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Journal of European Social Policy

Provided in Cooperation with:
German Institute for Economic Research (DIW Berlin)

Suggested Citation: Gambaro, Ludovica (2017) : Who is minding the kids? New developments and lost opportunities in reforming the British early education workforce, Journal of European Social Policy, ISSN 0958-9287, Sage, Thousand Oaks, Vol. 27, Iss. 4, pp. 320-331, https://doi.org/10.1177/0958928717719196

Journal Of European Social Policy

Article

Journal of European Social Policy
2017, Vol. 27(4) 320–331

DOI: 10.1177/0958928717719196
journals.sagepub.com/home/esp
SAGE

Who is minding the kids? New developments and lost opportunities in reforming the British early education workforce

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Abstract

The last 20 years have seen a substantial increase in enrolment in early childhood education and care (ECEC) in several European countries. The expansion of ECEC services inevitably requires new staff. There is however a tension between a rapid growth of services via the creation of low-paid, low-qualified jobs and the aspiration, voiced unanimously by policy makers, to improve the qualification and status of ECEC workers. This paper examines the case of the UK, where ECEC services and public expenditure devoted to them have increased substantially. It uses UK Labour Force Survey data to document changes in the pay and educational qualifications of the early education workforce. Results show how despite a general increase in the qualification level of these workers, their pay remains relatively low. Moreover, pay is found to be mostly related to characteristics of the workplace, and its access to public funding, rather than to the productive characteristics of workers. The paper concludes by arguing that the issue of low pay in ECEC is likely to become more salient in the future, as governments expand services while trying to keep down their costs.

Keywords

Early childhood education and care, ECEC quality, employment conditions, low pay, vocational qualifications

Introduction

In recent decades, the provision of early childhood education and care (ECEC) has risen up the policy agenda in many European countries (European Commission, 2009). ECEC services are seen as serving a number of policy objectives and as a cornerstone for the social investment state agenda (Esping-Andersen, 2002; Lewis, 2009). These services lie at the interface between family and education policies. Childcare provision makes it possible for parents – or more particularly mothers – to work in the paid labour market and it is thus instrumental to the policy goal of

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increasing employment and reducing child poverty. At the same time, as children themselves can gain from high quality ECEC, these services can help reduce inequalities in the long term. However, *delivering* on this potential is problematic. Most significantly, ECEC services need to be of high enough quality to change children's developmental trajectories meaningfully. When early education places are simply available and affordable, they do little to level the playing field among children from different backgrounds (Blanden et al., 2016).

In the context of scarce resources, the policy goal of making ECEC universally available is often prioritised over ensuring quality (Kamerman and Kahn, 2000; Stewart et al., 2014; West, 2006). The tension between affordability and availability on the one hand and high quality on the other is most recognisable when looking at the workforce staffing these services. Although high quality provision requires more than 'high quality staff', several studies demonstrate that quality suffers where workers are precarious, poorly paid and not adequately trained (for a review, see Organisation for Economic Cooperation and Development (OECD), 2012). Yet service expansion is often achieved precisely through low paid, low qualified workers. In fact, Morgan (2005) argues that a low-wage labour force is functional to the very creation of childcare services.

This paper explores these trade-offs focusing on ECEC workers. The issue of personnel is often overlooked by policy makers and analysts alike, with attention mainly on the *users* of services rather than the *providers*. But providers are crucial, as they shape the content of the service (Leira and Saraceno, 2002). The analysis here concentrates on workers' pay and qualifications. While these are not direct measures of quality, they can reveal whether structural conditions associated with high quality are in place.

The empirical evidence refers to the UK between 1997 and 2008, a time characterised by substantial government's investment in ECEC with the deliberate aim of improving the quality of services while increasing the number of affordable places. The paper asks whether these policy developments were accompanied by improvements in ECEC workers' pay and educational qualifications. The case of the UK is relevant to other countries. The challenge of achieving availability, affordability and quality, while very evident in the UK, is common to many other countries (Stewart et al., 2014). In addition, the British system of ECEC services is fragmented with different types of organisations catering for children under five. Organisations can belong to the private sector – whether for- or not-for-profit – or to the state sector – mainly school based. This allows for easy testing of whether different institutional features have any bearing on the characteristics of the ECEC workforce. It also makes the UK easily comparable, as one segment of the system of provision is very similar to services in one country while another segment is similar to those of another. For example, school-based provision closely resembles pre-school education in France or Italy, while for-profit nurseries are analogous to commercial services in Australia or the Netherlands.

Background

Why ECEC staff matter

There are three main reasons why examining ECEC service through the lens of workers can be insightful. First, research indicates that higher levels of workers' education are associated with higher quality in the classroom and, in turn, with children's later school success (Burchinal et al., 2002; Sylva, 2010). Workers with relevant bachelor degrees are found to be better able than other workers to offer developmentally appropriate activities and to interact with children in a sensitive and responsive way (Mathers et al., 2011). But the relationship between ECEC workers' qualifications and quality of the service is complex, and other studies have found that different factors could attenuate the link. If preparation programmes are mediocre, it is more difficult to detect any positive association (Early et al., 2007). Likewise, large group sizes and scarce resources may make it difficult for trained workers to implement what they have learned (Sandstrom, 2012). Another factor could be pay. Low wages in the ECEC sector may result in high turnover among the best workers, who seek better paid jobs elsewhere. Only few studies investigate the direct link between pay and quality, reporting a positive

association (Torquati et al., 2007; Whitebook and Sakai, 2003). In sum, specialised knowledge and decent working conditions can be considered factors that contribute to high ECEC quality.

Second, a focus on ECEC staff reveals to what extent governments can pursue service expansion. Morgan (2005) argues that the regulated market structure typical of coordinated economies results in high skill levels and wages in human services such as ECEC. However, the higher cost of labour acts as a brake to increasing the volume of ECEC provision. Morgan shows how the creation of new places in France and Sweden is very expensive for the government, as cost-cutting strategies, such as relaxing regulation, are unviable. By contrast, in liberal market economies, such as the US, a large childcare industry is sustained by the extremely low wages paid to childcare workers (Folbre, 2009). In Morgan's (2005) view, in such context governments are 'off the hook from having to subsidise' these services (p. 244), as the modest level of public funding in the US testifies.

The third reason for examining ECEC services by looking at staff expands on Morgan's argument. Social policies, and education policies among them, are not only constrained by the existing labour market structure, but also contribute to create new employment. This is most obvious when services are provided directly by the state, as in the case of personnel in state schools. But public funding and regulation about care and education services can affect the nature of the jobs created even when employers are private providers. By highlighting the direct labour market impact on childcare and early education policies, this perspective reveals an additional way in which education policies and labour market institutions are interconnected (Di Stasio and Solga, 2017).

ECEC services in the UK

The UK is an especially interesting case because of the policy developments that have taken place since 1997 and the way ECEC services are organised. Labour government developed a childcare and early education strategy with the explicit aim of making ECEC services available, affordable and of high quality (Department for Education and Employment (DfEE) and Department of Social Security (DSS), 1998). Spending increased threefold between 1997 and 2007, faster than spending in any other policy area (Stewart, 2013) and with strong support from the public (see also Busemeyer and Garritzmann, 2017).

A variety of services provide ECEC in the UK. Settings can belong to the public sector, where they are, in the main, school-based, or to the private or voluntary sectors. Sectors vary in terms of workers' qualifications and quality. School-based provision is staffed with teachers and nursery nurses, while outside schools the presence of graduate workers is scant, at around 4 percent of the workforce (Brind et al., 2011; Gambaro, 2012). Crucially, observational studies of quality have found that schools offer the highest quality of provision (Mathers et al., 2007; Sylva, 2010).

Education becomes compulsory in the term after a child turns five.[1] In practice, however, in England and Wales it is the norm for children to begin school the September after they turn four, in 'reception' classes. Once in reception class, children attend for a full school day and are catered for by teachers. Since 2004, three-year-olds have been entitled to free early education. Nursery education had historically been offered by schools in deprived urban areas in 'nursery classes' attached to primary schools, with each class staffed with a teacher and a nursery nurse. The introduction of the entitlement to free early education did not expand this type of provision. Instead of investing in direct state provision, it was decided to incentivise private and voluntary organisations to offer the free entitlement, in the interests of greater parental choice (Lewis, 2003; Stewart, 2013). This decision had clear cost implications, as in the public sector collective employment contracts resulted in more favourable pay and working conditions, not only for teachers but also for nursery nurses (Cameron et al., 2002). The entitlement to free early education is funded by the government, but funding is per child per hour, with no required supplement to encourage providers to increase quality or hire more qualified staff. Payments however tend to be higher in the public sector than elsewhere. Furthermore, nursery classes can benefit from additional school funds.

For children younger than three, there is very little publicly provided provision. Thus, ECEC for the under-threes is largely delivered either in private settings or by childminders. Parents have to pay and fees are not related to income (Brind et al., 2011), but, by 2008,two forms of state subsidy were in place.[2] Parents could opt to be part-paid in 'childcare vouchers', reducing income tax liability. Alternatively, parents with low earnings could qualify to claim back a portion of their ECEC costs (up to 70 percent of costs). Under both schemes, reimbursement did not vary depending on the choice of ECEC provider and no additional payment for higher quality providers was made.

From the outset, the Labour government acknowledged that 'childcare is a low status, low pay occupation' and that this would 'make it difficult to recruit people of the right calibre' (DfEE and DSS, 1998: 13). One of the problems was the lack of a well-recognised training system relevant to ECEC. A sector characterised by small workplaces and generally low pay did not have the capacity to establish a comprehensive educational infrastructure.[3] Labour filled this gap by promoting National Vocational Qualifications (NVQs) in ECEC. NVQs are a specific type of vocational qualification, with an assessment regime based on the evaluation of performance at work. At the time, NVQs were less expensive to provide than other vocational qualifications.[4] Candidates needed to register with a certified training provider, who would be in charge of arranging for an assessor to evaluate the candidate's performance on the job. But training providers received state funding on the basis of the number of qualifications awarded. With competence-based qualifications such as the NVQs a candidate can only pass or fail, so the pressure to grant a pass was enormous (Wolf, 2011: 87). This made NVQs easier to obtain relative to other vocational qualifications and cheaper to offer for training providers.

Given Labour's spending record, its explicit commitment to ECEC quality, and its awareness about the low status of ECEC work we would expect improvements in the pay and qualifications of ECEC workers. However, in light of Morgan's (2005) argument, Labour's choice to privilege private sector provision and the actual design of its ECEC funding schemes raise doubts on such expectation. On this basis, I put forward three hypotheses: i) ECEC workers were poorly paid in 1997 and they remained so; ii) educational qualifications among ECEC workers were low in 1997 and remained so. The third hypothesis relates to the distinction, very important in the UK context, between public providers and private and voluntary ones: iii) ECEC workers sector of employment will be a stronger predictor of pay than workers' individual attributes. Results confirming these hypotheses would underline the challenge of achieving all three goals of available, affordable and high quality ECEC, even in a context of high public spending and explicit commitment to quality.

Data and variables

I use data from the UK Labour Force Survey (LFS) (Office for National Statistics (ONS), 2009), a large household survey and the most comprehensive source of information on UK workers. The analysis focuses on workers' pay and their qualifications. It covers the years from 1997 to 2008, for two reasons. First, I am interested in analysing what happens to the childcare workforce when governments increase spending on this policy area. In the British case this coincides with Labour governments (1997–2010), but I exclude the years after the financial crisis because the relationship between pay and qualification is likely to be obscured by the ensuing economic recession.

The second reason is data availability. The LFS is carried out every three months and has a rotating panel structure: each household is interviewed for five consecutive quarters and then dropped. This way, in each quarter, one fifth of the sample is interviewed for the first time, one fifth for the second time and so on. Since 1997 information on pay has been asked on both the first and fifth wave, while it was asked at the fifth interview only in the preceding years. As I need to pool quarterly data in order to have a sufficient number of observations, I use data from 1997 and include only respondents from the first wave, which is the largest and not affected by attrition.

ECEC workers are identified on the basis of the Standard Occupational Classification (SOC) used in

the LFS to classify jobs. The SOC does not have a single occupational category for all those working in ECEC services, but allows the identification of: 'Nursery nurses', 'Childminding and related occupations' and 'Playgroup leaders/assistants'.[5] I exclude childminders for whom there is no salary information as they are self-employed. Thus the analysis refers to two groups of workers – 'Nursery nurses' and 'Playgroup leaders/assistants' – employed either in schools or in private and voluntary centres.

Managers and teachers stand out as missing. Nursery managers are classified together with all other managers in service industries which are not uniquely identified. Even when combining the SOC with industry classification, they remain indistinguishable from managers of other welfare activities such as daycare activities for the elderly or counselling services. Nursery teachers are classified together with primary teachers, reflecting the fact that teachers often move between the preschool and primary school years. Because managers and teachers tend to be the most qualified, experienced, and plausibly best paid workers within ECEC services, their exclusion leads to an underestimation of the pay and qualification levels in the sector. Yet it is useful to remember that managers do not work directly with children, and that school-based early education, where teachers are employed, cater for children aged three and above. The analysis presented here therefore applies to ECEC services for children under three, and, to a lesser extent, to three-year-olds and rising four-year-olds.

The main variable of interest is nominal *hourly pay*. This is calculated by dividing weekly gross earnings by the number of usual hours worked (Manning and Dickens, 2002). It is standard practice to drop observations with hourly pay above £100 or below £1. Note that wages are not deflated, as the interest lies precisely in the nominal pay received and not in the real disposable income that wages contribute to. In the regression analyses the dependent variable is the natural logarithm of hourly wages. An indicator of whether pay was reported by a proxy respondent is also included, as their answers are systematically lower.

The second focal variable is *educational qualifications*. The LFS collects detailed information on the highest qualification held. This information is also collapsed into a standard summary variable based on the official equivalence framework across qualifications. I use this six-fold summary variable: 1. 'Degree or equivalent'; 2. 'Some higher education'; 3. 'A Level or equivalent'; 4. 'GCSE grade A–C or equivalent'; 5. 'Other qualification'; 6. 'No qualification'. A Level (Advanced Level) is an upper secondary school leaving certificate which leads to university admission, while GCSE (General Certificate of Secondary Education) is a lower secondary education leaving certificate, which coincides with the end of compulsory schooling.

This summary variable can be misleading, as it groups under the same heading qualifications with very different curricula, requirements and currency on the labour market. Drawing on the more detailed information contained in the LFS, I single out one specific vocational qualification – the National Vocational Framework Level 3 (NVQ3) – from the category 'A Level or equivalent'.

I also include other workers' characteristics. *Job tenure* captures experience in the job.[6] This is coded as a six-fold variable, ranging from 1 = 'Less than a year' to 6 = '20 years or more'. I include *age* as a proxy for potential experience and because ECEC providers were found to prefer more mature workers (Cameron et al., 2001). I also include *gender*, although 99.8 percent of the ECEC workers in the sample are women, in line with national statistics. Results are almost identical when men are excluded.

A dichotomous variable distinguishes between *public* and *private sector*, with the latter including companies as well as charitable organisations or trusts. An indicator on *managerial and supervisory responsibility* distinguishes between more and less demanding jobs.[7]

Throughout the analysis I net out geographical effects with 21 regional dummies of the workplace location. Table A1 in the online appendix presents summary statistics of all variables used for two groups: all employees and childcare workers as defined in the analysis.

I restrict the sample to observations with complete wage information. The earnings weights available in the LFS are used in the descriptive analyses to account for differential response rates among

Table 1. Wages among ECEC workers and other selected occupations wages in comparison with overall median wage, 2005–08.

Occupation Title	Occupation code	As percentage of median worker's wage	N
ECEC worker	*	66.4	811
Cleaners and domestic workers	9233	63.6	2288
Packers, bottlers and fillers	9134	65.2	541
Shelf fillers	9251	65.4	565
Nursing auxiliary and assistants	6111	87.1	1017
Youth and community workers	3231	111.1	454
Primary and nursery school teachers	2315	140.7	1760

Notes: Occupational codes refer to SOC2000; * indicates that this group is drawn from more than one occupation, as explained in the text. Figures in third column are the percentage of the median wage in each occupation relative to the overall median wage, between 2005 and 2008. Figures are weighted.
LFS data, 1997–2004, first wave respondents only.

population subgroups, but results do not substantially change when weights are not used. I also exclude observations with missing information on other items. The level of non-response is very low (below 5 percent) and unlikely to affect the results. The resulting sample consists of 337,370 observations, of which 2,432 are ECEC workers. The analysis proceeds in three stages, corresponding to the hypotheses presented earlier and focusing on wages, qualification and the relationship between the two respectively. I explain the analytical strategy of each stage as I present the results.

Results

Trends in ECEC workers' pay: stylised facts

I start by comparing the median wage of ECEC workers with that of a few other occupations. These comparisons cannot be highly accurate but they illustrate where ECEC workers would be if occupations were ranked by pay. I use median wages, which are not affected by outliers, and calculate them for the years 2005–08; by then workers should have benefited from the public investments made in the preceding years. As Table 1 shows, the median ECEC worker earned 66 percent of the median UK worker, which coincides with the standard definition of low pay as an hourly wage below two-thirds of the wage of the median employee (Lloyd et al., 2008). ECEC workers were very similar to 'Cleaners and domestic workers', 'Packers, bottlers and fillers' and 'Shelf fillers'. By contrast, the median wages of 'Nursing auxiliary and assistants' and 'Youth and community workers' were, respectively, 87 and 111 percent of the median wage. 'Primary and nursery school teachers' were further up, as they earned 141 percent of the median UK worker. These comparisons are reminiscent of some striking examples from the comparable worth literature: jobs in childcare are rated lower than those of parking attendants (Acker, 1989). They also start to give support to the notion that childcare workers are poorly paid.

To investigate childcare workers' wages in a more systematic way, I compare the pay of ECEC workers to that of the average UK employee between1997 and 2008. I estimate an ordinary least squared (OLS) model with the log of hourly wage as dependent variable. The following independent variables are included: a binary 'ECEC worker' indicator; year dummies to account for the time trend; a set of interaction variables between years and the 'ECEC workers' showing whether ECEC workers' pay gap relative to other employees changed over time. The first column of Table 2 presents the results. The 'ECEC worker' coefficient indicates an average wage gap of 40 percent and the fact that none of the interaction terms is significant suggests this gap remained stable over time. The other coefficients are not shown: all the years' dummies are positive and

highly significant, as we would expect given that these are nominal wages.

As ECEC workers are almost exclusively women, I estimate a second model including an indicator for gender. Now the wage gap between ECEC workers and all other employees drops to 29 percent, as the fact that women earn around 22 percent less than men is accounted for. These results support Hypothesis 1: ECEC workers' pay was low in 1997 and remained so.

Changes in the educational qualifications of ECEC workers

Given the lack of change in pay among ECEC workers, it may be expected that qualifications too remained unchanged. Figure 1 reports the highest qualification held over three four-year periods. There is a marked increase of 'A-level or equivalent' qualifications, from 20 percent to 38 percent, with a corresponding decrease in all other qualifications below 'A-level or equivalent'. On the face of it, the education profile of ECEC workers has improved, with change especially concentrated around the attainment of qualifications at level 3, considered equivalent to A-levels.

I examine more closely this latter group of qualifications to understand which qualification in particular is driving this change. I single out NVQ3 from the group 'A-level or equivalent' because NVQ qualifications

Table 2. Wage differences between ECEC workers and other employees over time (1997–2008).

	Base model	*+ Gender*
	b (se)	*b (se)*
ECEC worker	–0.40*** (0.04)	–0.29*** (0.04)
Female		–0.24*** (0.00)
1998 x ECEC worker	–0.02 (0.05)	–0.01 (0.05)
1999 x ECEC worker	0.04 (0.05)	0.04 (0.05)
2000 x ECEC worker	–0.01 (0.05)	–0.01 (0.05)
2001 x ECEC worker	0.02 (0.06)	0.02 (0.06)
2002 x ECEC worker	0.02 (0.05)	0.03 (0.05)
2003 x ECEC worker	–0.02 (0.05)	–0.01 (0.05)
2004 x ECEC worker	–0.03 (0.06)	–0.02 (0.06)
2005 x ECEC worker	–0.04 (0.06)	–0.04 (0.06)
2006 x ECEC worker	–0.07 (0.05)	–0.07 (0.05)
2007 x ECEC worker	–0.02 (0.06)	–0.01 (0.05)
2008 x ECEC worker	–0.04 (0.05)	–0.03 (0.05)
Constant	1.83*** (0.00)	1.96*** (0.00)
N	337370	337370

Notes: OLS regression on ln(hourly wage). Additional controls included are: years, proxy respondent. Significance levels: * $p<0.05$, ** $p<0.01$, *** $p<0.001$.
Sample: Employees of working age. LFS data, 1997–2004, first wave respondents only.

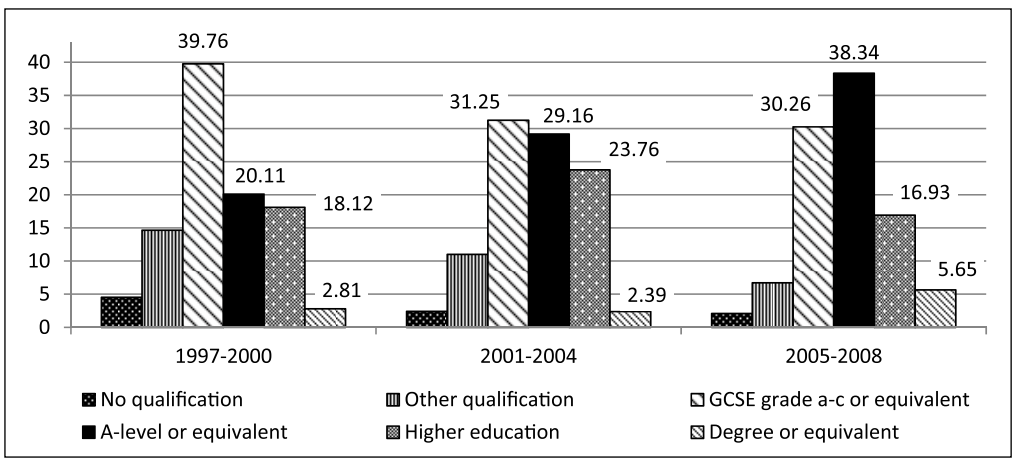

Figure 1. Change in educational qualifications among ECEC workers.
Notes: Sample: ECEC workers. Figures are weighted.
LFS data, 1997–2004, first wave respondents only.

were explicitly promoted by Labour. While in 1997–2001 only 4 percent of ECEC workers held this qualification as their highest one, 24 percent did so by 2005–08. By contrast, all other qualifications equivalent to A-level remained stable.

The defining feature of NVQs is that they do not need to be taught in colleges, but can be on-the-job training (West and Steedman, 2003). Candidates are assessed on the basis of their performance at work, without any additional examination as in other vocational courses. Entry requirements are low, with no previous qualification necessary to enrol. In the field of childcare the NVQ3 does not allow entry into higher education, thus limiting workers' chances of further advancement (Calder, 1995). In short, much of the improvement in ECEC workers qualification level was driven by the expansion of one specific qualification – the NVQ3 – which was especially weak (Department for Education (DfE), 2012).

The evidence on educational qualifications is therefore more layered than we may have expected. Hypothesis 2 is not well supported. The results point to an upgrading of ECEC workers' qualifications. However, a closer inspection has also revealed that such upgrade was done 'on the cheap', with a sharp expansion of NVQs at the expense of other qualifications.

The relationship between pay and qualifications

The third stage of the analysis tests Hypothesis 3, namely that ECEC workers' pay is strongly associated with workplace characteristics. I estimate a conventional wage equation on the sample of ECEC workers only. The focus is on the relationship between qualifications and pay on the one hand, and the relationship between sector of employment and pay on the other. I use two specifications. The first one includes the following independent variables: gender, age, age squared, dummies for each qualification level and job tenure. Drawing on the findings from the previous section I capture qualifications by using a seven-fold variable, which modifies the standard LFS one by splitting the category 'A level or equivalent' into 'A level or equivalent excluding NVQ3' 'NVQ3 only'. The latter one is the base category.

The second specification adds controls for supervisory responsibility and for sector of employment. Both regressions include controls for year, region of place of work and proxy respondent (coefficients not shown). Results in Table 3 point to a significant association between higher education below degree level and pay, with ECEC workers holding these qualifications earning 10 percent more than those with an NVQ3. At the same time, those workers who do not have any qualification earn 22 percent less than those with an NVQ3. Job tenure also matters. Workers who have been in their job for longer than two years earn more than those who have just been recruited. The introduction of supervisory experience and sector of employment reduce the estimates on qualifications by 3 percentage points, and almost halves those on experience. But while supervisory responsibility is associated with a 6 percent increase in wage, the coefficient on public sector is 27 percent, indicating that sector of employment is the single most important factor associated with pay.

The difference between public and private sectors is remarkable and raises the question of whether public sector workers differ systematically from private sector ones. The conventional way of decomposing wage separates the average wage differential into two elements: differences in the average value of wage-determining characteristics and differences in the returns to such characteristics (Jann, 2008). Results of this decomposition are reported in Table 4. On average, public sector workers earn 34 percent more than workers in the private sector. More than a third of this large differential is due to differences in the returns to workers' characteristics and therefore can be considered a public-sector wage premium, while only a tenth is accounted for by differences the observable characteristics between the two groups of workers. This seems plausible: public provision is unlikely to attract workers from a more advantaged pool of applications, because it is generally concentrated in more deprived areas.

Hypothesis 3 is thus supported. While pay is positively associated with qualifications and experience, the association with sector of employment is by far the most important.

Table 3. Wage determinants among ECEC workers, OLS model.

	Workers' characteristics only	*+ Workplace Characteristics*
	b (se)	*b (se)*
Female	–0.12*** (0.07)	–0.08*** (0.07)
Age	0.04*** (0.00)	0.03*** (0.00)
Age^2	–0.00*** (0.00)	–0.00*** (0.00)
Qualifications (Ref category: NVQ3)		
Degree or higher	–0.04*** (0.04)	–0.02*** (0.04)
Some higher education	0.10*** (0.03)	0.07** (0.03)
A level or equivalent (excl NVQ3)	0.01*** (0.03)	0.01*** (0.03)
GCSE or equivalent	–0.04*** (0.02)	–0.03*** (0.02)
Other qualification	–0.05*** (0.03)	–0.03*** (0.03)
No qualification	–0.22*** (0.05)	–0.18***
Job tenure (Ref category: less than a year)w		
One year but less than two	0.01*** (0.02)	0.00*** (0.02)
Two years but less than five	0.07*** (0.02)	0.05*** (0.02)
Five years but less than ten	0.15*** (0.02)	0.08*** (0.02)
Ten years but less than 20	0.24*** (0.03)	0.13*** (0.03)
20 years or more	0.31*** (0.04)	0.19*** (0.04)
Supervisory responsibility		0.06*** (0.02)
Public sector		0.27*** (0.02)
Constant	0.65*** (0.11)	0.77*** (0.10)
R-squared	0.2931	0.3696
N	2432	2432

Notes: OLS regression on ln(hourly wage). Additional controls include: years, regions and proxy respondent.
Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Sample: ECEC workers. LFS data, 1997–2004, first wave respondents only.

Table 4. Decomposition of the private sector/public sector wage.

Overall differential	Portion attributed to differences in…	
	Characteristics	Public sector premium
0.34	0.033 **	0.23***
(0.016)	(0.014)	(0.019)
100%	9.7%	68%

Notes: Oaxaca–Blinder decomposition of ln(hourly wage). Standard errors in parentheses. Additional controls include: qualifications, job tenure, supervisory responsibility, age, age^2, gender, years, regions and proxy respondent. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Sample: ECEC workers. LFS data, 1997–2004, first wave respondents only.

Discussion and conclusions

This paper has presented new evidence on the pay and qualifications of ECEC workers in the UK from 1997 to 2008. It has shown that despite a marked increase in public investment, the pay differential between ECEC workers and other UK employees has remained constant, at about 40 percent. ECEC workers continue to be at the bottom of the pay hierarchy together with workers in elementary occupations such as shelf fillers. In relation to qualifications, the evidence is more mixed. On the one hand, there has been a clear improvement in the education profile of ECEC workers with a reduction in the proportion of staff without any qualification or with very low ones. On the other hand, such up-skilling was driven by NVQ3 and there are concerns about the worth of this

vocational qualification. The third set of findings has once again confirmed the divide between public sector provision and private one and the presence of a large public-sector wage premium.

An important limitation of the analysis is that it does not apply to ECEC teachers or managers and therefore cannot offer a complete description of all those working with children aged under five. Instead, the results give a full account of frontline workers employed in ECEC centres and working with children aged three and below, and a more partial account of the staff engaged with three- and four-year-olds. As such, the analysis is more pertinent to services for children aged under three, which is the age group for which capacity is still lacking in several EU countries and on which recent policies have concentrated. While the analysis presented here does not directly examine quality of provision, the underlying motivation is that a thorough understanding of working conditions in ECEC services is an integral part of any quality assessment of ECEC services. The OECD, for example, suggests that 'improving working conditions, qualification and training' is among the five policy levers governments have in order to improve ECEC quality (OECD, 2012).

These results presented shed some new light on Labour's ECEC policies and in particular on the challenges of devising appropriate policies to support ECEC availability, affordability and quality. Two main observations can be made. First, insofar as the private sector is characterised by poorer pay, a commitment to expand provision outside the public sector is problematic for workers. Other countries have a system of provision that relies mainly on non-state providers, for example Norway or New Zealand. Yet they have in place more effective ECEC policies to avoid a low wage/low qualifications scenario. In Norway providers receiving public funding cannot pay their staff less than municipal providers (Ellingsæter, 2014), while in New Zealand the amount of public money providers receive is correlated to the level of qualification of their staff (May, 2008). By contrast, funding in the UK is essentially aimed at making services more affordable. In a country where fees can be very high, this may seem a sensible strategy, but it implicitly contradicts the 'child-centred social investment' criterion that ECEC services need to be of high quality. Parents tend to be more sensitive to prices than to quality, which is less easy to observe. Moreover, for-profit providers operating in a flexible labour market have an incentive to keep labour costs down while profiting from state funding injected into the system. All this points to the need for carefully designed policies that channel funding and regulate provision while also taking into account the consequences for workers.

The results also point to the importance of the vocational education and the training system. The poor content and design of the NVQ qualifications may serve to undermine the correlation between pay and qualifications. Undoubtedly, NVQ qualifications are very specific to the UK (Wolf, 2011). But the findings help highlight the interdependencies between different segments of the education system. ECEC provision is connected to later educational stages not only through children's achievements, but also because education and training providers contribute to the preparation, knowledge and skills of ECEC workers.

In the last 20 years ECEC services have been increasingly framed as part of a social investment approach; a preventive strategy to promote economic prosperity (Esping-Andersen, 2002; Lister, 2003). This paper has demonstrated how a social investment in early childhood needs to focus on providers as much as on users (Di Stasio and Solga, 2017). Increasingly, recognition of the importance of children's early years has been matched by the admission that ECEC workers contribute significantly to children's future life chances. But in the UK, as well as in other countries, the contradiction between the importance of this work and its low pay has yet to be solved.

Acknowledgements

Part of this work was originally supported by the Department of Social Policy at the LSE through the Titmuss-Meinhardt Scholarship and I would like to thank David Piachaud and Jane Lewis for their feedback on an earlier iteration of some of the material presented here. I am grateful to Kitty Stewart for helpful discussions on ECEC over the last years and for her observations on the final draft. I would also like to thank Valentina Di Stasio, Heike Solga, three anonymous referees, and the Editor for their valuable comments and suggestions.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Part of this work was originally supported by the Department of Social Policy at the LSE through the Titmuss-Meinhardt Scholarship.

Notes

1. In Northern Ireland, compulsory schooling starts in the September a child is aged four.
2. At the time of writing, both schemes have been phased out and substituted by new subsidies (see https://www.ifs.org.uk/publications/7151).
3. For a discussion on the role of employers in the provision of education and training, see also Protsch and Solga (2017).
4. Note that the vocational education system has been substantially reformed starting from 2011.
5. These are the labels used in the SOC2000. For the preceding years I have to rely on the previous classification system, the SOC92, which includes the following unit groups: 'Nursery nurses', 'Playgroup leaders' and 'Other childcare occupations not elsewhere classified'. I use additional information, such as industry classification, to ensure consistency across the two classifications. For more details on the procedure which was followed, see Gambaro (2012).
6. A measure of time in the occupation would have been preferable, but this is not available in the LFS.
7. This variable is not necessarily collinear with qualifications, as I have shown elsewhere (Gambaro, 2012).

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