

CARE – Curriculum Quality Analysis and Impact Review of European Early Childhood Education and Care (ECEC)

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The evidence on Early Childhood Education and Care (ECEC) in the first three years for disadvantaged children indicates that high-quality ECEC can produce benefits for cognitive, language, and social development. With regard to provision for subsequent years, disadvantaged children benefit particularly from high-quality preschool provision. Further, children benefit more in socially mixed groups.

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High-quality childcare has been associated with benefits for

children's development, with the strongest effects for children from disadvantaged backgrounds. However, negative effects can sometimes occur. Discrepant results may relate to age of starting and differences in the quality of childcare. The evidence on ECEC in the first three years for disadvantaged children indicates that high-quality ECEC can produce benefits for cognitive, language, and social development. With regard to provision for subsequent years, disadvantaged children benefit particularly from high-quality preschool provision. Further, children benefit more in socially mixed groups. This educational success is followed by increased success in employment, social integration, and reduced criminality in adulthood.

- The terms day care, child care, and ECEC have all been used to refer to various forms of non-parental childcare and early education occurring before school.
- ECEC has become a salient developmental context for most children in high-income countries and increasingly so in low- and middle-income countries.
- Quantity of care issues are concerned with whether child development is related to the following: a) the use of non-parental day care versus parental care (or the use of different types of care); b) the age at which children enter ECEC; and c) the amount of time children spend in ECEC.
- The structural quality of ECEC refers to the organisational and physical features of ECEC, and is generally considered higher when the following conditions are met: child group sizes and child-adult ratios are small, teachers are trained, and curriculum/programme type, toys and learning materials, and physical space are age-appropriate and adequate.
- The process quality of ECEC refers to the quality of children's daily experiences (including adult-child interactions) that foster children's development.

Quality characteristics of early years childcare:

- Adult-child interaction that is responsive, affectionate, and readily available
- Well-trained staff who are committed to their work with children
- A developmentally appropriate curriculum with educational content
- Ratios and group sizes that allow staff to interact appropriately with children
- Supervision that maintains consistency in the quality of care
- Staff development that ensures continuity, stability, and quality improvement
- Facilities that are safe, sanitary, and accessible to parents

Studies in USA

Early Head Start (EHS)

- EHS is a two-generation intervention programme serving parents and children from birth to age three.
- Centre-based programmes had the strongest effects on child outcomes, whereas home-based programmes had the strongest effects on parenting outcomes. Further, a mixed model combining both centre-based provision with home visiting had the most wide-ranging and strongest positive impact.
- Effect sizes were modest, generally in the range of 10% to 20%.

The positive effects for children

- Better cognitive and language development
- Better immunisation records and less hospitalisation
- Lower levels of aggressive behaviour

- More sustained play
- Greater engagement and less negativity with parents

The positive effects for parents

- Greater warmth and supportiveness toward children and less detachment
- More time playing with children
- More stimulating home environments
- More language learning and reading support for children
- Less corporal punishment and a wider range of discipline strategies
- A higher likeliness to be employed or in training
- Delayed subsequent child bearing compared to controls

Infant Health and Development Programme (IHDP)

- IHDP was an intervention aimed at improving the health and development of premature, low birth weight (LBW) (<2.5 kg) infants through a combination of education and support for parents plus enriched educational day care and health services for children.
- For children in the range 2.0–2.5 kg, there were large and significant benefits from the enriched educational day care intervention.
- For very LBW (<2 kg) infants, the results were more equivocal.
- There were modest short- and long-term improvements for cognitive outcomes for the heavier LBW participants.
- For non-cognitive outcomes, both short- and long-term effects on heavier LBW children were reported.

Milwaukee project

- The Milwaukee Project was an intervention programme designed to facilitate the intellectual development of very young disadvantaged children.
- The intervention technique employed an intensive educational programme for very young high-risk children,

starting before the age of six months.

- The very small-scale intervention included a full-time, child-oriented, centre-based programme from infancy to six years of age with increasing educational input as age increased. Vocational training, childcare, and household guidance was also provided for mothers.
- By the age of six years, all the children from the experimental group had higher IQs compared to children from the control group.
- After leaving the programme, IQs started to decline and the scholastic achievement scores of the experimental group were the same as those of the control group.

Abecedarian Project

- The Abecedarian Project involved a poor African-American population in North Carolina.
- One group was placed in a programme involving centre-based care and home visits from the age of three months, which continued until the children entered school.
- The control group received family support, social services, low-cost (or free) pediatric care, and child nutritional supplements. However, there was no additional childcare beyond that provided by the parents and local services.
- Overall, there is a consistent positive message on the long-term impact of Abecedarian on cognitive and educational outcomes.
- Long-term effects for non-cognitive outcomes were found, such as reduced depression and delinquency and better employment.

Project CARE

- In this project, the effects of a centre-based programme, home visits, and control conditions were compared, with interventions starting shortly after birth. The target group was low-income African-American

families.

- The day care plus home visit intervention group scored significantly higher on developmental assessments compared to the control and home visit only groups.
- Children in treatment groups that included childcare were rated as more task-oriented in infancy and tended to exhibit higher and more stable cognitive scores. This started during late infancy and continued through to early childhood.

Perry Preschool Project (PPP)

- This half-day, five days a week, centre-based programme started interventions at three years of age and was supplemented by weekly home visits lasting 90 min.
- African-American children with IQs <90 were randomly assigned to the intervention or control groups.
- The intervention involved a high-quality educationally-oriented curriculum with well-trained staff.
- The programme was demonstrated to have long-term effects.
- The intervention group exhibited higher levels of educational achievement.
- By the age of 27 years, the long-term benefits of the intervention included the following: reduced school drop-out, reduced drug use, reduced teenage pregnancies, enhanced employment, reduced welfare-dependence, and reduced crime.
- The long-term effect sizes were in the range 0.30–0.50 SD.

Early Training Project (ETP)

- Three to four year-old children were randomly assigned to treatment (44) and control (21) groups.
- Children were selected if they lived in poor or deteriorating housing or public housing, had a low family income, and had parents with a lower than high

school education who were in an unskilled or semi-skilled occupation.

- The intervention consisted of a 10-week summer preschool programme for the 2–3 summers prior to the first grade, plus weekly home visits during the remainder of the year.
- There were positive modest effects, such as on high school completion.

Head Start

- Head Start is a broad-based federally funded (but locally administered) early intervention programme with the aim of improving outcomes for children in disadvantaged families.
- Typically, a Head Start programme would include centre-based early childcare and education from three years of age on at least a half-time basis.
- While Head Start had a substantial and immediate effect on participants, the long-term effects were less evident.

Child-Parent Centre (CPC)

- CPCs provide centre-based educational support and family support to disadvantaged children and their parents. This includes education, family, and health services and half-day preschool and school-age services up to the age of nine years.
- Children participated in the preschool intervention for one or two years. They achieved a higher rate of high school completion, more years of completed education, and lower rates of juvenile arrest, violent arrests, and school dropout.
- Children with two years of preschool experience had higher cognitive readiness and higher achievements in reading and mathematics at the age of five years compared to those with only one year of preschool.

- The short-term effects included moderate to high effect sizes, while long-term effects (both cognitive and behavioural) were small to moderate.

Great Start Readiness Programme

- This is a state-funded preschool initiative.
- To qualify for the programme, a child must be four years of age and have at least 2 of 25 risk factors (such as living in a low-income or single parent family).
- Children receive a child developmental preschool programme that provides age-appropriate activities to promote their intellectual and social growth and school readiness.
- Children's families receive parenting support, guidance, and referrals to community services as required.
- Children who attended the programme were more advanced in six areas of child development compared to the control group: initiative, social relations, creative representation, music and movement, language and literacy, and logic and mathematics.
- In grade four, students who had attended the programme had a significantly higher percentage of satisfactory scores on academic performance.
- Students who participated in the programme demonstrated improved levels of on-time school graduation, lower retention in grade, higher performance in mathematics and in mathematics and language arts combined in high-school.

Texas Targeted Pre-Kindergarten Programme

- The purpose of state-sponsored Pre-Kindergarten (pre-K) in Texas is to bolster the academic performance of at-risk children.
- The Texas programme ranks low in quality in terms of class size, staff to pupil ratios, and spending per capita.

- For the 3rd grade reading test there were statistically significant effects for public pre-K attendance.
- Attendance to public pre-K significantly reduced the probability of retention in grade.
- The likelihood of being assigned to special education in the third grade was lower for pre-K children.

Syracuse Family Development Research Programme

- This was a comprehensive childcare, education, health and family support programme from pregnancy to the start of school designed to improve child and family functioning through home visitations, parental training, and individualised day care.
- The programme targeted young, African-American, single-parent, low-income families.
- Child Development Trainers visited each family weekly where they focused on increasing family interaction, cohesiveness, and nurturing.
- In the Children's Centre (for day care), infants were assigned to a caregiver for attention, cognitive and social games, sensorimotor activities, and language stimulation.
- Compared with a control group, the intervention produced better educational attainment and school attendance for girls, but not for boys.
- In adolescence, there were improvements in social adjustment and reduced criminality of the intervention group.

European studies

UK

- The Hackney Day Care Study proposed to assess the effects of providing day care to children aged six months to three-and-a-half years from socially

disadvantaged families.

- While there was an increase in the likelihood of mothers in the intervention group being in paid employment, there was no increase in family income.
- Children in the intervention group were more likely to be infected with 'glue ear' (otitis media with effusion)
- No child development effects or positive cost benefits were found.

Denmark

- The Action Competencies in Social Pedagogical Work with Socially Endangered Child and Youth (ASP-program) aims to improve the wellbeing and cognitive functioning of all children.
- The intervention appears to have had a positive and growing effect on emotional symptoms, conduct problems, and hyperactivity inattention. However, there was no effect on peer relationships and pro-social behaviour.

Germany

- The Socio-economic Panel (SOEP) is a longitudinal survey of private households in a wide-ranging representative study with annual follow-ups.
- Children from advantaged families derived lower returns to childcare attendance than children from a less advantaged family backgrounds.
- Children who would benefit the most—younger children and children from disadvantaged backgrounds—are least likely to be sent to childcare.
- Children who are the least likely to enter childcare gained more from attending childcare in terms of social, language, daily, and motor skills than children who face lower unobserved entry barriers.

Netherlands

- Several early education and care programmes were

researched in the Dutch Cohort Study of Primary Education (PRIMA).

- The common aim of these programmes was to stimulate socio-emotional and cognitive development.
- Their curriculum is predominantly developmental. Most preschools work with mixed-age groups and most time is spent in free-play activities and work lessons with small groups of children.
- Whole group activities are regularly provided as starter, break, or closing activities during the day and include book reading, play, talking, and singing.
- In the second year of preschool, existing activities are complemented by literacy and mathematics activities (such as exploring letters and words, counting, and measuring)
- Using retrospective analysis, no statistically significant effects of targeted preschool education were found on language and cognitive outcomes and school achievement.
- Using a cohort-sequential augmented latent growth analysis, a study showed positive effects of teacher-initiated language, literacy, and mathematics activities on children's growth in these skills over time.

France

- The French kindergarten (ecole maternelle) is available to all children aged from three to six years and has an explicit educational mission, although this does not necessarily focus on the promotion of pre-academic skills.
- A study reported a stronger effect of an earlier start in ecole maternelle (age two compared to age three) on early school skills and grade retention in primary school, especially for children of low-income and immigrant ethnic minority families.

Summary of evidence for disadvantaged children

- The evidence on childcare in the first three years for disadvantaged children indicates that high-quality ECEC can benefit cognitive, language, and social development.
- With regard to provision for three years onwards, disadvantaged children benefit particularly from high-quality preschool provision.
- Children benefit more in socially mixed groups.

ECEC for children up to three years of age in the general population

Socio-emotional development

- Two meta-analyses conducted in the 1980s summarised many US studies and concluded that non-maternal care in the first years of life could increase the likelihood of insecure attachment with the mother.
- Daycare may compromise attachment security, but only in instances of poor quality infant care either at home and/or in daycare.
- A study found that children who started childcare aged 6–12 months and 18–23 months were more prone to frustration and had difficulty reuniting with their mothers. In contrast, children who started when aged 12–17 months displayed lower levels of relational distress.
- Infants and toddlers who are securely attached to their primary caregivers may find experiencing and settling into day care less stressful. Importantly, attachment security to the parent was related to the time spent by children adapting to daycare—if more time was spent, attachment remained or became secure.
- Caregivers showing high levels of sensitive responsiveness were more likely to have children securely attached to them.
- Quantity of group care, particularly where there is an

early age of entry and high hourly amounts, have been associated with somewhat elevated levels of externalising behaviour problems.

- High-quality childcare can partially compensate for the negative behavioural effects of high quantity childcare, and the effects on externalising behaviour seem to disappear during elementary school.
- Some studies have reported mixed findings related to externalising behaviours.

Cognitive, language, and educational development

- Overall, the studies in this review suggest positive effects of ECEC attendance under the age of three years with regard to children's cognitive and language development and academic achievement.
- The positive effect of ECEC seems particularly true for attendance in centre-based care and for children starting to attend ECEC settings between the ages of two to three years.
- In the Brookline Early Education Project (BEEP), children receiving intervention scored higher and demonstrated fewer difficulties in social development and learning skills compared to children from the same classrooms and similar family backgrounds in the control group (without intervention). This was true for children in both kindergarten and third grade. As young adults, the intervention group reported higher incomes, less depression, better employment, better health, and less risk-taking behaviour compared to the control group.
- In some other studies, longitudinal benefits were not identified.

ECEC for children aged over three years in the general population

Socio-emotional development

- The effect of ECEC on socio-emotional development has been small.

Cognitive, language, and educational development

- Findings on the relationships between attendance or amount of ECEC and children's cognitive, language, and academic outcomes are more conclusive for over-threes in ECEC.
- ECEC participation boosts cognitive development, school readiness skills, and school achievement.
- Findings overall suggest that investing in universally available good quality ECEC can bring benefits to governments, children, families, and communities.

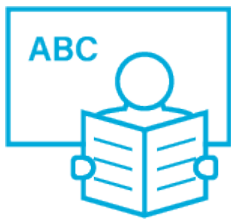
Summary

- Home-based care for under-threes may have some benefits for their language development.
- There is some support for the argument that younger children may develop optimally within smaller and more intimate non-parental care settings, where there are fewer peers and greater adult-child ratios than centre-based programmes.
- Centre-based care during the later toddler and preschool years (after aged two or three years) may be more beneficial for children's academic skills development than centre-based care for the youngest children.
- Preschool-aged children, with their growing language, communication, and social skills, and better emotion regulation may benefit from the enhanced variation and stimulation offered in centre-based care and from more opportunities to engage with peer groups.
- Generally, research on the effects of early childcare quality has indicated that high process quality childcare (such as child-teacher relationships and interactions) is prospectively related to more social

competence and less behavioural problems in children, with some effects lasting into adolescence.

- In good to excellent childcare, children score higher than peers in mediocre or poor childcare for cognitive and language development.
- Two broad dimensions of programme quality have been identified consistently to describe the most critical facilitators of children's development and learning: a) process quality, which includes the quality of the curriculum and pedagogical practices, and supporting positive relationships and children's emotional development; and b) the quality of structural aspects of childcare (such as adult-child ratios, caregiver qualifications, group size, and characteristics of the physical space).
- Using familiar songs, rhymes, and rhythms with movements can foster children's early language skills. Further, storytelling using familiar story-books and repeating the same story-book offers infants a sense of security and familiarity while promoting vocabulary development.
- The teacher role is to create conditions for optimal, self-propelled development and to introduce children to cultural domains such as academic language, literacy, numeracy, mathematics, and science.
- The way any changes are carried out should respect developmental and motivational principles, allowing children to take initiatives and partly to determine their own routes through the curriculum. Using construction and symbolic pretend play and collaborative work in small groups can be used as the main vehicles to stimulate development.
- The optimum recommended child-adult ratios for children under two years of age in ECEC settings is relatively consistently stated as 1:3. For those aged two to three years, recommendations on ratios are 1:4 or 1:5, while they are between 1:10 and 1:17 for three to five year-olds

- Ideal group sizes for children aged under two years in ECEC settings are recommended to be six to eight. Further, the recommendation is 10 to 12 for those aged two to three years, 14 to 18 for those aged three years, and 20 to 24 for those aged four to five years.
- Training programmes for work with infants and toddlers should include content that is relevant to the age group and reflect what is known about infant learning and development.
- The content of undergraduate programmes of early childhood teacher education should include foci on critical reflection, self-evaluation, and awareness of diversity.



Implications

- While the research on preschool education (over three years) is fairly consistent, research evidence on the effects of childcare (zero to three years) upon development has been equivocal, with some studies finding negative effects, some no effects, and some positive effects.
- Discrepant results may relate to the age of starting and possibly to differences in the quality of childcare received by children.
- Research indicates that high-quality ECEC can produce benefits for cognitive, language, and social development for disadvantaged children.
- Research indicates that the following quality characteristics of Early Years provision are important

for enhancing children's development:

- Adult-child interaction that is responsive, affectionate, and readily available
- Well-trained staff who are committed to their work with children
- A developmentally appropriate curriculum with educational content
- Ratios and group sizes that allow staff to interact appropriately with children
- Supervision that maintains consistency in the quality of care
- Staff development that ensures continuity, stability, and improving quality
- Facilities that are safe, sanitary, and accessible to parents