

Quality and Inequality

Do three- and four-year-olds in deprived areas experience lower quality early years provision?

Sandra Mathers and Rebecca Smees



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Foreword from the Nuffield Foundation

Children who grow up in poorer families leave school with significantly lower levels of attainment than their peers from wealthier backgrounds. For example in 2013, just over a third of 16-year-olds eligible for free school meals achieved a grade A*–C in English and Maths, compared to two thirds of the rest of the cohort.

Evidence shows that high quality early years provision can help narrow this gap, and successive governments have implemented policies designed to address these early inequalities, most recently the offer of free early education places to disadvantaged two-year-olds. But recent Ofsted reports have suggested that early years provision is of a lower quality in deprived areas than it is in more advantaged ones. And so socioeconomic disadvantage is mirrored in the quality of early years provision and children from poorer backgrounds lose out again.

But what is the full story behind the Ofsted data? Are all types of setting of lower quality in more deprived areas? And are all characteristics of provision affected or just some? This report presents findings from a study designed to answer these questions and others. The researchers, led by Sandra Mathers at the University of Oxford found that the difference in quality only applies to the private voluntary and independent (PVI) sector. Where children attend early years settings in government-maintained schools, there is no difference in quality between those in deprived areas and those in better off areas, and in some cases, quality of provision in the maintained sector is higher in more deprived areas.

Worryingly, where there is a difference in quality in PVI settings, the characteristics that suffer are support for languages and literacy, and provision for diversity and individual needs. These are obviously essential for addressing

the attainment gap. A more promising finding is that the difference in quality was narrower where there was a well-qualified staff team, including graduate leadership. Indeed having well-qualified staff was associated with higher quality in all PVI settings whether they served deprived areas or not.

In light of this, the researchers recommend that the government should encourage PVI providers to spend the new pupil premium on employing graduate-level staff and introduce a phased requirement for all early years staff to be qualified to at least the equivalent of A level standard (Level 3). These are recommendations the Foundation would support, as all the evidence indicates that well-qualified staff are key to providing high quality early years education. Further work is needed, though, on *how* best to upskill the early years workforce and to ensure better qualified staff are appropriately deployed.

The research team have provided a clear and accessible presentation of their findings, which have immediate implications for policy in this area, and I thank them for their efforts.



Teresa Williams
Director of Social Research & Policy

Executive summary

Research tells us that high quality early years provision can help to narrow the attainment gap between disadvantaged children and their more affluent peers. However, there are indications that the children most in need of good quality are the least likely to receive it, because quality is lowest among providers serving disadvantaged areas and children. In this study we address this important issue, using secondary analysis of data gathered between 2007 and 2013 from 1,248 early years providers and more than 40,000 children attending them. We explore whether settings and schools located in disadvantaged areas – and those serving disadvantaged three- and four-year-olds – were offering comparable quality to those serving the more advantaged. We also consider the drivers of quality, to explore which kinds of providers were most able to offer good quality in deprived areas.

Key findings¹

- *Government-maintained schools located in disadvantaged areas and serving disadvantaged children offered quality for three- and four-year-olds that was comparable (and in some cases higher) than schools serving the more advantaged. This was true across all dimensions of quality measured using the Early Childhood Environment Rating Scales (ECERS-R and ECERS-E).*
- *Within the private, voluntary and independent (PVI) sector, quality for three- and four-year-olds was lower in settings located in deprived areas; with more disadvantaged user-bases; and attended by individual children from disadvantaged backgrounds. This was most evident in relation to the quality of interactions; support for learning, language and literacy; and provision for diversity and individual needs. In other domains – including the physical environment and resourcing, care routines and health and safety practices – PVI settings offered comparable quality to all children.*
- *Within the PVI sector, settings with a graduate member of staff scored more highly on all quality measures. Supplementary analysis from Ofsted showed that the most highly graded settings had both a graduate and a high proportion of staff qualified to Level 3 (A-level standard). Thus, having a well-qualified staff team was associated with higher quality in all PVI settings, whether they served advantaged or disadvantaged areas.*
- *However, only graduate leadership was associated with a narrower quality gap between PVI settings located in deprived and more advantaged areas. Among non-graduate settings, the clear and statistically significant drop in quality between the least and the most deprived areas was evident across all three quality measures. Among graduate settings, the quality gradient was much less steep, and in some cases eliminated altogether.*

About this study

The British Government has long recognised the importance of high quality early years provision for disadvantaged children, with initiatives over the past decade including Neighbourhood Nurseries, Sure Start, and the Children's Centres programme. Most recently, free early education

places are being offered to disadvantaged two-year-olds, to help counter the risk of falling behind their more affluent peers. Despite the raft of Government initiatives, there is evidence that the quality of early years provision in deprived areas may actually be lower than in more affluent areas. The latest Annual Report of the regulatory body Ofsted showed that 76 per cent of centre-based childcare providers in the

¹ Throughout this summary, the term 'association' refers to statistical correlations between two measures.

most deprived areas were graded as good or outstanding, compared with 86 per cent in the least deprived areas.² Similar patterns are found in the maintained sector, with 88 per cent of primary schools located in the least deprived areas judged to be good or outstanding, compared with just 73 per cent of those located in the most deprived areas.³

In this study, we use research-validated measures of quality known to predict child outcomes to explore the relationships between quality and deprivation in greater depth, and to consider precisely which dimensions of quality vary between areas.⁴ If quality is lower in settings located in deprived areas, then which aspects of practice are affected? Is it the quality of the physical environment and materials which are lacking, for instance, or the quality of support for language and learning? Secondly, we explore different methods for measuring deprivation. As well as exploring the quality of settings located in deprived areas, we consider the characteristics of the children actually attending them. Do settings with a disadvantaged user-base offer comparable quality to those catering for more advantaged children? We also consider the quality experienced by individual children attending our sample settings. Do children living in disadvantaged areas tend to receive their early education at higher or lower quality settings, as compared with children living in more advantaged areas? Finally, we consider whether the relationships between quality and deprivation vary according to the specific characteristics of the settings themselves. Are some providers more capable of offering good quality to disadvantaged children than others? We focus particularly on comparisons between sectors (comparing maintained schools and PVI provision) and on the role of staff qualifications.

Analysis is based on two samples of English early years providers catering for pre-school children (1,079 PVI providers and 169 maintained nursery and primary schools) and the three- and four-year-olds attending them. The samples were drawn from pre-existing research studies carried out by the University of Oxford between 2007 and 2011, and from quality audits carried out by A+ Education on behalf of local authorities between 2008 and 2013. Due to the way in which the samples were gathered – using secondary sources with providers selected according to the purpose of each project – they are not fully representative of all settings and schools in England. Information on quality was available for three separate measures: Ofsted grades from the 2008–2012 inspection cycle, the ECERS-R and the ECERS-E. Deprivation was measured using the English

Indices of Multiple Deprivation (IMD) 2010, which provide a relative measure of the deprivation experienced in every area in England. Data on provider characteristics were gathered from the Department for Education's School Census and Early Years Census. This included details of the areas in which each of the settings and schools were located, and in which each of the 40,000 children attending them lived. This information was linked to IMD data on area deprivation to create measures of disadvantage reflecting the user-base of each setting and school, for each of the individual children attending them.⁵ Finally, data on qualifications of staff within the PVI sample were accessed from the Early Years Census; and a supplementary analysis carried out by Ofsted, which linked national data on inspection grades with data gathered by Ofsted on staff qualifications, has also been included within the report.

Summary and implications: addressing the quality gap

The starting point for our analysis was strong research evidence showing that children from disadvantaged backgrounds have the most to gain from good quality early years provision. Successive governments have invested heavily in improving access and quality for the poorest children, with the aim of helping them overcome their early disadvantage and catch up with their more advantaged peers. In this study we consider whether this investment has worked: is high quality provision available for the children who need it most?

Our findings suggest that government-maintained schools are doing a good job in meeting the needs of the most vulnerable children. Children from deprived backgrounds tend to be clustered in the maintained sector, with schools providing early education for larger proportions of disadvantaged children than PVI settings. Our findings suggest that these children receive comparable (and in some cases even higher) quality than their peers across all dimensions of practice measured using the ECERS-R and -E. This is somewhat at odds with trends in Ofsted grades at national level which show that, while nursery schools offer comparable provision in all areas, primary schools located in disadvantaged areas tend to receive lower grades than those located in more advantaged areas. The explanation may lie in our measures. Since there is no separate early years grade, Ofsted grades for primary schools reflect quality for all ages of children; while the ECERS scales reflect the quality of early years provision. It seems that, despite an overall

2 Ofsted (2014)

3 Ofsted Dataview, data for primary schools as at 31/08/13 (dataview.ofsted.gov.uk)

4 In this analysis we use lower super output areas (LSOAs) as our area measure. An LSOA is a geographical area comprising on average 1,500 residents.

5 Within the 1,079 PVI settings, data were matched for 25,950 children; and within the 169 schools for 14,290 children.

tendency for primary schools located in deprived areas to be of lower quality, both primary and nursery schools are effective in maintaining standards of *early years* provision for disadvantaged three- and four-year-olds.

However, the maintained sector cannot provide for all disadvantaged children; and recent data suggest that just under 30 per cent of three- and four-year-olds living in the most deprived areas and receiving funded early education, do so within the PVI sector.⁶ Our findings suggest that these children are losing out. Within our sample, quality was lower in PVI settings located in deprived areas, with more disadvantaged user-bases, and attended by individual children living in disadvantaged areas; and it was lower largely in the dimensions of quality which we know to be most important for children's development – the quality of interactions, and support for children's language and learning.

Most worrying is the fact that the quality gap between PVI settings serving the least and the most disadvantaged was largest in relation to the quality of support for communication, language and literacy. A clear gradient was evident, with quality decreasing as deprivation increases. This may reflect the challenges inherent in providing for children who are more at risk of language delays or behavioural problems, or who speak English as a second language. However, it does not change the nature of the problem: that the PVI sector is not effectively rising to this challenge and offering comparable quality for disadvantaged children. Given that we know the outcomes gap between children from low-income families and their better-off peers is not reducing; and that it is particularly evident in relation to language and communication skills,⁷ these findings are of serious concern.

What can be done? Our findings suggest that investment is needed to further raise the quality of the early years workforce in the PVI sector. Settings with well-qualified staff scored more highly on all three of our quality measures. Supplementary analysis from Ofsted showed that settings with an overall well-qualified staff team (at least 75 per cent at Level 3) and a graduate Early Years Professional tended to achieve better inspection grades, with the most highly graded settings having both of these features. Thus, better qualifications are associated with better quality for *all* children.

But in terms of narrowing the quality gap between PVI settings serving the least and most disadvantaged, our findings suggest that employing a graduate makes the most difference. Among non-graduate settings, we identified a

clear and statistically significant drop in quality as we moved from the least to the most deprived areas, across all three quality measures. The trend was clearest in relation to the quality of support for children's language and reasoning skills, with a 10 per cent 'quality gap' between settings located in the least and the most disadvantaged areas. This suggests that non-graduate settings are not well equipped to maintain quality standards when faced with the challenge of catering for children at greater risk of language and behavioural problems. However, among PVI graduate settings, the quality gradient was much less steep, and in some cases eliminated altogether. The findings suggest that having a graduate on the staff team may help settings to maintain overall quality standards; to support communication and language; to meet children's individual learning needs; and to provide for children and families from different backgrounds, even in areas where there is great diversity. Given that all government-maintained provision is graduate led, this is likely to play a significant part in the ability of schools to maintain quality standards when catering for disadvantaged children.

The Government is already doing much to address graduate leadership in the PVI sector, and has recently extended the 'pupil premium' to the early years, so that settings and schools will receive additional funding for each disadvantaged three- and four-year-old on their roll. The recently published *Ofsted Early Years Annual Report 2012/13* also highlights the key role of graduate staff in tackling disadvantage. Our research strongly supports this focus, and indicates that investment in graduates working in poor areas may be an effective means of narrowing the quality gap among settings serving the least and the most advantaged.

Our findings also have implications with regard to social mix. The strongest associations between quality and disadvantage in the PVI sector were identified for the deprivation measure based on the users of each setting; suggesting that it is *most* difficult to achieve good quality provision when catering for high proportions of disadvantaged children. Together with evidence that a mixed environment is beneficial for poorer children's outcomes⁸, these findings support efforts to promote a good social mix within both the PVI and school sectors. Alongside this, continued efforts are needed to encourage take-up of early education, since research shows that children not accessing the entitlement are most likely to be from disadvantaged backgrounds.⁹ Such children are therefore doubly disadvantaged: they are less likely to take up early education, and less likely to experience high quality when they do.

6 Gambaro, Stewart & Waldfogel (2013)

7 Ofsted (2014)

8 Sylva et al. (2010)

9 Speight & Smith (2010)

Finally, our research points to the need to consider the ways in which we measure disadvantage. The IMD, although not specifically focused on children, captures broader measures of local disadvantage than the more commonly used Income Deprivation Affecting Children Index (IDACI); and in our analysis the associations between quality and deprivation were stronger for the IMD than for the IDACI. We also used different measures of deprivation, based on the location of settings and schools, but also on the areas in which children actually attending them lived. While our findings suggest that measures based on setting location are reasonable proxies for more nuanced data, they also highlight the value of using measures based on the children and families actually using settings and schools, where this is possible. Further work is required to identify measures of deprivation which are robust but also reasonably straightforward to access or create. Lastly, it is vital that adequate data be available to continue research in this field. Our analysis has been strengthened by the inclusion of data from Ofsted on the qualifications of early years staff. We support Ofsted's focus on collecting information about the characteristics of settings during inspection visits, and suggest that this could usefully be extended to include data on other factors known to relate to quality (e.g. staff turnover).

To conclude, our study has highlighted the challenges involved in ensuring good quality provision for the children who have the most to gain from it. While outcomes for disadvantaged children - indeed for all children – have shown improvement in recent years, the gap in outcomes between disadvantaged and advantaged children has not closed substantially during this period. Much has been done, but more is needed to ensure that disadvantaged children have the same chances as their more advantaged peers. We set out a number of recommendations below, based on our analysis of the relationships between quality and deprivation for three- and four-year-old children. Alongside this, further research is needed to explore these same relationships for children under the age of three, to ensure the success of the current early education programme for disadvantaged two year old children, much of which will be delivered by the PVI sector. Follow-up research is also needed to confirm our findings for the maintained sector using a larger and representative sample of schools, and to explore in greater detail *how* providers offering good quality for disadvantaged children are able to achieve this, in order that good practice may be shared.

Recommendations

1. *Further support to ensure that settings in the PVI sector are equipped to meet the needs of disadvantaged children. This should include:*
 - a) *Strategies to encourage graduate leadership among PVI settings serving the most disadvantaged children. The recently announced pupil premium will support this aim, and Government should consider the use of levers to encourage settings to spend these additional funds on employing graduate-level staff and on paying them an appropriate salary.*
 - b) *Appropriate training in meeting the needs of children and families from diverse backgrounds, particularly in key areas such as language and communication.*
2. *A requirement that all early years staff be qualified to Level 3 (A-level standard), introduced on a phased basis if necessary.*
3. *Continued support for schools providing early education for disadvantaged children, including making the most of high quality nursery schools to support practice in other schools and settings (e.g. as part of the 'teaching schools' initiative).*
4. *Consideration of strategies to ensure a good social mix within both the PVI and maintained sectors.*
5. *Within both national surveys and research, the use of deprivation measures which capture multiple aspects of disadvantage (such as the IMD) and which capture the characteristics of setting users and/or individual children as well as the location of early years settings.*
6. *Continued work by Ofsted to collect data on setting characteristics and known quality predictors during inspections, including consideration of which additional measures could be gathered (e.g. data on staff turnover).*
7. *Re-introduction of the Early Years Foundation Stage grade in schools inspections to capture the quality of early years provision. A consultation proposing this change has recently been published by Ofsted and we would strongly support its acceptance.*

1 Introduction

1.1 Overview

Research tells us that high quality early years provision can help to narrow the attainment gap between disadvantaged children and their more affluent peers. However, there are indications that the children most in need of good quality are the least likely to receive it, because quality is lowest among providers serving disadvantaged areas and children. In this study we address this important issue, using secondary analysis of data gathered between 2007 and 2013 from 1,248 early years providers and more than 40,000 children attending them. We explore whether settings and schools located in disadvantaged areas – and those serving disadvantaged three- and four-year-olds – were offering comparable quality to those serving the more advantaged. We also consider the drivers of quality, to explore which kinds of providers were most able to offer good quality in deprived areas.

1.2 Background and aims

The British Government has long recognised the importance of high quality early years provision for disadvantaged children, with initiatives over the past decade including Neighbourhood Nurseries, Sure Start and the Children's Centres Programme. Most recently, free early education places are being offered to disadvantaged two-year-olds, to help counter the risk of falling behind their more affluent peers. Despite the raft of Government initiatives, there is evidence that the quality of early years provision in deprived areas may actually be lower than in more affluent areas. The latest Annual Report of the regulatory body Ofsted showed that 76 per cent of centre-based childcare providers in the most deprived areas were graded as good or outstanding, compared with 86 per cent in the least deprived areas.¹⁰ Similar patterns are found in the maintained sector, with 88 per cent of primary schools serving the least deprived areas judged to be good or outstanding, compared with just 73 per cent of those serving the most deprived areas.¹¹

Given the potential of high quality early years provision to narrow the gap, and the extent of Government spending

on provision in disadvantaged areas, there is an urgent need to verify Ofsted's conclusion that quality may be lower in settings and schools located in deprived areas. Ofsted inspections are necessarily broad-brush, designed to regulate rather than to capture a fine-grained profile of quality.¹² In this study, we use research-validated measures of quality known to predict child outcomes to explore the relationships between quality and deprivation in greater depth, and to consider precisely which dimensions of quality vary between areas.¹³ If quality is lower in settings located in deprived areas, then which aspects of practice are affected? Is it the quality of the physical environment and materials which are lacking, for instance, or the quality of support for language and learning?

Secondly, we explore different methods for measuring deprivation, since previous research suggests that a different picture is gained by looking at the experiences of individual children, rather than at the quality offered by settings located in deprived areas.¹⁴ This makes intuitive sense, since settings in disadvantaged areas may not necessarily cater only for children within their immediate area; particularly in cities, where distances between deprived and more affluent

¹⁰ Ofsted (2014)

¹¹ Ofsted Dataview, data for primary schools as at 31/08/13 (dataview.ofsted.gov.uk)

¹² Mathers, Singler & Karemaker (2012)

¹³ In this analysis we use lower super output areas (LSOAs) as our area measure. An LSOA is a geographical area comprising on average 1,500 residents.

¹⁴ Mathers, Sylva & Joshi (2007); Gambaro, Stewart & Waldfogel (2013)

areas are often small. As well as exploring the quality of settings located in deprived areas, we therefore consider the characteristics of the children actually attending them. Do settings with a disadvantaged user-base offer comparable quality to those catering for more advantaged children? We also consider the quality experienced by individual children attending our sample settings. Do children living in disadvantaged areas tend to receive their early education at higher or lower quality settings, as compared with children living in more advantaged areas?

Finally, we consider whether the relationships between quality and deprivation vary according to the specific characteristics of the settings themselves. Are some providers more capable of offering good quality to disadvantaged children than others? We focus particularly on comparisons between sectors – comparing state-maintained schools and private, voluntary and independent (PVI) provision – and on the role of staff qualifications.

The primary focus of this study is on centre-based early years provision for three- and four-year-old children. The specific research questions are:

1. Does the quality offered by PVI settings and maintained schools vary according to:
 - the level of deprivation of the areas in which they are located?
 - the extent to which they cater for children living in disadvantaged areas?
2. Do individual children living in disadvantaged areas attend settings of comparable quality to those attended by children living in more advantaged areas?
3. If there is a relationship between quality and deprivation, then:
 - which specific dimensions of quality vary by deprivation level?
 - does the relationship vary according to specific characteristics of early years providers (e.g. sector, qualifications)?

1.3 Methodology

Analysis is based on two samples of English early years providers catering for preschool children (1,079 PVI providers and 169 maintained nursery and primary schools) and the three- and four-year-olds attending them. The samples were drawn from pre-existing research studies carried out by the University of Oxford between 2007 and 2011, and from quality audits carried out by A+ Education on behalf of local authorities between 2008 and 2013. Due to the way in which the samples were gathered – using secondary sources with providers selected according to the purpose of each project – they are not fully representative of all settings and schools in England.

Information on quality was available for three separate measures:

1. Ofsted grades from the 2008 to 2012 inspection cycle
2. Assessments made between 2007 and 2013 using the Early Childhood Environment Rating Scale-Revised (ECERS-R), which assesses quality for children aged 30 months to five years.
3. Assessments made between 2007 and 2013 using the extension to the ECERS-R (ECERS-E), which assesses curricular quality for children aged three to five years.

Deprivation was measured using the English Indices of Multiple Deprivation (IMD) 2010, which provide a relative measure of the deprivation experienced in every area in England.

Data on provider characteristics were gathered from the Department for Education's School Census and Early Years Census. This included details of the areas in which each of the settings and schools were located, and in which each of the 40,000 children attending them lived. This information was linked to IMD data on area deprivation to create measures of disadvantage reflecting the user-base of each setting and school, and for each of the individual children attending them. Finally, data on qualifications of staff within the PVI sample were accessed from the Early Years Census; and a supplementary analysis linking national data on Ofsted inspection grades with data gathered by Ofsted on staff qualifications has been included alongside our own findings.

Throughout this report, the term 'association' refers to statistical correlations between two measures (such as ECERS and IMD scores). Correlations are measured on a scale of 0 to 1, where 0 represents no association between the two measures and 1 represents a perfect association. Generally, correlations between -0.3 and +0.3 are

considered small, correlations of between ± 0.3 and ± 0.5 are considered moderate, and correlations absolutely larger than ± 0.5 are considered strong.

All findings reported are statistically significant unless otherwise stated:

* denotes a finding which is significant at the 5 per cent level

** denotes a finding which is significant at the 10 per cent level

*** denotes a finding which is significant at the 1 per cent level.

Further detail on the methodology, measures and sampling is provided in Chapter 3.

1.4 Report outline

The remainder of the report is structured as follows:

Chapter two provides some background context on early years provision in England and sets out previous research evidence on the associations between quality and deprivation.

Chapter three provides more detail on the samples and measures.

Chapter four presents findings on the associations between quality and deprivation, and on the kinds of providers which are most able to offer good quality for disadvantaged children. As well as presenting findings from the current study, it includes some additional data and analysis provided by the Ofsted data team, which has been exploring similar questions of quality and inequality in early years provision.

Chapter five draws conclusions and considers implications for policy and practice.

2 The problem and the context

2.1 Provision for three- and four-year-olds in England¹⁵

A mixed-sector model

Compulsory schooling in England begins the term after a child turns five. Prior to this, early years provision is delivered through a mixed-sector approach, which combines publicly subsidised early education with childcare paid for directly by parents, and is offered by a mix of state-maintained schools and private, voluntary and independent (PVI) sector providers. Since 2004, all three- and four-year-olds have been entitled to a free early education place, which can be taken up within a maintained school or within the PVI sector.¹⁶ The current entitlement is 15 hours per week for 38 weeks of the year, which can be taken flexibly to suit parental working patterns (e.g. two days of 7.5 hours rather than five days of 2.5 hours).

Within the PVI sector, parents can choose from a range of providers, including for-profit day nurseries and preschools; sessional playgroups and preschools operating on a not-for-profit basis; and home-based childminders. Many Children's Centres, which integrate services for children and families, also offer early education and care. Within the maintained sector, the majority of three- and four-year-olds are catered for by primary or infant schools. A small number of nursery schools specialise in early years provision, but with only 418 nationally,¹⁷ these cater for a relatively small proportion of three- and four-year-olds.

Take-up of early education is high, with 98 per cent of four-year-olds and 94 per cent of three-year-olds accessing some kind of funded early education.¹⁸ There is evidence that children not accessing the entitlement are most likely to be from disadvantaged backgrounds.¹⁹ Patterns of use also tend to change as children get older. Once children turn four they become eligible for a place in a school reception class, which can be accessed from the September after their fourth birthday. As a result, 95 per cent of children who turn four between January and August start reception class in

the following academic year (i.e. from September).²⁰ Three-year-olds and younger four-year-olds attend either a nursery class within a school, or a PVI-sector provider.²¹ These will receive 15 free hours per week, with parents paying for any provision they access over and above the entitlement. However, four-year-olds attending reception class may attend full-time (25 hours) since parents have a right to choose whether they access a full or a part-time place. As a result, many four-year-olds are likely to be attending full- rather than part-time funded provision.

Differences between sectors

There are a number of important differences between early years sectors in England, particularly in the qualifications of their workforce. The English national qualification framework comprises nine levels: Level 3 is equivalent to A-level, while Level 6 represents a graduate qualification. Nursery schools and classes are led by Level 6-qualified teachers, usually trained to work with children from the age of three and working at a ratio of one adult to 13 children. Within the PVI sector, the minimum legal qualification requirements are much lower: managers of group care settings must be qualified to Level 3, and half the remaining staff must be qualified to at least Level 2. Legal ratios for PVI group care providers are 1:8 for three- and four-year-olds, although where a graduate works directly with children this can be relaxed to 1:13, as in the maintained sector.

Qualifications and quality within the PVI sector have been an ongoing concern for successive governments, following research showing that quality is consistently lower than in the state-maintained sector.²² In 2007 a new graduate-level professional accreditation known as Early Years Professional Status (EYPS) was introduced to increase graduate leadership within the sector, supported by the £305 million Graduate Leader Fund. There are currently more than 11,000 qualified Early Years Professionals (EYPs) practising in England²³ and the programme evaluation showed a positive impact on quality for preschool-age children. However, the stated aim for every PVI setting to have an EYP by 2015

¹⁵ This section draws on a policy review carried out on behalf of the Sutton Trust (Mathers et al., 2014)

¹⁶ Maintained schools are directly funded by the Government, while PVI settings receive funding from local authorities to cover the costs of the free early education places they offer.

¹⁷ Ofsted (2014)

¹⁸ Department for Education (2013)

¹⁹ Speight & Smith (2010)

²⁰ Gambaro, Stewart & Waldfogel (2013). Analysis based on data from the DfE Early Years 2011 and School Census 2011, which recorded children receiving the free entitlement as at January 2011.

²¹ Gambaro, Stewart & Waldfogel (2013). 44 per cent of primary schools have a nursery class as well as a reception class (Brind et al., 2012).

²² Sylva et al. (2010); Mathers, Sylva & Joshi (2007)

²³ Department for Education (2013b)

has since been dropped, and graduate leadership in the sector remains low. Data from 2013 show that less than half (44 per cent) of PVI settings employ a qualified teacher or EYP.²⁵ The most recent move to address such issues was the replacement of the EYP programme with a new Early Years Teacher role, which had its first intake in September 2013. The qualification is graduate level and, as with EYPS, it covers the birth-to-five age range. However, since Early Years Teachers will not be eligible for teachers' pay and conditions (as was the case for EYPs before them), this has been seen as 'one form of inequality replaced with another'.²⁶ Despite recent moves by the Government to address workforce issues, both pay and qualification levels in the PVI sector remain low in comparison to the maintained sector; and to early years provision in many other European countries.²⁷

The role of early years provision in reducing inequalities

Successive governments have been committed to the reduction of inequalities between poor children and the more advantaged, and believe that this can be achieved through good quality early years provision. An array of policies have been developed with the single or dual aims of supporting disadvantaged children to catch up with their more affluent peers through access to good quality early education, and supporting poor families to work in order to reduce child poverty.²⁸

In 1998 the Government announced the introduction of the Sure Start programme, targeted specifically at children living in poor areas, closely followed by a stated commitment in 1999 to end child poverty. The Neighbourhood Nurseries Initiative was launched in 2001, with the aim of making high quality, convenient and affordable childcare available for working parents in poor neighbourhoods. The 2004 *Ten Year Childcare Strategy* set out a series of further commitments on childcare, including the creation of a network of Sure Start Children's Centres providing integrated services for all children, and moving Sure Start from a targeted to a universal programme. Many Neighbourhood Nurseries and Sure Start centres became Children's Centres. Since 2010, under the Coalition Government, Children's Centres are becoming increasingly targeted towards the most disadvantaged children, whilst trying to maintain a presence in all areas. The current Government has most recently

developed an ambitious programme to extend the provision of free early education to disadvantaged two-year-old children. Since 2013, the most disadvantaged 20 per cent of two-year-olds have been entitled to a free part-time place, and this will be extended to 40 per cent of all two-year-olds in September 2014, at a cost of £755 million.²⁹

2.2 What does current evidence tell us about disadvantaged children's access to good quality early years provision?

Government efforts to tackle inequality through investing in early education and childcare are predicated on convincing research showing that good quality provision can help narrow the outcomes gap between the least and most advantaged in society.³⁰ In terms of progress towards this aim, data from the English early years regulator (Ofsted) suggests that quality has improved overall, with the proportion of centre-based childcare providers graded as 'good' or 'outstanding' increasing over the last five years from 67 per cent to 82 per cent.³¹ However, while quality may be improving overall, there is an emerging body of evidence suggesting that disadvantaged children – those most in need of high quality provision – are among the least likely to receive it. International research shows that settings and classrooms catering for high proportions of disadvantaged children tend to be of lower quality,³² and that the quality experienced by individual children from disadvantaged families also tends to be lower.³³

Evidence from England suggests that the same may be true in this country, with Ofsted consistently reporting lower grades for providers located in deprived areas. Figure 2.1 shows the percentage of centre-based early years settings in the PVI sector achieving each inspection grade within different areas of deprivation. There is a clear quality gradient, with settings in the most deprived areas least likely to be graded as good or outstanding. The most recent data available (inspections to August 2013) shows that 77 per cent of providers in the most deprived areas were graded as good or outstanding, compared with 86 per cent in the least deprived areas: a gap of nine per cent. Comparable data from five years ago show that the quality gap has remained

24 Mathers et al. (2011)

25 Department for Education (2013)

26 Nutbrown (2013)

27 Department for Education (2013b)

28 In practice, tensions often exist between policies which focus on supporting children's developmental needs in the most effective ways, and those which focus on flexibility and convenience for parents wanting to work.

29 Department for Education (2013c)

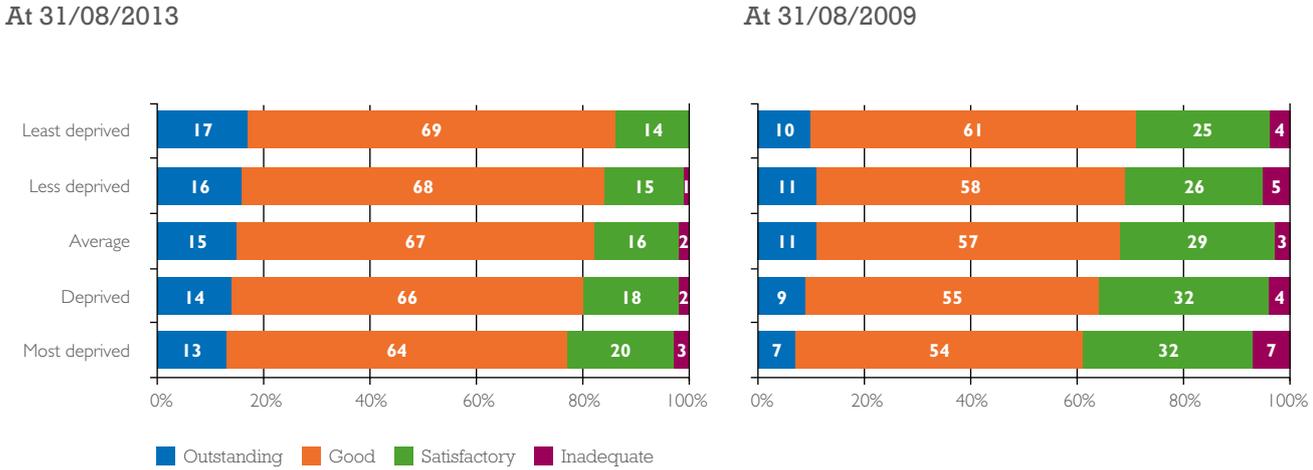
30 Burchinal et al. (1995); Caughy, DiPietro & Strobine (1994); Sylva et al. (2010)

31 Ofsted Dataview, data for non-domestic childcare providers as at 31/08/09 and 31/08/13 (dataview.ofsted.gov.uk)

32 LoCasale-Crouch et al. (2007); Phillipsen et al. (1997); Pianta et al. (2002, 2005)

33 Pianta et al. (2002); Dowsett et al. (2008)

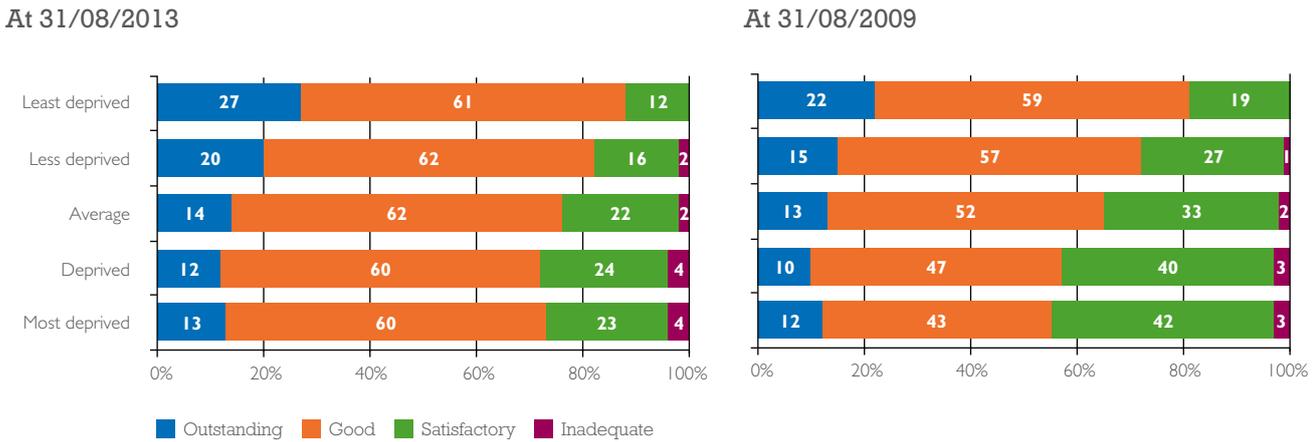
Figure 2.1 Percentage of centre-based early years PVI providers achieving each Ofsted grade within different deprivation quintiles (as measured using the IDACI)*



Source: Ofsted Dataview: overall effectiveness grades for non-domestic childcare providers.

*The Income Deprivation Affecting Children Index (IDACI) reflects the proportion of children aged 0–15 living in income deprived families within each area (LSOA) in England

Figure 2.2 Percentage of maintained primary schools achieving each Ofsted grade within different deprivation quintiles (as measured using the IDACI)*



Source: Ofsted Dataview: overall effectiveness grades for primary schools. Note that this grade reflects quality for the whole primary school and all ages of children, rather than the quality of provision for three- and four-year-old children.

*The Income Deprivation Affecting Children Index (IDACI) reflects the proportion of children aged 0–15 living in income deprived families within each area (LSOA) in England

relatively constant over time: in 2009 there was a 10 per cent gap between the proportion of good and outstanding providers in the least deprived areas (71 per cent) and the most deprived areas (61 per cent). Further support for Ofsted's conclusions is provided by the 2011 Evaluation of the Graduate Leader Fund, which assessed quality within the PVI sector using the research-validated Environment Rating Scales.³⁴ Settings located in income-deprived areas received lower quality ratings for preschool children than those located in more affluent areas.

A similar picture is seen within the maintained sector (Figure 2.2), with fewer primary schools graded as good or outstanding in the most deprived areas (73 per cent) as compared with the least deprived areas (88 per cent). The quality gradient is less steep for stand-alone nursery schools, which tend to be graded more highly overall and have very similar percentages of good or outstanding grades within the most and least deprived areas (96 and 95 per cent respectively).³⁵ However, with only 418 operating nationally, nursery schools provide only a very small proportion of early education places for three- and four-year-olds.

To date, we have evidence that quality is lower for settings located within disadvantaged areas. Other research has focused on the families actually *attending* early years provision, and explored whether settings catering for large proportions of disadvantaged children are of lower quality than those with a more affluent user-base. The Evaluation of the Neighbourhood Nurseries Initiative found that settings serving disadvantaged and more affluent users offered comparable quality; but the fact that Neighbourhood Nurseries were located only in disadvantaged areas means that the sample did not necessarily reflect a broad social mix. Studies which were less biased towards disadvantaged families have concluded that schools and settings catering for high proportions of children from the most disadvantaged areas, from non-white British backgrounds, or speaking English as an additional language, tend to receive lower Ofsted grades and lower ratings on the ECERS rating scales,³⁶ with stronger evidence that this is the case for the PVI sector than for the maintained sector.

Finally, several studies have considered the experiences of individual children from disadvantaged backgrounds. Studies which analyse the maintained and PVI sector separately confirm the poverty gradient, with children living in more

deprived areas less likely to attend a setting or school graded as good or outstanding by Ofsted. This is true for both the PVI and the maintained sectors, although the pattern is clearer for the PVI sector.³⁷ However, studies which combine different sectors within the same analysis, and consider where individual children from disadvantaged homes take up their early education places, offer the first glimmer of positive news. As discussed in section 2.1, there is good evidence that quality in the maintained sector is higher than in the PVI sector. The fact that disadvantaged children tend to disproportionately attend maintained-sector settings means that they are more likely to receive good quality provision than children from more affluent homes, who are more likely to be attending PVI provision.³⁸ Particularly convincing is evidence from the Millennium Cohort Study showing that deprived children (e.g. living in lone parent households, or with health problems) were more likely to attend an early years provider with higher ratings on the ECERS rating scales than more advantaged children.³⁹

So what can we conclude? The fact that individual children from disadvantaged backgrounds tend to be clustered in the maintained sector means that they are more likely to experience good quality provision. Almost seven in 10 three- and four-year-olds living in the most disadvantaged 10 per cent of areas receive their early education place in a school.⁴⁰ However, schools cannot cater for all disadvantaged children, and the remaining three in 10 children living in the most deprived areas will attend a PVI-sector provider. In addition, the majority of children under three are catered for by the PVI rather than the maintained sector. Although this study focuses on three- and four-year-olds, concerns about the relationship between quality and deprivation are highly relevant in light of the current early education programme for two-year-old children. By September 2014, some 260,000 of our most disadvantaged two-year-olds could be attending free places, many of which will be provided by the PVI sector. If these children attend provision within their local area, this raises grave concerns over the quality of provision they may receive.

Even for children accessing their early education within the maintained sector, we cannot assume that quality standards are uniformly high. Although evidence for a quality 'gap' between providers serving the most and least advantaged is less conclusive than for the PVI sector – with nursery schools in all geographical areas achieving comparable

34 Mathers et al. (2011)

35 Ofsted (2014)

36 Gambaro, Stewart & Waldfogel (2013); Mathers et al. (2011)

37 Gambaro, Stewart & Waldfogel (2013)

38 Mathers, Sylva & Joshi (2007); Gambaro, Stewart & Waldfogel (2013)

39 Mathers, Sylva & Joshi (2007)

40 Gambaro, Stewart & Waldfogel (2013)

inspection grades – there is still some evidence that quality is lower in schools (particularly primary schools) serving deprived areas and children.

There is, therefore, an urgent need to verify Ofsted's conclusions on the relationships between deprivation and quality, particularly since recent research has questioned the extent to which inspection grades capture a rich and complete picture of quality.⁴¹ In this study, we use the research-validated⁴² Environment Rating Scales to explore relationships between deprivation and quality in greater depth, and to consider precisely which dimensions of quality vary by deprivation. If quality is lower in settings and schools serving deprived areas and children, then which aspects of practice are affected? Is it the quality of the physical environment and materials which are lacking, for example, or the quality of support for language and learning?

We also consider whether the relationship between quality and deprivation varies according to the specific

characteristics of the providers themselves. Are some providers better able to provide good quality for disadvantaged children than others? We focus particularly on comparisons between sectors (comparing maintained school and PVI provision) and on the role of staff qualifications. Finally, we explore different ways of measuring and defining deprivation, based on the location of the settings and schools, the user-bases they serve and the experiences of individual children.

While outcomes for disadvantaged children in England – indeed for all children – have shown evidence of improvement in recent years, the gap in outcomes between the most and least disadvantaged has not closed substantially during this period.⁴³ Given the potential of high quality early years provision to reduce inequality, and the extent of Government spending with this aim in mind, more fully understanding the relationships between deprivation and quality is of critical importance.

⁴¹ Mathers, Singler & Karemaker (2012)

⁴² Burchinal et al. (1996, 2002); NICHD (2000); Peisner-Feinberg & Burchinal (1997); Sylva et al. (2010)

⁴³ Ofsted (2014)

3 Methodology: measures and sample

This chapter provides further detail on the measures used to explore relationships between quality and deprivation, and the two samples of providers upon which the analysis is based: 1,079 PVI providers and 169 maintained nursery and primary schools catering for preschool children, and the three- and four-year-olds attending them.

The samples were drawn from pre-existing research studies carried out by the University of Oxford and from audits of settings and schools carried out by A+ Education on behalf of local authorities in England, all of which included assessments using at least one of the Environment Rating Scales (ECERS-R or -E) between 2007 and 2013. Due to the way in which the sample was gathered – using secondary sources with providers selected according to the purpose of each project – it is not fully representative of all settings and schools in England.⁴⁴

Due to the fact that the PVI and maintained samples were drawn from different sources, and fact that the Ofsted inspection frameworks differ across sectors, analysis was carried out separately for the maintained and PVI samples.

3.1 Measures

3.1.1 Quality measures

Ofsted inspections

Our first quality measure was provided by grades awarded by the regulatory body Ofsted for the 2008 to 2012 inspection cycle,⁴⁵ which were available for all settings and schools in the sample. Ofsted inspects both schools and early years childcare settings, using separate frameworks. Information is gathered through observation, reviews of policies and paperwork, and discussions with management, parents/carers, staff and children (where they are old enough for this to be appropriate). Following inspection, a grade is awarded for 'overall effectiveness', as well as a number of sub-grades assessing specific dimensions of provision. These are awarded on a four-point scale, where one represents 'outstanding' provision and four represents 'inadequate' provision.

Primary school inspections usually last two days and are led by Her Majesty's Inspectors and/or contracted inspectors. Grades reflect provision for older children as well as those accessing early years provision. While a separate grade reflecting the quality of early years provision was awarded during the early part of the relevant inspection cycle, it was later withdrawn and was missing for a large proportion of our schools (25 per cent). For this analysis we therefore use the 'overall effectiveness' grade for infant and primary schools. We also have a small number of nursery schools within our sample. Since they cater exclusively for children under five, their overall grade does reflect the quality of early years provision. Thus, for the 169 schools within the maintained sample, the overall Ofsted grade means slightly different things: for the 15 nursery schools, it reflects quality for preschool children; for the 154 infant and primary schools it reflects quality for children up to the ages of seven and 11, respectively.

⁴⁴ Further details on the sampling are provided in Mathers, Singler & Karemaker (2012), which used the same dataset.

⁴⁵ Where multiple reports were available per setting, the report closest in time to the ECERS data collection point was selected.

For centre-based private and voluntary early years providers (known as non-domestic-childcare providers by Ofsted)⁴⁶ inspections generally involve a half-to-full-day visit and are all contracted out. During the period for which we have data, the grades feeding into the overall effectiveness judgement assessed a range of different dimensions, including quality of provision; the effectiveness of leadership and management; the capacity of the staff team to self-evaluate and improve their own quality; and the extent to which children achieve the key outcomes set out in the Early Years Foundation Stage framework. With their broad scope, Ofsted inspections provide an overall snapshot of the effectiveness of a setting or school for the purposes of regulation, rather than a fine-grained assessment of provision.

The Environment Rating Scales

Our second measure of quality was provided by the Environment Rating Scales ECERS-R and ECERS-E, which assess quality for children aged from 30 months to five years, and from three to five years, respectively.⁴⁷ In contrast to the broad measure provided by Ofsted grades, the ECERS scales provide a detailed measure of quality as experienced by children, based on observation of practice. An ECERS observer assesses one room or group of children at a time, spending up to a day gathering evidence across a range of different dimensions. The items of the ECERS-R are arranged under six broad headings or '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 communication skills)
4. Activities (e.g. fine motor activities, sand and water play)
5. Interactions (e.g. supervision, staff-child interactions, peer interactions)
6. Programme structure (e.g. the balance between child-initiated and adult-led play).⁴⁸

ECERS-R therefore provides a measure of the overall quality of care and education. Its extension (the ECERS-E) has more specific focus on curricular provision, and on staff support for children's learning. It provides supplementary items within the following four areas:

1. Literacy (e.g. support for language, emergent writing, reading with children)
2. Maths (e.g. sorting, matching and comparing)
3. Science (e.g. living processes, food preparation)
4. Diversity (e.g. racial and cultural awareness, planning for individual learning needs).

Each of the ECERS subscales comprises a number of individual items, rated on a seven-point scale with explicit indicators for scores of 1 (inadequate), 3 (minimal), 5 (good) and 7 (excellent). For both the ECERS-R and -E, an overall quality score was created based on the mean of the items in each subscale. ECERS-R data were available for 1,023 of the PVI sample (618 settings for the ECERS-E), based on assessments carried out between 2007 and 2011. Within the maintained sample, data were available for all schools on the ECERS-R, and for 99 schools on the ECERS-E, based on assessments carried out between 2009 and 2013.⁴⁹

Whilst by no means a 'perfect' measure of quality, the ECERS scales are research-validated and have been shown in many research studies to be associated with children's outcomes; that is, children who attend settings which score higher on ECERS do better than children who attend settings with lower ECERS scores.⁵⁰ In addition to their use as a research measure, the ECERS scales are used in England as quality improvement tools by settings, schools and the local authorities supporting them. For this study, data were available both from English research studies using the ECERS-R and E, and from quality audits carried out by A+ Education on behalf of local authorities for quality improvement purposes.

The use of two different quality measures (Ofsted grades and ECERS scores) provides a valuable means of gaining different perspectives on the question in hand. Earlier

⁴⁶ Childcare-on-non-domestic premises inspections include private and voluntary sector preschools, nurseries and after-school clubs. Independent schools are assessed using a different framework.

⁴⁷ Harms, Clifford & Cryer (2005); Sylva, Siraj-Blatchford & Taggart (2003)

⁴⁸ A seventh subscale considers the extent to which settings work in partnership with parents, and their provision for staff members. This subscale was not used in the current analysis.

⁴⁹ For the majority of settings and schools, one observation had been carried out (e.g. in the foundation stage unit of a school), while in a small number of cases multiple observations were carried out (e.g. in the nursery and reception class of a school) and the average quality score taken. In some cases therefore, the ECERS data represents quality for all three- and four-year-olds in a setting or school. In other cases, for example where one three-year-old room was observed in a large private setting, the ECERS data represents quality for a sample of the three- and four-year-olds in a particular setting or school.

⁵⁰ Burchinal et al. (1996, 2002); NICHD (2000); Peisner-Feinberg & Burchinal (1997); Sylva et al. (2010).

research comparing these two measures suggests that, while there is an association between the two, there is also a good deal of non-overlap and that they largely assess different constructs.⁵¹

3.1.2. Provider characteristics

Information on the characteristics of settings and schools within the study was accessed using data from the Department for Education's School Census and Early Years Census for four consecutive years (2008–2011), to equate to the quality data collection period for the PVI sample. All maintained schools and PVI providers offering funded education places are required to complete the census each year, providing details about the children attending, and about the school or setting itself.⁵² In total, 98% of settings in the PVI sample (1,062 settings), and all of the schools, were matched successfully to census data.

Data gathered from the censuses included information on provision type, for example (for the PVI sector) whether settings were full day care or sessional; and (for the school sector) whether they were a nursery, infant or primary school. Data on qualifications were gathered for the PVI sector on all teaching staff, and on staff working directly with funded two-, three- and four-year-old children (i.e. early years staff). While data for 'all staff' were used for this analysis, equivalent analyses were carried out for 'early years staff' and yielded very similar results. The Early Years Census provides data only on graduate qualifications, specifically on how many of the teaching and early years staff have qualified teacher status (QTS) or early years professional status (EYPS).⁵³ Since staff qualifications can change over time, data from the most relevant year (i.e. 2008–2011) were used for each analysis. For example, when exploring relationships between qualifications, deprivation and quality on the ECERS-R, qualifications data from the year in which the ECERS-R observation was carried out were used.⁵⁴

Census data were also accessed on the areas in which each of the settings and schools were located, and in which each of the children attending the settings and schools lived (for the purposes of this report, an area is defined as 'lower super output area' or LSOA).⁵⁵ As with the qualifications data, data from the most relevant year were selected for each analysis; more detail on this process is provided in the following section.

3.1.3 Deprivation measures

The Indices of Deprivation 2010 provide a relative measure of deprivation for each area (LSOA) in England. The most widely used is the Index of Multiple Deprivation (IMD),⁵⁶ which combines several indices to assess the relative level of deprivation experienced in each area. The overall IMD score or rank comprises 38 indicators across seven domains: income, employment, health, education, crime, access to housing and services, and living environment.⁵⁷ By combining data from the IMD⁵⁸ on the level of disadvantage for each area in England with data from the Early Years and Schools Census on the location of the settings/schools and their users, we created three deprivation measures:

1. **The setting location measure:** based on the location of the settings and schools. This measure was available for 1,023 of the PVI settings and all 169 schools, and allowed us to test whether settings and schools located in deprived areas were of comparable quality to those located in less deprived areas.
2. **The setting user-base measure:** based on the average deprivation level of the areas in which the users of the settings and schools lived. This allowed us to explore whether settings and schools with more disadvantaged user-bases were offering comparable quality to those catering for more advantaged children.⁵⁹

51 Mathers, Singler & Karemaker (2012).

52 For the PVI sector, the census gathers data only from providers offering funded places during the relevant year; settings with no funded children at the time of the census do not need to submit data. However, since the proportion of three- and four-year-olds attending funded early education places is very high (see section 2.1), we can be confident that the census captures information for the vast majority of preschool children and/or settings.

53 These data were not required for the maintained sample, since all classes are led by a graduate.

54 For the very few quality observations carried out in 2007, 2008 data were used.

55 LSOAs are small geographic areas within England, comprising 1,500 residents on average.

56 Department for Communities and Local Government (2011)

57 This analysis used IMD ranks. Usually, the most deprived area would be awarded a rank of 1, so a high numeric value represents lower deprivation. We reversed the ranks so that a higher numeric value represents greater deprivation. This was done for ease of understanding (i.e. so a negative correlation represents quality decreasing as deprivation increases).

58 The supplementary 'Income Deprivation Affecting Children Index' (IDACI) is the measure used by Ofsted in analyses linking quality and deprivation. The IDACI reflects the proportion of all children between birth and 15 years living in income-deprived families in each area. Although it provides information specific to children it is based on income-deprivation only, whereas the IMD reflects other important aspects of disadvantage. For this reason, we used the IMD as our deprivation measure. All analyses were also conducted using the IDACI, resulting in similar (but weaker) associations between quality and deprivation.

59 The setting user-base measure was created for 1,062 PVI settings (98%) and all schools, using data on children from the nursery and reception classes (for schools) and all funded three- and four-year-olds (for PVI settings). All other years, where available, were omitted from the analysis. Since in some settings and schools not all of the classes or rooms catering for three- and four-year-olds were observed for the ECERS assessment, some children included for this measure were in rooms not observed. Thus, we are assuming that all three- and four-year-olds attending a particular setting or school experience the same quality, as represented by an observation carried out in one or more of the rooms or classes catering for this age group.

3. The individual child measure: based on the areas in which individual children attending the settings and schools lived.⁶⁰ This takes the individual child, rather than the setting, as the unit of analysis and allows us to explore – for each of the 40,000 children attending the sample settings and schools – whether those living in disadvantaged areas attend providers of comparable quality to those attended by children living in more advantaged areas.

Each of our measures tells us something slightly different. The setting location measure allows us to explore whether settings and schools located in disadvantaged areas are of lower quality than those located in more affluent areas. However, it does not give us any information about the children who actually attend these providers. It could be that some providers located in disadvantaged areas have a mixed catchment and actually cater for a substantial number of children from advantaged areas; particularly in urban areas where deprived and affluent areas can be geographically very close to each other. The setting user-base measure therefore allows us to explore whether settings catering for more disadvantaged children offer comparable quality to those with advantaged users. Finally, the individual child measure captures the experience of individual children attending the settings within our sample, irrespective of whether other children in their setting live in advantaged or disadvantaged areas. This is important because some individual disadvantaged children may be attending provision in settings with largely affluent populations (and, therefore, with low scores on the ‘setting user-base’ measure).

The associations (correlations) between our three deprivation measures were high but not perfect. This suggests that most – but not all – children living in deprived areas attended a setting in a similarly deprived area, and with similarly disadvantaged peers on average. Likewise, settings located in deprived areas tended to cater largely – but not exclusively – for children living in disadvantaged areas. The fact that these measures are not perfectly correlated provides support for our use of separate measures based on the setting users as well as on the location of the settings and schools.

As a final note, all our deprivation measures are based on geographic location – the level of disadvantage of the areas in which settings and children are located – rather than on individual measures of disadvantage within families. A child living in an area with high levels of income disadvantage may not actually be from a poor home themselves. However, for many other domains of disadvantage, the IMD gives us an accurate reflection of children’s experiences and, for example, may accurately reflect the fact that a child lives in a neighbourhood with high crime rates, high unemployment and so on.

3.2 Characteristics of the samples

In this section, we briefly describe the characteristics of the samples in terms of provision type, distribution across deprivation quintiles, quality and qualifications; making comparisons with national data where available. Additional information is provided in Appendix A.1.

Type of provision

The majority (64 per cent) of the PVI sample were full day care providers, with a large minority of sessional providers (34 per cent). Comparison with national data from the Early Years and Childcare Providers Survey shows that the PVI sample was broadly representative (Table A.1). The majority of schools in the maintained sample were primary schools (91 per cent). The remainder (9 per cent) were nursery schools; a higher percentage than the 3 per cent seen within the country as a whole (Table A.2). The Childcare and Early Years Providers Survey which we used for comparison distinguishes between primary schools with a nursery class and those without (i.e. with a reception class only). These data were not available for our sample of maintained schools, and we do not have completely robust information on whether ECERS observations were conducted in the nursery or reception classes. Rough analysis suggests that the majority (around 80 per cent) were conducted in nursery classes, suggesting that our sample may contain more primary schools with nursery classes than the 43 per cent seen nationally.

⁶⁰ The individual child measure was available for 25,950 children attending the PVI settings (16,244 for the smaller ECERS-E sample) and 14,290 children attending the schools (7,893 for the ECERS-E sample), using the same children as for the user-base measure. One academic year of children was selected for each setting and school, using the year nearest to the relevant quality measure. So, for example, if the ECERS-R observation for a setting was conducted in June 2010, data on three- and four-year-olds from the 09-10 academic year were used to test associations between individual child deprivation and ECERS-R scores. This means that, where possible, the children included in the analysis were among those observed as part of the quality assessment (some of the children included may have been attending a room not observed for the ECERS assessment, where this was carried out in one room within a larger setting or school, see section 3.1.1). Where data were not available for the relevant year, data from the adjacent year were used, taking the previous year as a preference. In a small number of cases for the maintained dataset, data on children from two years earlier were used. This was necessary for observations conducted in 2013, since School Census data were only available to 2011 for this study. Since the relative deprivation of children attending the settings/schools was stable over time, this is unlikely to have affected the findings.

This raises a further important point about the ECERS data in our samples and what it represents. Within the PVI sample, all ECERS data were collected in rooms providing for three and four year old children, and represent quality for children accessing the 15 hour per week free entitlement. Children in nursery classes within maintained schools will also have been accessing the 15 hour entitlement. However, some children in reception classes will have been attending full-time (25 hours per week) rather than part-time places (see Chapter 2). This means we are not entirely comparing like with like when drawing comparisons with the PVI sector. Children in the reception classes observed may be full-time and are also likely to be older than children in either nursery classes or PVI provision. However, since we are interested in exploring the access of all disadvantaged three and four-year-olds to good quality early years provision, whatever their patterns of attendance, the decision not to exclude reception classes is consistent with this.

Distribution across deprivation quintiles

Settings in our PVI sample were somewhat less likely to be located in the 30 per cent most deprived areas of the country, as compared with national data (Table A.3). This was true for both full day care and sessional providers, and was more evident in settings for which we had ECERS-E data. Maintained schools in our sample appeared to be more often located in deprived areas than might be expected from a representative sample, although direct comparisons are difficult to make because of differences in the categories within our sample and the Early Years and Childcare Providers Survey used for comparison (Table A.3).

Graduate qualifications

Classes in all maintained schools are led by a graduate qualified teacher, whereas the proportion of graduate-led PVI settings tends to be much lower. Our PVI sample was broadly representative, with 33 per cent employing either a qualified teacher (QTS) or Early Years Professional (EYP) in comparison to 35 per cent nationally in 2009.

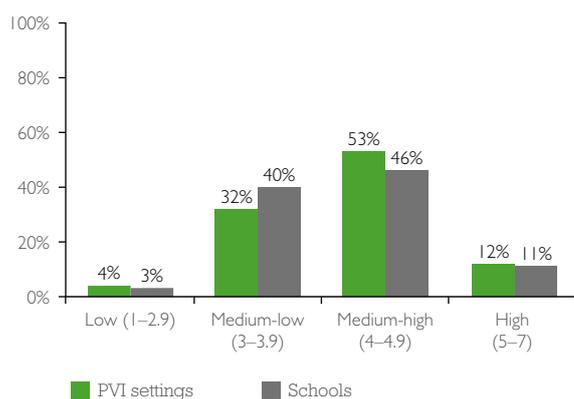
Quality

Comparisons with national Ofsted data for the relevant years shows that our sample of PVI providers tended to be more highly graded by Ofsted than the national picture, with 78 per cent graded as good or outstanding compared with 67 per cent nationally in 2009. In contrast, the maintained school sample tended to receive lower grades than seen nationally, with 58 per cent graded as good or outstanding in comparison to data reported by Ofsted in 2011 for primary schools (69 per cent) and nursery schools (96 per cent). Given that primary schools represented 91 per cent of our sample, comparison with the Ofsted primary school data is the most pertinent.

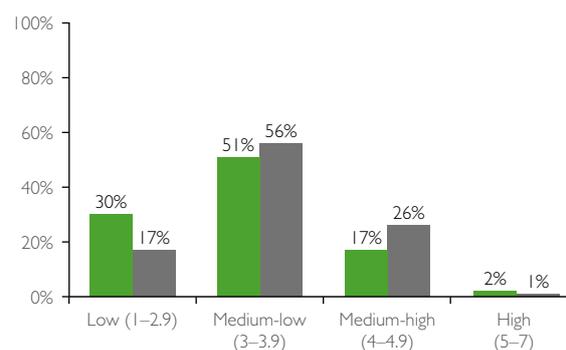
Figure 3.1 shows the spread of settings and schools across the ECERS quality range. On the ECERS-R, the majority of settings and schools achieved overall scores in the mid range (3 to 4.9) on a scale of 1 to 7. Scores on the ECERS-E tended to be lower, with the majority of settings and schools achieving scores in the medium-to-low range (3–3.9).⁶¹

Figure 3.1 Percentage of PVI settings and maintained schools in each ECERS quality band

ECERS-R



ECERS-E



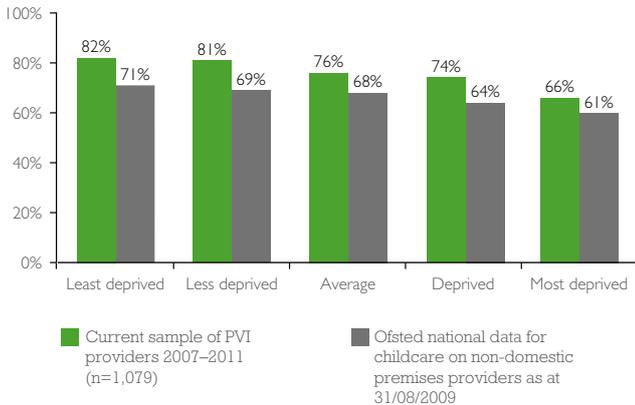
⁶¹ Additional data on quality scores for each sample (and associations between quality measures) are shown in Appendix A.2

3.3 Are Ofsted’s findings replicated for this sample?

The final test of the representativeness of our sample is to consider whether it behaves typically, as far as we can tell, in terms of our question of interest: the relationship between quality and deprivation. Our best means of evaluating this is to look at the relationships between Ofsted grades and deprivation for each of our samples, to see whether they reflect the trend identified by Ofsted at national level for providers in deprived areas to receive lower grades on

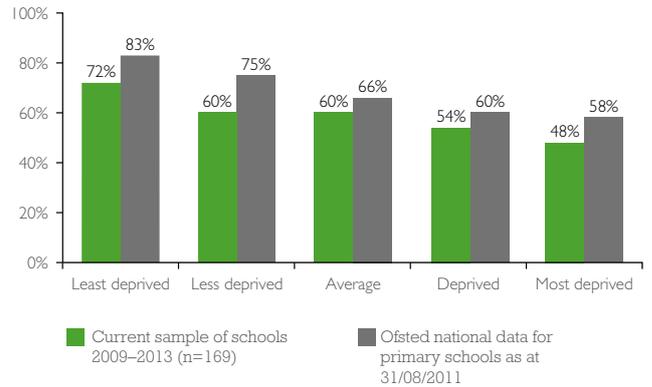
average than those in more advantaged areas (Section 2.2). Figures 3.2 and 3.3 show that this is the case for both our PVI and maintained samples. Although the overall proportion of settings and schools graded as good or outstanding may be higher (or lower) than the national picture, the quality gradients are very similar; with increasingly fewer settings and schools graded as good or outstanding in deprived areas. This reassures us that, although our sample is not fully representative of providers in England, it is a reasonable dataset to use in order to test the relationships between quality and deprivation.

Figure 3.2 Percentage of the PVI sample graded as good or outstanding by Ofsted within different deprivation quintiles (IDACI*), compared to national Ofsted data



* Here we have used the IDACI rather than the IMD as our deprivation measure, since it is the measure used by Ofsted. The correlation between Ofsted grades and IDACI for the PVI sample is statistically significant ($r=0.14$, $p<0.01$, $n=1078$).
Note on comparisons with national data: Ofsted non-domestic childcare providers include after-school clubs but not independent providers. Our sample does not include any after-school clubs but does include a very small proportion (1%) of independent providers.

Figure 3.3 Percentage of the maintained sample graded as good or outstanding by Ofsted within different deprivation quintiles (IDACI*), compared to national Ofsted data



* Here we have used the IDACI rather than the IMD as our deprivation measure, since it is the measure used by Ofsted. The correlation between Ofsted grades and IDACI for the maintained sample is not statistically significant but is similar in size to the correlation for the PVI sample, so the fact that it is not significant may be due to the smaller sample size ($r=0.10$, $n=166$).
Note on comparisons with national data: Our sample contains 9% nursery schools, which tend to be graded more highly and to be more often located in deprived areas. However since the vast majority (91%) of the sample are primary schools, we have used Ofsted data for primary schools as the comparison.

4 Findings: quality and inequality for three- and four-year-old children

In this chapter, we consider the associations between quality as measured by the Environment Rating Scales (ECERS-R and -E) and deprivation as measured by the Index of Multiple Deprivation (IMD). We use three different deprivation measures to consider whether:

- settings and schools located in deprived areas were of comparable quality to those located in less deprived areas (the **setting location** measure)
- settings and schools with more disadvantaged user-bases were of comparable quality to those with users living in more advantaged areas (the **setting user-base** measure)
- the quality experienced by individual children living in deprived areas was of comparable quality to that experienced by children living in less deprived areas (the **individual child** measure).

Section 4.1 presents the findings of these analyses, exploring relationships between quality for three- and four-year-olds (ECERS) and deprivation (IMD) for our sample of PVI settings, and our sample of maintained schools. In Section 4.2, we explore possible factors influencing the relationships between quality and deprivation, to consider whether and why some settings are better able to provide good quality for disadvantaged children. In particular, we explore the role of qualifications in enabling settings and schools to meet the challenge of catering for children from deprived backgrounds.

Throughout the chapter, the term 'association' refers to statistical correlations between two measures. Correlations are measured on a scale of 0 to 1, where 1 represents a perfect association between measures, and 0 represents no association at all.

Key findings

- *Government-maintained schools located in disadvantaged areas and serving disadvantaged children offered quality for three- and four-year-olds that was comparable (and in some cases higher) than schools serving the more advantaged. This was true across all dimensions of quality measured using the Early Childhood Environment Rating Scales (ECERS-R and ECERS-E).*
- *Within the PVI sector, quality for three- and four-year-olds was lower in settings located in deprived areas; with more disadvantaged user-bases; and attended by individual children from disadvantaged backgrounds. This was most evident in relation to the quality of interactions; support for learning, language and literacy; and provision for diversity and individual needs. In other domains – including the physical environment and resourcing, care routines and health and safety practices – PVI settings offered comparable quality to all children.*
- *Within the PVI sector, settings with a graduate member of staff scored more highly on all quality measures. Supplementary analysis from Ofsted showed that the most highly graded settings had both a graduate and a high proportion of staff qualified to Level 3 (A-level standard). Thus, having a well-qualified staff team was associated with higher quality in all PVI settings, whether they served advantaged or disadvantaged areas.*
- *However, only graduate leadership was associated with a narrower quality gap between PVI settings located in deprived and more advantaged areas. Among non-graduate settings, the clear and statistically significant drop in quality between the least and the most deprived areas was evident across all three quality measures. Among graduate settings, the quality gradient was much less steep, and in some cases eliminated altogether.*

4.1 Associations between quality and deprivation

4.1.1 The PVI sector

In this section we consider quality for three- and four-year-olds offered by settings within the PVI sector. Table 4.1 and Figure 4.1 present the associations between quality and area deprivation, using our three separate deprivation measures. The findings confirm the trends identified by Ofsted at national level: quality was lower in settings located in deprived areas; with more disadvantaged user-bases; and attended by individual children living in disadvantaged areas.

This trend was consistent across all three of our deprivation measures, with negative correlations indicating that as deprivation increased, quality decreased. This association was identified for overall quality, as measured by the ECERS-R and ECERS-E, and also for a number of the individual dimensions of quality assessed by the ECERS 'subscales'. Worryingly, the aspects of practice which tended to be lower in settings located in deprived areas, and serving disadvantaged children, were those relating to the quality of interactions and to support for language and learning. From Figure 4.1, which displays the size of the correlations visually, we can see that the strongest associations were identified for the ECERS subscales assessing the quality of support for children's developing language, reasoning and literacy skills. In these areas, PVI settings located in deprived areas, and serving deprived children, offered the lowest quality as compared with other settings. These settings also achieved lower scores on: the ECERS 'interaction' subscale, which measures the quality of interactions between adults and children (such as warmth and respect), behaviour management and support for peer interactions; on the ECERS-E subscales assessing quality of support for maths and science skills (e.g. counting, critical thinking); and on the ECERS-E 'diversity' subscale, which assesses how effectively settings celebrate and cater for diversity, including meeting children's individual learning needs.

The associations (correlations) were all small, in that they fell between -0.3 and +0.3. However, given the extent of government policy and funding aimed at making sure children in disadvantaged areas have access to the quality they need to support their development, any association in the wrong direction – however small – is worthy of concern.

No associations were identified in relation to the quality of the physical environment ('space and furnishings') and the overall schedule ('programme structure'); and only weak associations in relation to the quality of resourcing and materials ('activities') and to routines such as mealtimes and toileting, and health and safety practices ('personal care routines'). In these areas, the quality provided by PVI settings serving the most and least deprived areas and children was broadly comparable.

4.1.2 The maintained school sector

Turning now to consider quality for three- and four-year-olds in the maintained sector, we find a much more positive picture (Table 4.2 and Figure 4.2). In direct contrast to the PVI sector, the quality of provision offered by schools located in deprived areas, and catering for children living in disadvantaged areas, was comparable to that offered by schools serving the more advantaged. No negative associations were identified for any of the overall measures, or for the individual ECERS 'subscales', suggesting that schools provided comparable quality across all dimensions assessed.

For a number of aspects of practice, quality was actually higher within schools located in disadvantaged areas and serving disadvantaged children. The strongest effects were seen for the quality of the physical environment ('space and furnishings'), and for the more curricular aspects of quality assessed by the ECERS-E. Thus, the schools in our sample were doing a good job at providing comparable – and in some cases better – quality for the children who need it most.

TABLE 4.1 STATISTICALLY SIGNIFICANT ASSOCIATIONS BETWEEN QUALITY FOR THREE- AND FOUR-YEAR-OLDS (ECERS) AND AREA DEPRIVATION (IMD) FOR THE PVI SAMPLE

Negative correlations mean as deprivation increases, quality decreases (0=no association, ± 1 =perfect association)

	Setting location	Setting user-base	Individual child
ECERS-R overall score	-.07*	-.09*	-.04*
1. Space and furnishings			
2. Personal care routines			-.05*
3. Language-reasoning	-.18**	-.21**	-.14**
4. Activities		-.07*	-.04*
5. Interaction	-.14**	-.16**	-.09*
6. Programme structure			
n	1,023	1,011	25,950
ECERS-E overall score	-.20**	-.27**	-.18**
1. Literacy	-.23**	-.28**	-.19**
2. Maths	-.15**	-.20**	-.14**
3. Science		-.12**	-.09*
4. Diversity	-.14**	-.20**	-.13**
n	618	614	16,244

* = significant at the 5 per cent level ($p < 0.05$)

** = significant at the 10 per cent level ($p < 0.01$)

Figure 4.1 Statistically significant associations between quality for three- and four-year-olds (ECERS) and area deprivation (IMD) for the PVI sample

Negative correlations mean as deprivation increases, quality decreases (0=no association, ± 1 =perfect association)

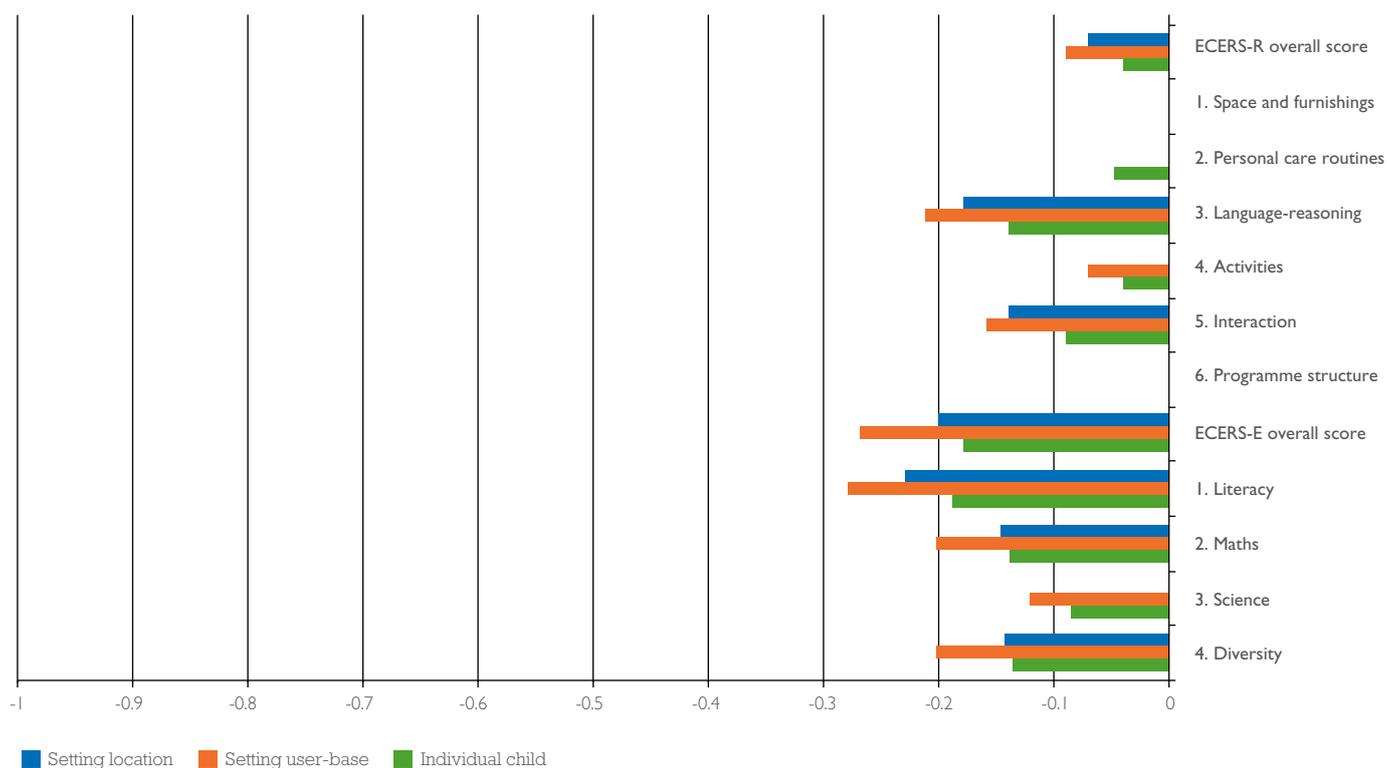


TABLE 4.2 STATISTICALLY SIGNIFICANT ASSOCIATIONS BETWEEN QUALITY FOR THREE- AND FOUR-YEAR-OLDS (ECERS) AND AREA DEPRIVATION (IMD) FOR THE MAINTAINED SAMPLE

Positive correlations mean as deprivation increases, quality increases (0=no association, ±1=perfect association)

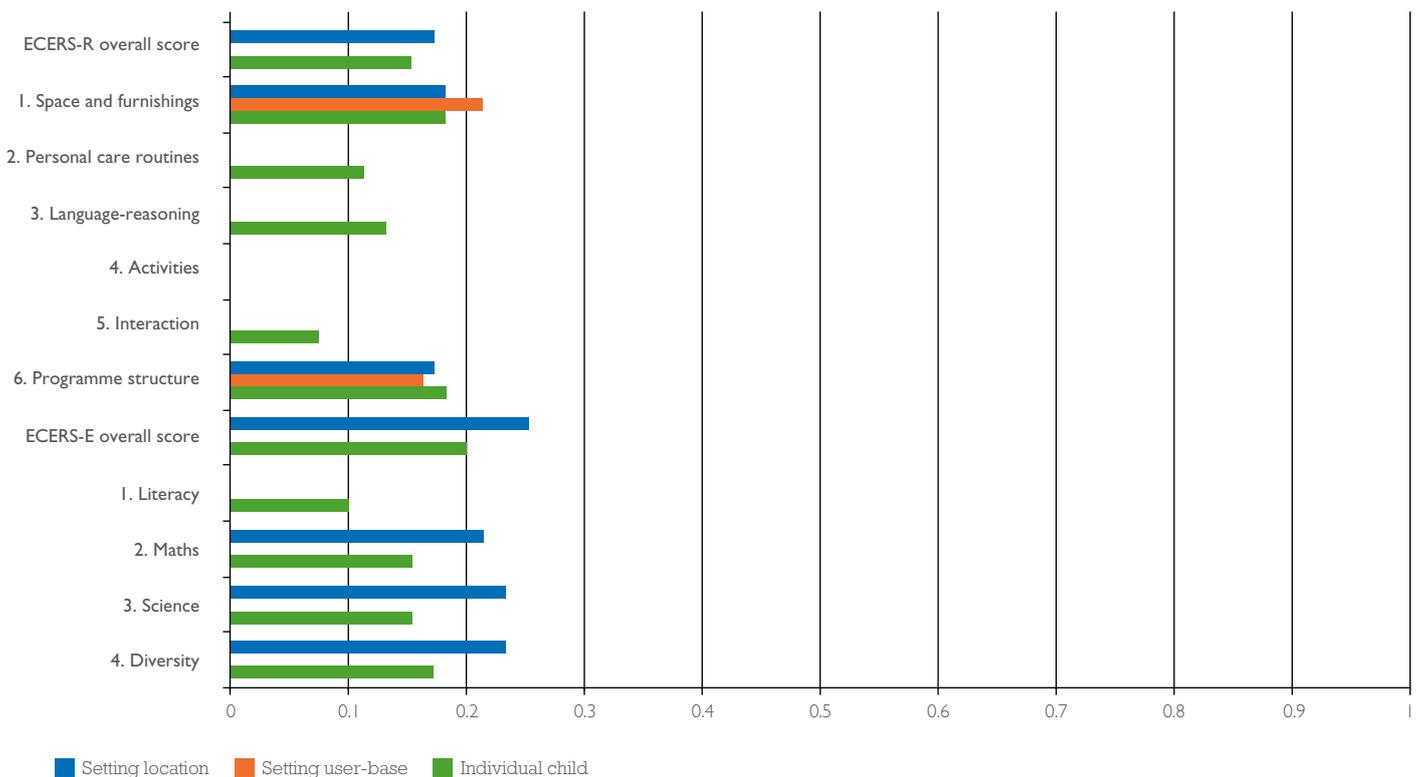
	Setting location	Setting user-base	Individual child
ECERS-R overall score	.17*		.15*
1. Space and furnishings	.18*	.21**	.18*
2. Personal care routines			.11*
3. Language-reasoning			.13*
4. Activities			
5. Interaction			.07*
6. Programme structure	.17**	.16*	.18*
n	169	168	14,290
ECERS-E overall score	.25*		.20*
1. Literacy			.10*
2. Maths	.21*		.15*
3. Science	.23*		.15*
4. Diversity	.23*		.18*
n	99	99	7,893

* = significant at the 5 per cent level

** = significant at the 10 per cent level

Figure 4.2 Statistically significant associations between quality for three- and four-year-olds (ECERS) and area deprivation (IMD) for the school sample

Positive correlations mean as deprivation increases, quality increases (0=no association, ±1=perfect association)



4.1.3 Discussion and comparison of findings

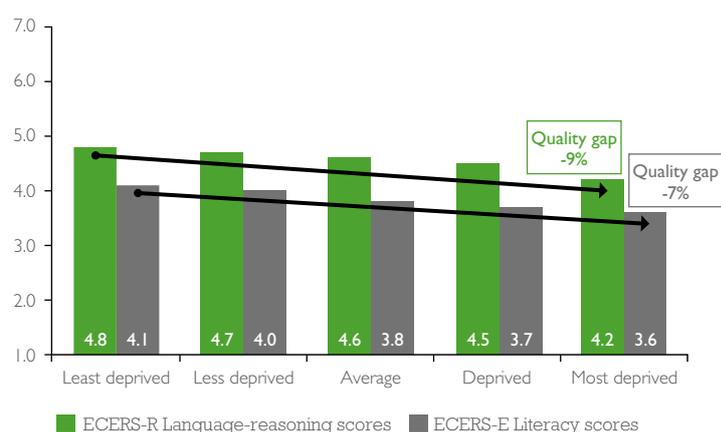
Our separate analyses of the PVI and maintained sectors have generated an interesting and contrasting set of findings. Within the sample of PVI providers, quality for three- and four-year-olds was *lower* in settings located in deprived areas, with more disadvantaged user-bases, and attended by individual children living in disadvantaged areas; mirroring the conclusions drawn by Ofsted. However, within the maintained sample – and in contrast to Ofsted’s findings for primary schools – the quality offered by schools serving disadvantaged areas and children was comparable to, and sometimes significantly higher than, that offered by schools serving the more affluent.

The PVI ‘quality gap’

We focus first of all on the findings for PVI settings. The analysis shows that, despite government investment in raising quality in disadvantaged areas and within the PVI sector (Chapter 2), disadvantaged children accessing their early education provision in PVI settings are getting a worse deal than their more affluent peers. Quality was lower in settings serving deprived areas and children; and it was lower largely in the dimensions of quality which we know to be important for children’s development: the quality of interactions; and support for children’s language and learning.⁶² Of particular concern is the fact that disadvantaged children lose out most on good quality support for their developing communication, language and literacy skills. This is illustrated by an additional figure (4.3) showing scores on the language and literacy subscales of the ECERS-R and -E. A clear gradient can be seen, with quality decreasing as deprivation increases. We can think of this as the ‘quality gap’ between settings in the least and the most deprived areas. In relation to the quality of support for children’s language and reasoning skills, the quality gap was nine per cent; and in relation to support for literacy skills the quality gap was seven per cent. In both cases, differences in scores between settings in the least and most deprived areas were statistically significant.

Language skills during the early years are one of the strongest predictors of later success⁶³ and the latest release of Early Years Foundation Stage Profile (EYFSP) results shows that literacy is the area in which the greatest proportion of children in England failed to reach the expected stage of development by age five.⁶⁴ Although we cannot claim any causal link between our findings on quality and EYFSP scores at national level, our analysis does indicate that the children most in need of good quality support for language and literacy are least likely to receive it, at least within the PVI sector.

Figure 4.3 Scores for the ECERS language subscales by deprivation quintile (IMD setting location measure) for the PVI sample



Number of settings in each quintile: ECERS-R (371; 237; 204; 127; 84), ECERS-E (265; 142; 106; 54; 51).

Significant differences are shown by a solid arrow (Language-reasoning, $r=9.29$, $p<0.001$; Literacy, $r=8.28$, $p<0.001$). In fact, post-hoc tests show that settings in the most deprived quintile achieved significantly lower scores than settings in all other quintiles for both ECERS subscales (with the exception of the ‘deprived’ quintile for the ECERS-R).

For the majority of the negative associations identified between quality and deprivation, findings were consistent across all three deprivation measures: we see broadly the same trends whether we consider the location of settings, the extent to which they cater for disadvantaged users, or the quality experienced by individual children living in disadvantaged areas. While this provides reassurance that our findings are robust, it delivers a stark message: children living in disadvantaged areas, attending settings in disadvantaged areas, and attending settings alongside other disadvantaged children, are the least likely to experience high quality early years provision.

Of our three deprivation measures, the ‘setting user-base’ measure showed the strongest negative associations with quality for PVI settings (Figure 4.1). This suggests that it is *most* difficult to provide high quality in settings where a significant proportion of children are disadvantaged, and therefore at higher risk of poor outcomes than their better off peers. The implications of this finding for the social mix within early years settings is discussed later in this report.

62 Melhuish (2004a, b)

63 Justice et al. (2003), Levy et al. (2006a/b), Storch & Whitehurst (2002)

64 Just 61 per cent of children reached the expected level of development in all literacy early learning goals (DfE, 2013d).

How can we explain the fact that quality is poorer in disadvantaged areas? One obvious factor is the challenge of providing for children with a broad range of needs. Children growing up in difficult circumstances are more at risk of language delays and behavioural problems, and more likely to speak English as a second language. Greater resources and more skilled, informed and flexible practice are required to meet their needs effectively. Support for this hypothesis is provided by the fact that the quality was comparatively lowest in settings with the most disadvantaged user-bases (i.e. more deprived children).

There is also reason to believe that PVI settings in deprived areas are less likely to have access to the resources they need to meet the challenge of catering for disadvantaged children than settings with more affluent catchments. Many settings in deprived areas, particularly those in the private sector, face problems with sustainability⁶⁵ because parents are less able to pay for additional hours over and above their free entitlement. As a result, these settings may have more limited funds to spend on the quality of their environments, and to employ a well qualified staff team, with the skills needed to provide for children and families with a broad range of needs. It may also be harder to attract and retain good quality staff within settings serving disadvantaged areas and children. While the latest Childcare and Early Years Providers Survey finds few differences in the proportion of qualified staff working in PVI settings in the most and least deprived areas,⁶⁶ other studies have found some evidence of a qualification gradient, particularly within the private sector.⁶⁷

A third possibility is that either the observers or the quality assessment measures (or both) may be biased by the proportion of disadvantaged children attending a setting. Even in a setting offering good quality for children from deprived backgrounds, it may be more difficult to achieve a high rating or grade than in a setting of equally good quality with a middle class catchment. If evidence of high level conversation and modelling of vocabulary were required to achieve a high score, for example, observers may be less likely to see this in a setting where the language skills of children are poor. Equally, an observer or inspector might tend towards lower ratings in settings where there are many behavioural issues, even if staff deal with these effectively.

While these are all valid hypotheses, the majority would apply equally to the maintained sector as to the PVI sector. Schools are just as open to issues of assessment or observer bias, and face the same challenges in catering for disadvantaged children. In fact, schools in deprived areas are likely to cater for greater proportions of disadvantaged children than PVI settings in similarly deprived areas. A recent study showed that, if a child living in one of the ten per cent most deprived areas accesses her free entitlement in a school, half of her classmates are likely to also live in the poorest areas, as compared with 36 per cent for a similar child attending a PVI setting.⁶⁸ And yet the schools in our sample were still managing to provide quality for disadvantaged three- and four-year-olds which was comparable to that offered to more advantaged children.

How are schools able to narrow the quality gap?

So what do schools have that the PVI sector does not have? Why and how are they able to meet the needs of disadvantaged children more effectively? Two obvious differences are resourcing and staff qualifications. Schools are directly funded by the Government, protecting those in disadvantaged areas from shortfalls relating to parents' ability to pay.⁶⁹ They also have a more established infrastructure than the PVI sector, meaning that teachers working with disadvantaged children and families have access to a much broader scope of advice and specialist support to help them meet potentially complex needs.

Another obvious difference between the sectors rests in the qualifications of staff. Whilst all nursery schools, nursery classes and reception classes are led by a qualified teacher, the proportion of graduates working in PVI settings is much lower; and less than half of PVI settings employ a member of staff with QTS or EYPS.⁷⁰ Given that higher qualifications are identified consistently within the literature as a predictor of higher quality,⁷¹ we might suppose that graduates are more able to rise to the challenge of catering for children likely to have a broad range of needs. In Section 4.2 we explore this question further, and consider which characteristics of settings are associated with being able to provide good quality for disadvantaged children, with the aim of identifying ways to support the PVI sector in narrowing the quality gap between settings serving the least and most deprived.

65 Dickens, Wollny & Ireland (2012)

66 Brind et al. (2012)

67 Gambaro, Stewart & Waldfogel (2013)

68 Gambaro, Stewart & Waldfogel (2013)

69 This also means that they are less prone to the effects of market forces, which may be an additional factor contributing to the lower quality seen within PVI providers serving disadvantaged areas and children (i.e. if more affluent families are selecting higher quality settings and/or driving up quality within some settings as a result of this tendency).

70 Department for Education (2013)

71 Sylva et al. (2010), Mathers et al. (2011)

The nature of our sample

We must also acknowledge that the different findings for our PVI and maintained samples might have arisen, not from real differences between the sectors, but as a result of sampling differences. Our two samples were not representative and were not drawn according to the same criteria. If one or more of their sources were atypical in terms of the relationship between quality and deprivation, this could influence our findings. The PVI and maintained school samples also differed slightly in terms of how they mirrored national data on Ofsted grades, and on the distribution of settings across different deprivation quintiles (Chapter 3).

As described earlier in this report (Section 3.3), the best test of the suitability of our data for exploring the relationships between quality and deprivation was to look at the pattern of Ofsted grades in the most and the least deprived areas. The fact that both the PVI and the school samples mirrored national trends (lower grades in deprived areas) gives us confidence that they were reasonably typical, at least in terms of our question of interest.

But it does raise the question of why our findings for the maintained sector were different to Ofsted's. Whereas Ofsted finds primary schools in deprived areas to be of lower quality, the schools in our study located in deprived areas, and catering for deprived children, achieved comparable score on the ECERS-R and -E to those with more advantaged users. The answer may lie in differences between our two quality measures and what they represent. The overall effectiveness grade awarded by Ofsted to a primary school relates to the whole school, including provision for children up to age 11. In contrast, our ECERS data specifically reflects quality for preschool children. It is likely to be a more accurate measure of the experiences of three- and four-year-olds than the overall Ofsted grade for primary schools. Perhaps the tendency for primary school grades to be lower in deprived areas masks a tendency for the *early years provision* offered by schools to be comparable in the most and the least deprived areas. Evidence for this is provided by recent Ofsted data for nursery schools (which specialise in early years provision), showing no quality gap between nursery schools in different areas.⁷² This suggests our findings may be less at odds with Ofsted's than it first appeared, particularly given that our sample included a small proportion (nine per cent) of nursery schools among the majority primary schools. It seems that, despite an overall tendency for primary schools in deprived areas to be of lower quality, both primary and nursery schools are effective in maintaining the standards of *early years provision* for disadvantaged three- and four-year-olds.

While further research is required to confirm these findings in a representative sample, initial indications are promising for disadvantaged three- and four-year-olds receiving their early education in the maintained sector.

4.2 Which kinds of settings can maintain good quality in deprived areas?

In this section we use data from the School and Early Years Censuses to explore the different characteristics of providers in our study, and how these relate to the associations identified between quality and deprivation. Are certain kinds of early years providers better able to offer good quality in deprived areas than others? In particular, we explore possible reasons for the different patterns observed in the PVI and maintained sectors.

In the previous section, we set out a number of possible hypotheses for the ability of state-maintained schools to maintain quality standards when providing for disadvantaged children. Among other things, the sector benefits from better funding and infrastructure and more highly qualified staff, all of which puts schools in a good position to cater effectively for a broad range of developmental needs. Whilst we are not able to test the effects of funding or infrastructure, we do have census data on staff qualifications. We can use these data to test whether the relationships between quality and deprivation vary according to the qualifications of staff. Our particular interest is in graduate-level staff, since a primary difference between the school and PVI sectors is the extent of graduate leadership. While all nursery and reception classes are led by a dedicated qualified teacher, less than half of settings in the PVI sector employ a graduate with QTS or EYPS;⁷³ and when they do, few will have a graduate leading all groups/rooms. More common is to have one graduate employed within a setting, who may be based in one room, or work a number of hours across different rooms. Only eight per cent of early years settings have more than one graduate-level member of staff.⁷⁴

Although our interest is in explaining differences between the school and PVI sectors, we can only test the effect of graduate presence within the PVI dataset, since all the schools are graduate led. This section presents the results of analyses which split the PVI sample into the 347 settings with a graduate on the staff team and the 714 without, and compare the associations between quality and deprivation within these two sub-samples. If our hypothesis – that graduates help settings to rise to the challenge of maintaining

⁷² 96 per cent were graded as good or outstanding in the most deprived quintile, compared with 95 per cent in the least deprived quintile (Ofsted, 2014).

⁷³ Department for Education (2013)

⁷⁴ Figures for settings employing an early years professional (Brind et al. 2012).

quality when catering for disadvantaged children – is correct, then we should see a narrower ‘quality gap’ between settings serving the least and most deprived areas in graduate settings than in non-graduate settings. Our definition of ‘graduate-led’ is that settings employ a qualified teacher (QTS) or early years professional (EYP), since these are the categories collected by the Early Years Census from which our qualification data are drawn. Unfortunately, the census does not gather data on the qualifications of non-graduate staff. However, we have been able to supplement our own findings with data provided by Ofsted. Ofsted has recently begun to gather data on staff qualifications during inspection visits, which provides an excellent basis for exploring relationships between qualifications and inspection grades. Crucially, since data are collected on the qualification levels of all staff, it allows us to consider the effects of having a well qualified staff team as a whole, as well as the effects of graduate leadership. In section 4.2.2, we present analysis carried out by the Ofsted data analysis team on the ways in which graduate presence, and the proportion of staff qualified to Level 3 (A-level standard), relate to the quality gap between settings serving the most and least deprived areas. This provides an effective means of confirming our own analyses using national data.

The majority of the analyses in this section use the ‘setting location’ deprivation measure, based on the geographic location of the settings, since this the most commonly used and readily available, allowing comparisons with data elsewhere. Equivalent analyses were also conducted using the individual child measure and produced very similar results, suggesting that our setting location measure was a reasonable proxy.⁷⁵

4.2.1 Comparing graduate and non-graduate settings within the PVI sample

A wealth of previous international research identifies staff qualifications as a primary driver of quality for three- and four-year-old children.⁷⁶ In England, the Effective Preschool, Primary and Secondary Education project⁷⁷ found that settings employing a qualified teacher offered the highest quality for preschool children; and in the evaluation of the Graduate Leader fund, PVI settings with an overall more

highly qualified staff team, and those employing a graduate EYP, were found to offer higher quality to three- and four-year-olds.⁷⁸

The same trends were identified within our sample of PVI providers, with graduate settings scoring more highly on all of our quality measures. Settings employing a qualified teacher or EYP scored more highly than non-graduate settings on all three quality measures, with differences statistically significant for Ofsted grades and ECERS-R, and approaching significance for the ECERS-E.⁷⁹ Although the differences in quality scores were relatively small, we should remember that the overall range in quality scores was relatively narrow, with the majority of settings falling within the 3–4.9 range for ECERS-R, within the 3–3.9 range for the ECERS-E, and graded as good by Ofsted (Section 3.2). Having established that graduate presence has some association with quality, we now move on to explore whether the quality gap between settings serving the most and least advantaged is narrower for graduate settings than for non-graduate settings.

Are there fewer graduates working in deprived areas?

Our hypothesis is that non-graduate settings play some part in the tendency for quality to be lower in PVI settings serving disadvantaged areas and children. One possible scenario is that settings in deprived areas are less able to recruit and retain graduates, resulting in lower quality. Our data suggest that this is not the case for our PVI sample: no significant differences were identified in the proportion of graduate-led settings across different deprivation quintiles. Similar evidence at national level is provided by the 2011 Early Years and Childcare Providers Survey⁸⁰ and by recent inspection data from Ofsted,⁸¹ both of which conclude that there are few differences in the proportions of graduate staff working in centre-based settings in the most and least deprived areas. The theory that settings in poor areas have fewer graduate staff seems, therefore, not to hold up to scrutiny.

Are graduate settings better equipped to maintain quality standards in deprived areas?

A second hypothesis is that graduate settings are more capable of maintaining quality standards when faced with

⁷⁵ Due to the way the setting user-base measure was constructed, it was not suitable for this part of the analysis.

⁷⁶ Fukkink & Lont (2007)

⁷⁷ Sylva et al. (2010)

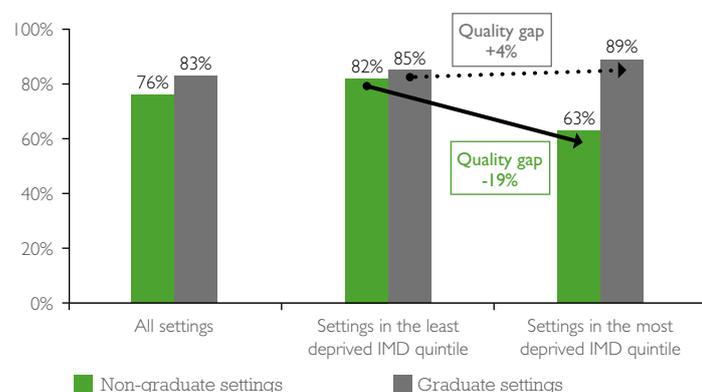
⁷⁸ Mathers et al. (2011)

⁷⁹ Scores for non-graduate/graduate settings: Ofsted grades reversed (2.88 vs 3.02), ECERS-R (4.18 vs 4.31), ECERS-E (3.33 vs 3.46). Associations between graduate presence and quality were also tested in multiple regression models, which enable the effects of a specific characteristic (e.g. qualifications) to be tested whilst accounting for or ‘holding constant’ other variables which might influence quality. The analysis (Appendix A.3) confirmed that having a QTS or EYP was a significant predictor of quality as measured by Ofsted, ECERS-R and ECERS-E. Other predictors included Children’s Centre status (ECERS-R) and type of provision (ECERS-E).

⁸⁰ Brind et al. (2012)

⁸¹ Data provided for this analysis by Nathan Hook (2014) based on data for 78,076 staff working within settings for which Ofsted held qualifications data in October 2013. For settings in all five deprivation quintiles, three per cent of staff held EYPS.

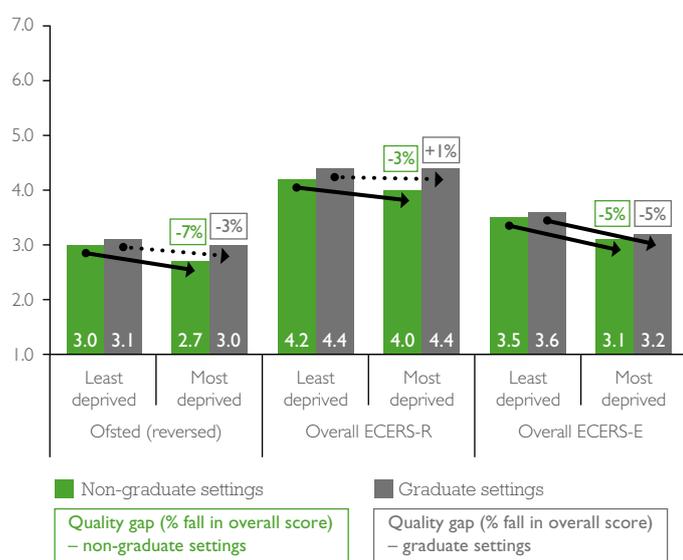
Figure 4.4 Percentage of graduate and non-graduate PVI settings graded good or outstanding by Ofsted



Number of settings: 1,061 (all); 714 (non-graduate); 347 (graduate).

Significant differences at $p < 0.05$ or greater are shown by a solid line (dashed lines denote non-significant differences).

Figure 4.5 Mean quality scores for graduate and non-graduate PVI settings (all measures)



Number of settings (non-graduate/graduate): Ofsted (714/ 347), ECERS-R (640/ 374), ECERS-E (285/ 155).

Significant differences at $p < 0.05$ or greater are shown by a solid line (dashed lines denote non-significant differences).

Ofsted grades are measured on a four-point scale and ECERS scores on a seven-point scale.

Percentage change is calculated as a proportion of the overall maximum score (i.e. 4 or 7).

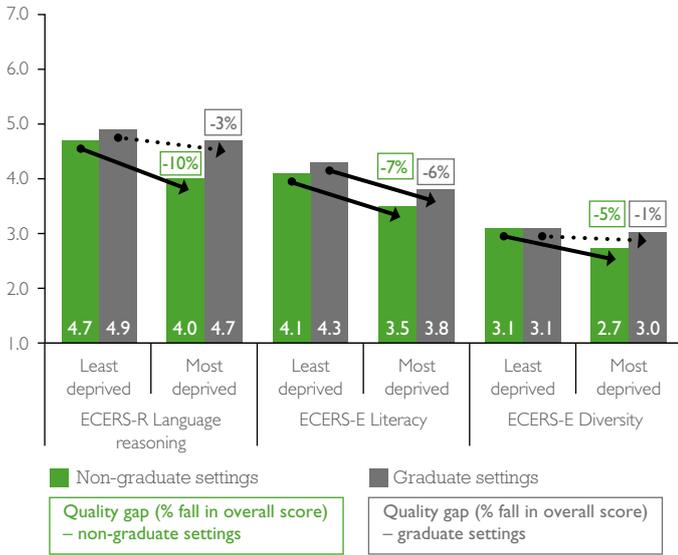
the challenge of catering for disadvantaged children. We tested this by splitting the PVI sample into graduate and non-graduate settings, and considering the relationships between quality and deprivation separately for each group. If our hypothesis is correct, then we should see a narrower 'quality gap' in graduate settings serving the most and least deprived areas than in non-graduate settings.

We look first at Ofsted grades. Figure 4.4 shows the percentage of graduate and non-graduate settings within our sample graded as 'good' or 'outstanding' by Ofsted. The first thing to note is that graduate qualifications are clearly associated with better Ofsted grades: 83 per cent of graduate settings were graded as good or better, compared with only 76 per cent of non-graduate settings, and this pattern was also seen for settings in the least deprived quintile (85 vs 82 per cent) and for settings in the most deprived quintile (89 vs 63 per cent). However, although graduate settings achieve higher grades than non-graduate settings across the board, the difference was much wider in deprived areas. We illustrate this through the notion of the 'quality gap': the difference in quality between settings located in the least and the most deprived areas. Among non-graduate settings (in green) the quality gap is wide (19 per cent) and statistically significant, with grades falling dramatically in the most deprived areas as compared with the least deprived. However, among graduate settings (in grey), there is no evidence of a quality gap. In fact, the proportion of graduate settings graded as good or outstanding in deprived areas was actually higher by four per cent than in the least deprived areas. Although we cannot claim causality in a correlational analysis of this kind, our findings do indicate that having a graduate may enable settings located in disadvantaged areas to cater more effectively for children within their catchment.

Figure 4.5 extends the analysis by comparing all three of our quality measures, this time with Ofsted grades transformed into a continuous variable (running from 1 to 4) rather than as categories. Scores on the ECERS are measured on a scale of 1 to 7, with 7 representing the highest quality. For ease of interpretation, the Ofsted measure has been reversed so that a high score (4) represents better quality. Again, we see a clear association between having a graduate on the staff and higher quality, with graduate settings achieving higher scores than non-graduate settings on all three measures.

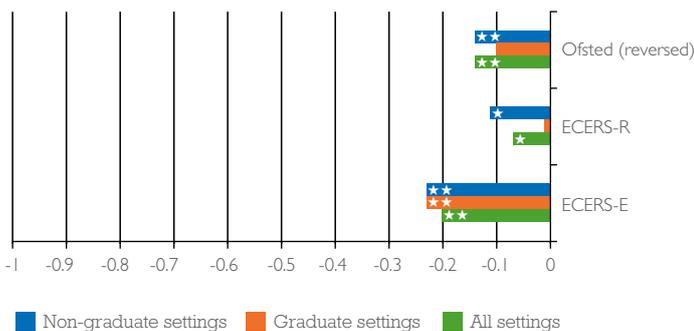
And what of the quality gap? For both Ofsted grades and overall ECERS-R scores, we see the same trend. While for non-graduate settings there is a noticeable drop in quality as we move from the least to the most deprived areas, the gradient is much gentler for graduate settings. For Ofsted grades the quality gap between settings in the most and

Figure 4.6 Mean scores on selected ECERS subscales for graduate and non-graduate PVI settings



Number of settings non-graduate/graduate: Language-reasoning (640/ 285), Literacy (285/ 155), Diversity (285/ 155). Significant differences at $p < 0.05$ or greater are shown by a solid line (dashed lines denote non-significant differences). Percentage change is calculated as a proportion of the overall maximum score (i.e. 7).

Figure 4.7 Associations between quality for three- and four-year-olds (all measures) and area deprivation (IMD setting location measure) for the PVI sample: graduate and non-graduate settings



Negative correlations mean as deprivation increases, quality decreases (0=no association, ±1=perfect association) ☆ = significant at the 5 per cent level ☆☆ = significant at the 10 per cent level

least deprived areas reduces from 7% to 3% as compared with non-graduate settings and becomes non-significant statistically, while for the ECERS-R it closes altogether. Thus, for quality as measured by Ofsted and the ECERS-R, having a graduate is associated with better quality; but this association is strongest for settings in deprived areas. For the ECERS-E, the association between graduate presence and quality was similar for settings in the least and in the most deprived areas. Thus, for the more 'curricular' dimensions of quality measured by ECERS-E, having a graduate was equally associated with better quality for all children.

In Section 4.1, we saw that the quality gap between PVI settings located in the least and most deprived areas was widest in relation to quality of support for language and literacy. To what extent can graduates help to mitigate this tendency within these critical dimensions of practice? Figure 4.6 shows that the quality gap narrows for both the ECERS-R 'language-reasoning' subscale and the ECERS-E 'literacy' subscale in graduate settings, as compared with non-graduate settings. The trend is clearest for 'language-reasoning', where there is a steep and statistically significant fall in quality as we move from the least to the most deprived areas in non-graduate settings (a 10 per cent drop), reducing to a gentler and non-significant gradient (a three per cent drop) in graduate settings.

We also present findings for the 'diversity' subscale of the ECERS-E. In addition to assessing how well settings cater for racial, cultural and gender differences, this subscale measures provision for children's individual learning needs, which is particularly critical for any setting catering for a broad range of needs among disadvantaged children. In the least deprived areas, graduate and non-graduate settings fare equally well. However, in the most deprived areas, where children are likely to have the most wide-ranging and complex needs, we see a steeper drop in quality among non-graduate settings (a five per cent drop) than among graduate settings (a one per cent drop); with the quality gap for graduate settings becoming non-significant statistically. This suggests that having a graduate on the staff team may help settings to meet children's individual learning needs, and provide appropriately for children and families from different backgrounds, even in areas where there is great diversity and where children are at greater risk of poor outcomes.

As already stated above, we cannot claim causality. It may be that settings which are already of good quality are more able to attract graduates, and that this tendency is strongest in deprived areas. However, our findings may also support the hypothesis that having a graduate mitigates the tendency for quality in the PVI sector to be lower in deprived areas. The enhanced training of graduates may enable them to meet the

greater needs of children from disadvantaged communities and so provide a more expansive learning environment, as well as modelling good practice to other members of staff.

Our last question is to consider how much of the tendency for quality to drop in deprived areas is mitigated in graduate settings. Figure 4.5 suggests that the gradient or ‘quality gap’ between settings serving the least and most deprived areas is eliminated for ECERS-R, becomes less steep for Ofsted grades and remains constant for the ECERS-E.

In this final analysis, we explore what happens to the associations (correlations) between quality and deprivation identified in Section 4.1 when we split the sample into graduate and non-graduate settings. Figure 4.7 shows the original associations (for all settings) between quality and area deprivation, for each of the quality measures. All are statistically significant and negative: as deprivation increases, quality decreases. Correlations are also shown for graduate and for non-graduate settings separately. If, as we suspect, graduate settings are more able to rise to the challenge of providing high quality in deprived areas, then the negative associations between quality and deprivation should be smaller for this group. For Ofsted and ECERS-R this is exactly what we see, confirming the pattern seen in Figure 4.5: associations weaken for Ofsted and are almost eliminated for ECERS-R. The opposite pattern is evident in the non-graduate settings; the negative associations are either the same size as those seen for all settings (Ofsted) or strengthen slightly (ECERS-R), suggesting non-graduate settings are less capable of providing good quality in deprived areas. As before, there was less evidence of the tendency for lower ECERS-E scores in deprived areas to be mitigated by graduate presence – as we know from Figure 4.5, this is because graduate settings in all areas (including the least deprived) score more highly on this scale. This final analysis therefore confirms the pattern already established: among graduate settings, the gradient or ‘quality gap’ between settings serving rich and poor is eliminated for ECERS-R, becomes less steep for Ofsted grades and remains constant for the ECERS-E.

Differences between the three quality measures likely arise from the fact that each captures different dimensions of quality. ECERS-R is a measure of the care and education provided directly to three- and four-year-old children, including the physical environment, care routines, and support for social, emotional and cognitive development. Its focus on learning is based largely around the prime areas of the EYFS: communication and language; personal, social and emotional development; and physical development. Ofsted grades capture an even broader picture of quality, which

includes the quality of provision experienced by children but also wider aspects such as leadership and management. In contrast, the ECERS-E focuses very specifically on the ‘curricular’ areas of learning and development (literacy, maths, science) and on provision for cultural and developmental diversity. Our findings suggest that, while having a graduate is associated with better quality across all measures, it may be particularly important in enabling settings in deprived areas to maintain the quality of overall care and education provided to disadvantaged children (as measured by the ECERS-R and Ofsted).

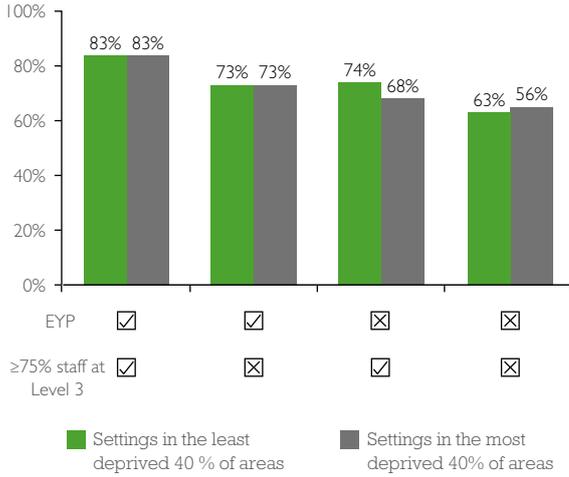
To conclude then, our findings show that graduate settings are of higher quality across all three of our quality measures (Ofsted, ECERS-R and ECERS-E). For quality as measured by Ofsted and the ECERS-R, having a graduate is most strongly associated with better quality in settings serving deprived areas. For the more ‘curricular’ dimensions of quality measured by ECERS-E, having a graduate is associated with better quality for *all* children but does not act to close the quality gap between settings serving the least and most advantaged.

4.2.2 Qualifications of the wider staff team (national Ofsted data)

The current study has focused on the effects of graduate qualifications in mitigating the quality gap between settings serving the least and most deprived areas. However, graduate leadership is not the only important workforce characteristic, and there is a good body of evidence showing that the qualifications of the whole staff team are also important for quality.⁸² In this section we supplement our own analysis with national data provided by Ofsted. Ofsted has recently begun to gather data on staff qualifications during inspection visits, which provides an excellent basis for exploring relationships between qualifications and inspection grades. Crucially, since data is collected on the qualifications of all staff, it allows us to consider the effects of having a well qualified staff team as a whole, as well as the effects of graduate leadership (in this case, the presence of an EYP). This provides an effective means of confirming our own analyses using national data, and also allows us to consider the ways in which qualifications at different levels interact to ensure high quality.

Figure 4.8 compares settings with different qualification profiles in terms of their Ofsted inspection outcomes. The most highly qualified group (on the left) has a graduate EYP on the staff team, and at least 75 per cent of all staff qualified to Level 3 (A-level standard). The least qualified group (on the right) has no EYP and less than 75 per cent of staff at Level 3. There is a striking quality gradient, with better-qualified settings achieving higher inspection grades,

Figure 4.8 Percentage of settings with different qualification profiles graded as good or outstanding by Ofsted, in the least and most deprived areas of England



Based on the 7,305 non-domestic childcare providers about which Ofsted holds staff qualifications data (1 September 2012 to 31 October 2013). Data on the proportion of staff at Level 3 relates to staff that have contact with children (head-count rather than pro-rata) and includes all such staff with a relevant childcare qualification at Level 3 or higher. The top and bottom two deprivation quintile bands have been combined due to relatively small numbers in individual bands.

and similar patterns seen among settings in the least and the most deprived areas. Whilst having a graduate EYP and an overall well-qualified staff are individually associated with better quality, the highest grades are seen among settings with both of these features.

Focusing now on differences between settings located in the least and most deprived areas, what can we learn about the role different qualifications might play in narrowing the 'quality gap'? Among non-graduate settings (to the right) there is an obvious quality gap, with settings in deprived areas achieving lower inspection grades. However, among graduate settings (to the left) the quality gap is eliminated altogether. This suggests that, while having an overall well-qualified staff team and a graduate EYP are both associated with higher inspection grades, having a graduate is more important for narrowing the quality gap between settings located in the least and the most disadvantaged areas.

5 Summary and implications: addressing the quality gap

The starting point for our analysis was strong research evidence showing that children from disadvantaged backgrounds have the most to gain from good quality early years provision. Successive governments have invested heavily in improving access and quality for the poorest children, with the aim of helping them overcome their early disadvantage and catch up with their more advantaged peers. In this study we consider whether this investment has worked: is high quality provision available for the children who need it most?

Our findings suggest that government-maintained schools are doing a good job in meeting the needs of the most vulnerable children. Children from deprived backgrounds tend to be clustered in the maintained sector, with schools providing early education for larger proportions of disadvantaged children than PVI settings. Our findings suggest that these children receive comparable (and in some cases even higher) quality than their peers across all dimensions of practice measured using the ECERS-R and -E. This is somewhat at odds with trends in Ofsted grades at national level which show that, while nursery schools offer comparable provision in all areas, primary schools located in disadvantaged areas tend to receive lower grades than those located in more advantaged areas. The explanation may lie in our measures. Since there is no separate early years grade, Ofsted grades for primary schools reflect quality for all ages of children; while the Environment Rating Scales reflect the quality of early years provision. It seems that, despite an overall tendency for primary schools located in deprived areas to be of lower quality, both primary and nursery schools are effective in maintaining standards of *early years* provision for disadvantaged three- and four-year-olds.

However, the maintained sector cannot provide for all disadvantaged children; and recent data suggest that just under 30 per cent of three- and four-year-olds living in the most deprived areas and receiving funded early education, do so within the PVI sector.⁸³ Our findings suggest that these children are losing out. Within our sample, quality was lower in PVI settings located in deprived areas, with more disadvantaged user-bases, and attended by individual children living in disadvantaged areas; and it was lower largely in the dimensions of quality which we know to be most important for children's development – the quality of interactions, and support for children's language and learning.

Most worrying is the fact that the quality gap between PVI settings serving the least and the most disadvantaged was largest in relation to the quality of support for communication, language and literacy. A clear gradient was evident, with quality decreasing as deprivation increases. This may reflect the challenges inherent in providing for children who are more at risk of language delays or behavioural problems, or who speak English as a second language. However, it does not change the nature of the problem: that the PVI sector is not effectively rising to this challenge and offering comparable quality for disadvantaged children. Given that we know the outcomes gap between children from low-income families and their better-off peers is not reducing; and that it is particularly evident in relation to language and communication skills,⁸⁴ these findings are of serious concern.

What can be done? Our findings suggest that investment is needed to further raise the quality of the early years workforce in the PVI sector. Settings with well-qualified staff scored more highly on all three of our quality measures. Supplementary analysis from Ofsted showed that settings with an overall well-qualified staff team (at least 75 per cent at Level 3) and a graduate Early Years Professional tended to achieve better inspection grades, with the most highly graded settings having both these features. Thus, better qualifications are associated with better quality for *all* children.

But in terms of narrowing the quality gap between PVI settings serving the least and most disadvantaged, our findings suggest that employing a graduate makes the most difference. Among non-graduate settings, we identified a clear and statistically significant drop in quality as we moved from the least to the most deprived areas, across all three quality measures. The trend was clearest in relation to the

83 Gambaro, Stewart & Waldfogel (2013)

84 Ofsted (2014)

quality of support for children's language and reasoning skills, with a 10 per cent 'quality gap' between settings located in the least and the most disadvantaged areas. This suggests that non-graduate settings are not well equipped to maintain quality standards when faced with the challenge of catering for children at greater risk of language and behavioural problems. However, among PVI graduate settings, the quality gradient was much less steep, and in some cases eliminated altogether. The findings suggest that having a graduate on the staff team may help settings to maintain overall quality standards; to support communication and language; to meet children's individual learning needs; and to provide for children and families from different backgrounds, even in areas where there is great diversity. Given that all government-maintained provision is graduate led, this is likely to play a significant part in the ability of schools to maintain quality standards when catering for disadvantaged children.

The Government is already doing much to address graduate leadership in the PVI sector, and has recently extended the 'pupil premium' to the early years, so that settings and schools will receive additional funding for each disadvantaged three- and four-year-old on their roll. The recently published *Ofsted Early Years Annual Report (2014)* also highlights the key role of graduate staff in tackling disadvantage. Our research strongly supports this focus, and indicates that investment in graduates working in poor areas may be an effective means of narrowing the quality gap among settings serving the least and the most advantaged.

Our findings also have implications with regard to social mix. The strongest associations between quality and disadvantage in the PVI sector were identified for the deprivation measure based on the users of each setting; suggesting that it is most difficult to achieve good quality provision when catering for high proportions of disadvantaged children. Together with evidence that a mixed environment is beneficial for poorer children's outcomes⁸⁵, these findings support efforts to promote a good social mix within both the PVI and school sectors. Alongside this, continued efforts are needed to encourage take-up of early education, since research shows that children not accessing the entitlement are most likely to be from disadvantaged backgrounds.⁸⁶ Such children are therefore doubly disadvantaged: they are less likely to take up early education, and less likely to experience high quality when they do.

Finally, our research points to the need to consider the ways

in which we measure disadvantage. The IMD, although not specifically focused on children, captures broader measures of local disadvantage than the more commonly used Income Deprivation Affecting Children Index (IDACI); and in our analysis the associations between quality and deprivation were stronger for the IMD than for the IDACI. We also used different measures of deprivation, based on the location of settings and schools, but also on the areas in which children actually attending them lived. While our findings suggest that measures based on setting location are reasonable proxies for more nuanced data, they also highlight the value of using measures based on the children and families actually *using* settings and schools, where this is possible. Further work is required to identify measures of deprivation which are robust but also reasonably straightforward to access or create. Lastly, it is vital that adequate data be available to continue research in this field. Our analysis has been strengthened by the inclusion of data from Ofsted on the qualifications of early years staff. We support Ofsted's focus on collecting information about the characteristics of settings during inspection visits, and suggest that this could usefully be extended to include data on other factors known to relate to quality (e.g. staff turnover).

To conclude, our study has highlighted the challenges involved in ensuring good quality provision for the children who have the most to gain from it. While outcomes for disadvantaged children – indeed for all children – have shown improvement in recent years, the gap in outcomes between disadvantaged and advantaged children has not closed substantially during this period. Much has been done, but more is needed to ensure that disadvantaged children have the same chances as their more advantaged peers. We set out a number of recommendations below, based on our analysis of the relationships between quality and deprivation for three and four year old children. Alongside this, further research is needed to explore these same relationships for children under the age of three, to ensure the success of the current early education programme for disadvantaged two-year-old children, much of which will be delivered by the PVI sector. Follow-up research is also needed to confirm our findings for the maintained sector using a larger and representative sample of schools, and to explore in greater detail *how* providers offering good quality for disadvantaged children are able to achieve this, in order that good practice may be shared.

85 Sylva et al. (2010)

86 Speight & Smith (2010)

Recommendations

1. Further support to ensure that settings in the PVI sector are equipped to meet the needs of disadvantaged children. This should include:
 - a) Strategies to encourage graduate leadership among PVI settings serving the most disadvantaged children. The recently announced pupil premium will support this aim, and Government should consider the use of levers to encourage settings to spend these additional funds on employing graduate-level staff and on paying them an appropriate salary.
 - b) Appropriate training in meeting the needs of children and families from diverse backgrounds, particularly in key areas such as language and communication.
2. A requirement that all early years staff be qualified to Level 3 (A-level standard), introduced on a phased basis if necessary.
3. Continued support for schools providing early education for disadvantaged children, including making the most of high quality nursery schools to support practice in other schools and settings (e.g. as part of the 'teaching schools' initiative).
4. Consideration of strategies to ensure a good social mix within both the PVI and maintained sectors.
5. Within both national surveys and research, the use of deprivation measures which capture multiple aspects of disadvantage (such as the IMD) and which capture the characteristics of setting users and/or individual children as well as the location of early years settings.
6. Continued work by Ofsted to collect data on setting characteristics and known quality predictors during inspections, including consideration of which additional measures could be gathered (e.g. data on staff turnover).
7. Re-introduction of the Early Years Foundation Stage grade in schools inspections to capture the quality of early years provision. A consultation proposing this change has recently been published by Ofsted and we would strongly support its acceptance.

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Appendix A: Additional technical information

A.1 Additional information on sample characteristics

TABLE A.1: TYPE OF PROVIDER (PVI SAMPLE) IN COMPARISON TO NATIONAL DATA

	Full sample	ECERS-R sample	ECERS-E sample	National data 2009 ⁸⁷
Full day care, %	64	63	66	62
Full day care in Children's Centres, %	2	1	1	4
Sessional, %	34	36	33	34
Other, %	<1	<1	<1	–
Total, %	100	100	100	100
n	1,035	990	594	22,900

Note on comparisons: Since ECERS observation data on our PVI sample was drawn from the period 2007–2011, we have used 2009 data from the Childcare and Early Years Providers Survey for comparison (Table 3.1, Brind et al., 2012). Since our dataset included only centre-based early education providers, data from the 2009 survey on after school clubs, holiday clubs and childminders were excluded.

TABLE A.2: TYPE OF PROVIDER (MAINTAINED SAMPLE) IN COMPARISON TO NATIONAL DATA

	Full sample	ECERS-R sample	ECERS-E sample	National data 2011 ⁸⁸
Nursery school, %	9	9	14	3
Primary school, %	91	91	86	98 (43 with nursery, 55 with reception only)
Total, %	100	100	100	101*
n	169	169	99	15,700

Note on comparisons: Since ECERS observation data on our maintained sample was drawn from the period 2009–2013, we have used 2011 data from the Childcare and Early Years Providers Survey for comparison (Table 3.1, Brind et al., 2012).

Data on our sample (from the Department for Education School Census) categorised infant and primary schools separately, whereas infant schools are not identified for the Early Years and Childcare Provider Survey. For the purposes of this comparison, we have included infant schools within our sample (including those with a nursery class) in the primary school category.

The Childcare and Early Years Providers Survey distinguishes between primary schools with a nursery class and those without (i.e. with a reception class only). These data were not available for our sample of maintained schools.

* Percentages rounded so may not add up to 100%

⁸⁷ Brind et al. (2012)

⁸⁸ Brind et al. (2012)

TABLE A.3: PERCENTAGE OF SETTINGS/SCHOOLS IN THE MOST DEPRIVED 30 % OF AREAS (IMD), BY PROVIDER TYPE

	PVI sample		National data 2009 ⁸⁹	Maintained sample		National data 2011 ⁹⁰
	ECERS-R sample	ECERS-E sample		ECERS-R sample	ECERS-E sample	
Full day care, %	17	15	26			
Sessional, %	9	5	15			
Nursery school, %				81	93	59
Primary school, %				36	58	44 (with nursery) 13 (reception only)
n	1,023	618		169	99	

Note on comparisons: See notes for Tables A.1 and A.2. Comparison data taken from Table 3.3 in Brind et al. (2012).

PVI sample: Percentages for 'Children's Centre' and 'other' providers for our sample have not been reported due to small numbers.

Maintained sample: When comparing percentages for primary schools to national data, the figures for primary schools with a nursery class (44%) represent the closest match for our data, since most ECERS observations were conducted in nursery classes (section 3.2).

TABLE A.4: PERCENTAGE OF PVI SETTINGS WITH A QUALIFIED TEACHER (QTS) OR EYP

	Full sample	ECERS-R sample	ECERS-E sample	National data 2009 ⁹¹
EYP, %	17	12	10	–
QTS, %	23	25	24	–
QTS or EYP, %	33	31	29	35
n	1,062/1,061	1,011/925	614/529	20,371

Note on comparisons: Since ECERS observation data on our PVI sample was drawn from the period 2007–2011, we have used 2009 data from the Department for Education for comparison.

Note on data: The percentage of settings with an EYP or QTS is smaller than the combined percentage for settings with either a QTS or EYP because in some cases the same member of staff will hold both statuses. Data on EYPS were collected from 2009 onwards.

TABLE A.5: PERCENTAGE OF PROVIDERS ACHIEVING EACH OFSTED OVERALL EFFECTIVENESS GRADE, COMPARED WITH NATIONAL OFSTED DATA⁹²

	PVI sample	Ofsted 2009 (non-domestic childcare)	Maintained sample	Ofsted 2011 (primary schools)	Ofsted 2011 (nursery schools)
Outstanding, %	17	10	18	17	56
Good, %	61	57	40	52	40
Satisfactory, %	20	29	33	29	4
Inadequate, %	3	4	10	2	0
n	1079	–	166	–	–

Since ECERS observation data on our PVI sample was drawn from the period 2007–2011, and on our maintained sample from the period 2009–2013, we have reported comparative national Ofsted data for 2009 and 2011 respectively.

Note on PVI comparisons: Ofsted non-domestic childcare providers include after-school clubs but not independent providers. Our sample does not include any after-school clubs but does include a very small proportion (1%) of independent providers.

Note on maintained comparisons: Since the majority (91 per cent) of the maintained sample were primary schools and only 9 per cent were nursery schools, Ofsted data for primary schools represents the most useful comparison.

⁸⁹ Brind et al. (2012)

⁹⁰ Brind et al. (2012)

⁹¹ Department for Education (2013)

⁹² Ofsted Dataview, data for non-domestic childcare providers as at 31/08/09 and for nursery schools and primary schools as at 31/08/11 (dataview.ofsted.gov.uk)

A.2 Additional information on quality measures

TABLE A.6: MEAN ECERS QUALITY RATINGS FOR THE MAINTAINED AND PVI SAMPLES

	Maintained sample		PVI sample	
	n	Mean (SD)	n	Mean (SD)
ECERS-R	169	4.1 (0.7)	1023	4.2 (0.9)
ECERS-E	99	3.6 (0.7)	618	3.4 (0.7)

TABLE A.7: CORRELATIONS BETWEEN QUALITY MEASURES

	PVI sample	
	ECERS-R	ECERS-E
ECERS-E	0.70** (618)	
Ofsted overall effectiveness grade	0.29** (1,023)	0.29** (618)
	Maintained sample	
	ECERS-R	ECERS-E
ECERS-E	0.56** (99)	
Ofsted overall effectiveness grade	0.19* (121)	0.06 (67)

Sample sizes shown in brackets

* = significant at the 5 per cent level

** = significant at the 10 per cent level

*** = significant at the 1 per cent level

A.3 Multiple regression: combined associations between quality and PVI provider characteristics

Only characteristics for which statistically significant results (or those approaching significance) were identified are shown:

= $p < 0.10$

* = $p < 0.05$

** = $p < 0.01$

*** = $p < 0.001$

ns = non-significant

TABLE A.8: OVERALL OFSTED GRADES (REVERSED)

	B	Std error	Standardised Beta	Sig
Constant	2.86	0.03		***
Staff qualifications: early years staff (comparison: none)				
Either QTS or EYP in setting	0.15	0.05	0.10	**
Both QTS and EYP in setting	0.21	0.09	0.07	*
Rural location (comparison: urban)	0.09	0.05	0.05	#
R 0.127 Adjusted r squared 0.013 F 5.782**				

TABLE A.9: ECERS-R OVERALL SCORES

	B	Std error	Standardised Beta	Sig
Constant	4.18	0.03		***
Children's centre (comparison: non-CC)	0.46	0.20	0.07	*
Staff qualifications: early years staff (comparison: none)				
At least one QTS or EYP in setting	0.12	0.05	0.07	*
Missing qualification data	0.18	0.08	0.07	*
R 0.120 Adjusted r squared 0.011 F 4.858*				

TABLE A.10: ECERS-E OVERALL SCORES

	B	Std error	Standardised Beta	Sig
Constant	3.13	0.04		***
Staff qualifications: early years staff (comparison: none)				
At least one QTS or EYP in setting	0.16	0.06	0.10	*
Missing qualification data	0.06	0.08	0.03	ns
Type (comparison: private day nursery)				
Playgroup or preschool	0.35	0.06	0.26	***
Other	-0.35	0.26	-0.06	ns
Missing provider type data	0.44	0.16	0.14	**
R 0.286	Adjusted r squared 0.074	F 10.795***		

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