- Nature/science
- Math/number
- Use of TV, video, and/or computers
- Promoting acceptance of diversity

Interaction

- Supervision of gross motor activities
- General supervision of children (other than gross motor)
- Discipline
- Staff-child interactions
- Interactions among children

Program Structure

- Schedule
- Free play
- Group time
- Provisions for children with disabilities

Parents and Staff

- Provisions for parents
- Provisions for personal needs of staff
- Provisions for professional needs of staff
- Staff interaction and cooperation
- Supervision and evaluation of staff
- Opportunities for professional growth

Appendix Figure 2	Overview of the Subscales and Items of the ECERS-E (Sylva, Siraj-Blatchford & Taggart, 2003)

Literacy

- Environmental print: letters and words
- Book and literacy areas
- Adult reading with the children
- Sounds in words
- Emergent writing/mark making
- Talking and listening

Mathematics

- Counting and the application of counting
- Reading and writing simple numbers
- Mathematical activities: shape and space
- Mathematical activities: sorting, matching and comparing

Science and Environment

- Natural materials
- Areas featuring science/science resources
- Science activities: science processes: non-living
- Science activities: science processes: living processes and the world around us
- Science activities: science processes: food preparation

Diversity

- Planning for individual learning needs
- Gender equality and awareness
- Race equality and awareness

.

Appendix Figure 3 Overview of the Subscales and Items of the ITERS-R (Harms, Cryer & Clifford, 2003)

Space and Furnishings

- Indoor space
- Furniture for routine care and play
- Provision for relaxation and comfort
- Room arrangement
- Display for children

Personal Care Routines

- Greeting/departing
- Meals/snacks
- Nap
- Diapering/toileting
- Health practices
- Safety practices

Listening and Talking

- Helping children understand language
- Helping children use language
- Using books

Activities

- Fine motor
- Active physical play
- Art
- Music and movement
- Blocks
- Dramatic play
- Sand and water play
- Nature/science
- Use of TV, video and/or computer
- Promoting acceptance of diversity

Interaction

- Supervision of play and learning
- Peer interaction
- Staff-child interaction
- Discipline

Program Structure

- Schedule
- Free play
- Group play activities
- Provisions for children with disabilities

Parents and Staff

- Provisions for parents
- Provisions for personal needs of staff
- Provisions for professional needs of staff
- Staff interaction and cooperation
- Staff continuity
- Supervision and evaluation of staff
- Opportunities for professional growth

References

Burchinal, M.R., Cryer, D., Clifford, R.M., & Howes, C. (2002). Caregiver training and classroom quality in child care centers. *Applied Developmental Science, 6*, 2-11.

Department for Children, Schools and Families (DfES). (2007). The Early Years Foundation Stage: Setting the Standards for Learning, Development and Care for Children from Birth to Five. Nottingham: DfES Publications

Harms, T., Clifford, R. M., & Cryer, D. (2005). *Early Childhood Environment Rating Scale-Revised*. New York, NY: Teachers College Press.

Harms, T., Cryer, D., & Clifford, R. M. (2003). *Infant Toddler Environment Rating Scale-Revised*. New York, NY: Teachers College Press.

Mathers, S., Ranns, H., Karemaker, A.M., Moody, A., Sylva, K., Graham, J., & Siraj-Blatchford, I. (2011a). *Evaluation of Graduate Leader Fund: Final Report.* Department for Education.

Mathers, S., Ranns, H., Karemaker, A.M., Moody, A., Sylva, K., Graham, J., & Siraj-Blatchford, I. (2011b). *Evaluation of Graduate Leader Fund: Technical Report.* Department for Education.

Peisner-Feinberg, E.S., & Burchinal, M.R. (1997). Relations between preschool children's childcare experiences and concurrent development: The cost, quality, and outcomes study, *Merrill-Palmer Quarterly* 43 (1997), pp. 451–477.

Ranns, H., Newmark, T., Rahim, N., & Penfold, C. (2011). *Evaluation of Graduate Leader Fund: GLF Implementation Case Studies.* Department for Education.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., Taggart, B., and Elliot, K. (2003). The Effective Provision of Pre-School Education Project; Findings from the PreSchool Period. (DfES Research Brief No: RBX15-03). London: DfES.

Sylva, K., Siraj-Blatchford, I., & Taggart, B. (2003). *Assessing Quality in the Early Years Early Childhood Environment Rating Scale. Extension (ECERS-E) Four Curricular Subscales.* Stoke on Trent, UK and Stirling, USA Trentham Book.

Ref: DFE-RR144c

ISBN: 978-1-84775-967-2

July 2011