
Research on Early Childhood Education in the UK

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1 Introduction

Virtually every developed country has set up some form of early childhood education for children below the age of compulsory schooling. The differences lie in the organisational forms, the level of state subsidy, the responsible authorities and the age at which children access provision. In many countries public authorities offer subsidised places from a very early age, often from the end of statutory maternity leave. However, this does not necessarily mean that demand for these places is fully met. In the UK school starts at age 5 so early childhood education concerns children under 5 years of age. Early childhood education in the UK occurs in several types of provision. Some types of provision including playgroups, nursery schools and nursery classes provide for older preschool children, typically 3-5 year olds, while some such as day nurseries will also have facilities for younger children. While these forms of provision are designed for the over-threes it is quite common for children to start in these forms of care a little earlier. Playgroups are provided by voluntary or local authority sectors and are used by all sections of the population. Almost all nursery schools and classes are provided by local authorities and are used by all sections although they are often targeted, particularly nursery schools, on more disadvantaged communities. Private nursery schools also exist and are used by affluent families, although they may register under regulations for playgroups. Provision varies across the UK and in Northern Ireland children from three upwards in rural areas can also be found in reception groups or reception classes within primary schools.

There has been increasing emphasis on early childhood learning in the UK. As a result of evidence from the Effective Provision of Preschool Education (EPPE) project (e.g. Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, 2004), in 2004 the government

made a publicly-funded, part-time preschool place a statutory right for all 3 and 4 year old children. So universal early childhood education in the UK had arrived. The 15 hours a week of free early childhood education is not compulsory and is used by over 95 % of 3- and 4-year-olds. From 2005 the government also has provided for Early Years curriculum guidance on delivering quality integrated education and care for children from birth to age 6; and a reformed regulatory framework to raise quality. The guidelines are part of the Early Years Foundation Stage (EYFS) documents produced by the Department for Education (DfE, 2012). The aim of the EYFS is to document what is regarded good practice in early years provision, including curriculum guidance. Also every early years setting is inspected by the government-funded Office for Standards in Education (Ofsted; <http://www.ofsted.gov.uk/>) to ensure minimum standards are met. The results of Ofsted inspections are publicly available on the internet.

2 Research Evidence

Preschool provision for children 3-5 years old typically has some level of educational orientation but this varies in type and amount between preschool centres. This section will consider evidence on the effects for children's development of experience in such preschool provision.

There have been several birth cohort studies in the UK, notably cohorts born in 1958; 1970 and 2000/01 and their data can be used to investigate child development difference that may be linked to early childhood education. In 1970 Osborn & Milbank (1987) analysed cohort data from a sample of 8,500 children, with additional information merged in from a census of all preschool institutions. They assess separately the effects on cognitive and behavioural development at ages 5 and 10 of several types of ordinary preschool programmes, finding similar types of effects for nearly all. Based on 'analyses of variance' controlling for a number of important socio-economic and family factors, they find that preschool generally boosts cognitive attainment at ages 5 and 10, when the impact of socio-economic status and maternal educational level was controlled. Goodman & Sianesi (2005) found that investments in early childhood education before the age of 5 appear to have had long-lasting and positive effects on the children from the 1958 birth cohort. Early childhood education was associated with improvements in cognitive test scores, including both maths and reading at age 7; these effects diminish in size but remain significant throughout the schooling years, up to age 16. In adulthood, early childhood education was found to increase the probability of obtaining qualifications and to be employed at 33, with a 3 to 4 % wage gain at 33. Using another cohort, the millennium cohort study (MCS, born 2000/01) data Becker (2011) found that early childhood education helped the language development of children from low education mothers.

3 The EPPE study

The most recent UK research is dominated by the Effective Provision of Preschool Education (EPPE) project, later called Effective Preschool & Primary Education (EPPE) and Effective Preschool, Primary & Secondary Education (EPPSE) (Melhuish et al., 2008a; Sylva et al., 2010). This is a longitudinal study of a nationally-representative sample of young children's development (intellectual and social/behavioural) from age 3 upwards. The EPPE team collected a wide range of information on over 3,000 children, their parents, their home environments and the preschool settings they attended. Subsequent stages of the project also collected data on primary and secondary schools attended by the sample. Preschool centres (141) were randomly sampled to include the full range in England (local authority day nursery, integrated children's centres, playgroups, private day nurseries, nursery schools and nursery classes). A sample of 'home' children (who had no or minimal preschool experience) was recruited to the study at entry to school for comparison with the preschool group. The study has applied multi-level modeling, in a school effectiveness design, to investigate the separate effects of personal and social and family background, the quality of the learning support provided in the home and the quality of the learning environment provided by the children's early childhood education centre, primary and secondary schools. In addition to collecting demographic data through parental interviews and questionnaires, a developmental profile was established for each child, which included cognitive assessments and social developments assessments at regular intervals. The quality of the preschool centres was assessed through standardised observation-based rating scales, which were the Early Childhood Ratings Scales- Revised (ECERS-R) (Harms, Clifford & Cryer, 1998) and the Early Childhood Rating Scales- Extended (Sylva et al., 2010). In addition the quality of the Home Learning Environment (HLE) was assessed through interview (Melhuish et al., 2001; Melhuish et al., 2008b).

The methodology allowed the study to measure the effectiveness of individual preschools in terms of improving child outcomes. This enabled the project to investigate explore effective practice through intensive case studies of twelve preschool centres chosen because they varied in their effects upon children. Subsequent qualitative studies investigated children succeeding against the odds.

At the start of school demonstrated there were beneficial effects of high quality provision on children's development (Sammons et al., 2002; 2003; 2004a). The main findings were:

Impact of attending a preschool centre

- Preschool experience, compared to none, enhances children's development.
- Duration (number of months) is related to better intellectual development and improved independence, concentration and sociability.
- Full-time attendance led to no better gains than part-time attendance.

- Disadvantaged children in particular benefit significantly from good quality preschool experiences, especially if they attend centres that cater for a mixture of children from different social backgrounds.

The quality and practices in preschool centres

- The quality of preschool centres is directly related to better intellectual and social/behavioural development in children.
- Good quality can be found across all types of preschool. However quality was higher overall in integrated children's centres, nursery schools and nursery classes.
- Settings that have staff with higher qualifications, especially trained teachers, show higher quality and their children make more progress.
- Where settings view educational and social development as complementary and equal in importance, children make better all round progress.
- Effective pedagogy includes interaction traditionally associated with the term 'teaching', the provision of instructive learning environments and 'sustained shared thinking' to extend children's learning.

Type of preschool

- Some individual preschool settings are more effective for positive child outcomes.
- Children tend to make better intellectual progress in fully integrated children's centres nursery schools, where the observed quality of provision was usually higher.

When the EPPE children took national assessments at age 7 (Key Stage 1) again the children who had received higher quality early childhood education showed better educational attainment and also better social development (Sammons et al., 2004b). A similar pattern of results occurred at the end of primary school when children who had received higher quality early childhood education showed better results in national assessments (Sammons et al., 2008a) and in social development (Sammons et al., 2008b). At the end of primary school the effect size associated with 18 months of high quality preschool (compared to no preschool) was equivalent to that of 6 years of highly effective primary school (roughly 0.2 SD for literacy, and 0.4 SD for numeracy), having controlled for child, family and neighbourhood characteristics. When the children had been in secondary school for 3 years (age 14) analysis of data on national assessments and social development again indicated that the longer-term beneficial effects of higher quality early childhood education were persisting into secondary school and the teenage years (Sammons et al., 2012a,b). Low quality early childhood education had no effects (Sylva et al., 2011). Subsequent follow-ups are planned to investigate longer-term effects at 16 and 18 years of age.

The qualitative studies of effective preschool centres in the EPPE project provide strong evidence that a well-planned curriculum and pedagogy with specific learning goals, delivered by responsive educators, improves children's intellectual and social/behavioural development. Children made more progress in centres where cognitive and social goals were complementary and viewed as equally important. In centres rated as excellent, edu-

cators and children engaged in more sustained shared thinking. Educators intentionally extended children's thinking by working together to solve a problem, clarify a concept, expand a narrative or explore a question. (Siraj-Blatchford et al., 2003).

One of the findings of the EPPE project was the very powerful influence of the learning opportunities provided in the home in the early years, which was called the Home Learning Environment (Melhuish et al., 2001; 2008). Qualitative studies (Siraj-Blatchford, 2010; Siraj-Blatchford et al., 2011) revealed how important these early educationally relevant experiences within the child's home were very important for children in succeeding against the odds.

4 The EPPNI study

These results for the EPPE study have largely been replicated in the effective preschool provision in Northern Ireland (EPPNI) study of 850 children covering the full range of preschool centre experience in Northern Ireland (Melhuish et al., 2006). In the EPPNI study the positive effects of high quality early childhood education upon academic and social development are apparent up to 8 years of age. Subsequent follow-up at 11 years of age demonstrated that early childhood education was related to age 11 performance in English and mathematics on national assessments. High quality preschools show consistent effects that are reflected not only in improved attainment in English and mathematics at age 11, but also improved progress in mathematics over primary school. Children who attended high quality preschools were 2.4 times more likely in English, and 3.4 times more likely in mathematics, to attain level 5 than children without preschool experience (Melhuish et al., 2010, in press). All of these effects occur after controlling for the demographic characteristics of the family and neighbourhood as well as other experiences of the child. In the EPPNI study the beneficial effects of early childhood education only occurred for nursery classes, nursery schools and playgroups, which had higher quality of provision as measured by the observational instruments ECERS-R and ECERS-E. The preschool settings with lower quality provision, which were private day nurseries, reception classes and reception groups, did not show beneficial effects.

In England and Northern Ireland the evidence indicates that part-time provision produces equivalent effects to full-time provision and that the more months of provision from 2 years of age onwards the stronger the improvement.

5 Sure Start

In 1999 the UK government announced a new early years programme for children from disadvantaged families. By 2004 524 Sure Start programmes targeted families with children 0-4 years of age in the 20 % most deprived communities. Sure Start was meant to provide a range of early childhood services, including early childhood education. An

evaluation of Sure Start programmes produced early findings (NESS, 2005) that indicated that Sure Start programmes were not having the impact hoped for. Also, evidence from the EPPE project indicated that a type of early years provision, integrated children's centres, was particularly beneficial to children's development. Therefore the government decided that this combination of evidence justified changing Sure Start programmes into children's centres, which offer comprehensive early education and family support services in the most deprived communities. Following the change to children's centres, the results for the evaluation of Sure Start improved with better outcomes for parenting and child social development at 3 years of age (Melhuish et al., 2008; NESS, 2008). However when the same children were followed up at age 5 the beneficial effects for child social development had disappeared (NESS, 2010). This was probably because almost all children in the country, whether in Sure Start areas or not, were receiving free part-time early childhood education from age 3 onwards. This early childhood education probably led to an equalising of development for children whether in Sure start areas or not. The latest results from the Sure Start programme indicate positive effects upon parents but no significant effects upon child outcomes overall up to age 7 years (NESS, 2012). However a study of 1,000 children in Sure Start children's centres did show that where the quality of preschool centre provision from age 3 to 5 years was of higher quality then there was better language development at the start of school whether this was measured by researchers using standardised assessments or by teachers using a national assessment called the Foundation Stage Profile, which assesses children overall on development related to school readiness (Melhuish et al., 2010). This strongly indicates that to produce better language development the quality of early childhood education needs to be improved. Also earlier research (Melhuish et al., 1990) showed how higher quality childcare 0-3 years also was associated with improved language development.

6 Discussion

Research on early childhood education in the UK has produced strong evidence of the long term beneficial effects of high quality early childhood education. This research is supported by research from other parts of the world. Studies of population-representative samples in the USA find benefits for school readiness (Gormly, Phillips & Gayer, 2008; Magnuson, Meyers, Ruhm, & Waldfogel (2004) and later educational attainment (Vandell et al., 2010) from early childhood education. In France preschool (*école maternelle*) is a universal, free, education program with access from age 3. During the 1960s and 1970s large-scale expansion led to the enrollment of 3-year-olds increasing from 35 % to 90 % and of 4-year-olds from 60 % to 100 %. Based on state-collected data of representative samples there were sizeable and persistent effects indicating that preschool helps children succeed in school and obtain higher wages in the labor market. Preschool also appeared to reduce socioeconomic inequalities as children from less advantaged backgrounds benefitted more than the more advantaged (Dumas & Lefranc, 2010). Likewise in Switzerland

the impact of preschool expansion was associated with improved intergenerational educational mobility with children from disadvantaged backgrounds benefiting most (Bauer & Ripahn, 2009). Further evidence comes from the expansion of preschool education for 3-6 year olds in Norway during the 1970s, where examining differential implementation of preschool by municipalities and population education and employment data, it was found that preschool participation was associated with strong benefits for later educational and labour market outcomes across the population (Havnes & Mogstad, 2011). Also in Denmark Bauchmüller, Gørtz and Rasmussen (2011) used register data on the whole population to demonstrate that higher quality early childhood education has effects on educational attainment at age 16, i.e. 10 years are leaving early childhood education.

Similar evidence exists outside of North America and Europe. Preschool boosted primary school achievement in Bangladesh (Aboud, 2006), with similar results reported for ten other countries (Montie, Xiang, & Schweinhart, 2006). During preschool expansion in Uruguay comparisons of a) siblings with and without preschool and b) regions varying in preschool expansion, revealed clear benefits from preschool up to secondary school (Berlinski, Galiani, & Manacorda, 2008). Similar analyses in Argentina found that 1 year of preschool was associated with primary school attainment increases of 0.23 of a standard deviation (Berlinski, Galiani & Gertler, 2009).

A meta-analysis of 125 early childhood education studies (Camilli et al., 2010) found that early childhood education was associated with substantial effects for both cognitive and socio-emotional outcomes. Preschool programs with an emphasis in educational experiences directly delivered to the child appeared to have larger effect sizes. Most of the research upon ECEC has occurred in developed countries. However some research has focused on the potential for ECEC to improve general population outcomes for developing countries. Engle et al., (2011) have reviewed the available evidence and concluded that increasing preschool enrolment was amongst the most effective ways of improving child outcomes and would have substantial benefits with a very favourable benefit-to-cost ratio.

In conclusion the evidence for the benefits of high quality early childhood education is substantial and increasing (Melhuish, 2011). For example the Organisation for Economic Cooperation and Development (OECD, 2011) examined educational attainment data for 65 countries, finding that literacy at age 15 was strongly associated with preschool participation in countries where a large proportion of the population use preschool, where preschool is for more months, and where there were measures to maintain the quality of preschool. They concluded that widening access to preschool can improve performance and equity by reducing socioeconomic disparities, if extending coverage does not compromise quality. It can be argued that early childhood education is critical for children's future competence, coping skills, health, success in the labor market, and consequently the social and economic health of the nation (e.g. McCain, Mustard & McCuaig, 2011; Heckman, 2006). In a technologically sophisticated world a population's educational attainment is likely to be increasingly important for a nation's economic development, as argued by the US Federal Reserve chair, "Research increasingly has shown the benefits

of early childhood education and efforts to promote the lifelong acquisition of skills for both individuals and the economy as a whole. The payoffs of early childhood programs can be especially high” (Bernanke, 2011). Thus early childhood education is a means of advancing educational and social development for all and it becomes part of the infrastructure for economic development. Some countries, e.g. China (Shenglan, 2006) appear to have taken this perspective on board in their focused development of early childhood education.

7 References

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