

Early Childhood Education

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Early Childhood Education (ECE) often is part of a broader educational disadvantage policy and offers institutional compensatory programs to young children who lack specific educational stimulation in the home environment. ECE typically aims at children from deprived socioeconomic backgrounds and those of immigrant origin. Although ECE nowadays is widespread and accepted as perhaps the most important means of preventing and combating educational disadvantage, the controversy surrounding the evidence of effects and thus the justification and foundation of ECE provisions still is not solved. This article focuses on the basis (or lack of it) of ECE in the Netherlands.

Early Childhood Education

Educational Disadvantaged Policy

Validity

Compensatory Programs

1. Educational disadvantage policy

Many western countries have implemented policies to combat educational disadvantage stemming from factors in the children's home environment, generally related to socioeconomic and ethnic/racial or immigrant background. It is assumed that the so-called social and cultural capital that is available to children from middle and upper socioeconomic backgrounds and which prepares them for a successful school career is lacking in working class and minority and immigrant milieus. To compensate for this "deficiency" educational institutions offer specific programs and activities subsidized by national or local authorities.

Educational disadvantage policies have been in effect for several decades, often already since the 1960s or 1970s. Still, there is only limited unequivocal empirical proof for their success and hardly any evidence of what really works. An important reason is that few methodologically sound studies have been performed. In addition, findings often are ambiguous, inconclusive or contradictory: typically, sometimes in one study a (small) positive effect is found for one specific variable, but at the same time there are many zero and negative effects for a range of other variables, and this differs per study. Much seems to depend on the specific context, target group, and program; therefore, the question remains whether the results from one program can be generalized to other contexts and target groups.

2. From combating to preventing educational disadvantage

Lately, the educational disadvantage policy's focus is increasingly being placed upon the preschool and early years of primary school. Reasons for this shift are the disappointing results of compensatory initiatives undertaken in later years ("when it is too late") and a consequence of the growing recognition of the importance of the early years for a child's development ("it is better to prevent than to cure").

Under the banner of Early Childhood Education (ECE), various home- and center-based intervention programs have thus been developed and implemented for disadvantaged children between the ages of 0 and 7 years. While the emphasis is on the children's linguistic and cognitive development, programs often also include social and emotional components, and this may be combined with educational and pedagogical support for the parents.

Considerable controversy surrounds the evidence of effects of ECE provisions. The main conclusion up until now has been that any (immediate) effects are very limited and in case they occur they often fade away in subsequent years. However, recently there have been signs that the situation is improving and that some positive effects may remain in the long run. Such effects are then assumed to depend on a particular set of conditions including the specific approach, the duration and intensity of the care, the quality and efforts of the caregivers, and the continuity of the intervention in the later phase of the children's care and education career [1][2][3][4].

3. The foundation of ECE in the Netherlands

Early Childhood Education presently is the most important element of the Dutch Educational Disadvantage Policy. It received a strong impetus halfway the 1990s with the introduction of national legislation, the development of ECE programs, the defining and subsidizing of target groups, and the large-scale nation-wide implementation of programs. It focuses on children between 2.5 and 6 years of age in daycare centers, preschools and kindergartens. In 2016, 70,000 children participated in pre-school programs and 35,000 in early-school programs^[5]. The yearly budget for pre-school education was 3,628 euro per child; it is not clear how much is spent on early-school education.

The huge investments in ECE are being justified by referring to evaluations of effective programs in the USA. The results have been summarized in many reviews and meta-analyses^{[6][7][8][9][10][11][12][13][14][15][16][17][18][19]}. The conclusion usually drawn is that high-quality programs may have a positive effect on not only the children's school career, but also on their success in the labor market and functioning in society. In general, cognitive effects are larger than non-cognitive effects, but both tend to fade out after some time or disappear altogether. To illustrate the strength of such effects, the results of the meta-analysis by Camilli et al. [11], combining a total of 123 separate studies, may be representative. The effect size Cohen's d for the cognitive domain was 0.23, for the school domain 0.14, and for the social domain 0.16. According to the rule of thumb provided by Cohen (1988), an effect size of below 0.20 is negligible, between 0.20 and 0.50 small, between 0.50 and 0.80 medium, and above 0.80 large. Thus, it must be concluded that on average, the effects are negligibly small.

Right from the beginning, in the discussions regarding the promotion of ECE, so-called model programs were and still are often mentioned. These include some high-quality experiments conducted in the USA. They started in the

1960s and 1970s and the children that participated then have been followed for decades afterwards.

An example is the Abecedarian Project (Campbell et al., 2002^[20]; Coalition for Evidence-Based Policy, 2016a^[21]). This project started in 1972 with 57 children in the experimental group; their development was compared with that of 54 children in a control group. The typical mother was African-American, 20 years of age, had had 10 years education, was unmarried, lived in with her parents, and had no income. The children and their mothers participated from birth until they were 8 years of age, the whole day, 5 days a week, and 52 weeks a year. The intervention focused on the domains of knowledge, language, and behavior. Until they were 3, one staff member per 3 children was available, and thereafter 1 per 6 children. In addition to activities at the daycare center school, the intervention included activities at home. The project cost \$18,000 per child per year.

A second experiment is the Perry Preschool project (Barnett, 2001^[22]; Campbell et al.^[12], 2002; Coalition for Evidence-Based Policy, 2016b^{[23][24]}). This project started in 1962 with 58 3 and 4 year olds growing up in a deprived black neighborhood. For 2 years the children visited a pre-school for 5 half-days; a control group of 65 children did not go to pre-school. The background of the children to a large extent was comparable to that of the Abecedarian Project. There was one crucial exception: the children were also selected on the basis of their intelligence. Only children with an IQ of between 70 and 85 points could participate, that is, children that are normally referred to special education institutions. In addition to the learning in the pre-school group, there was a strong home learning component. The staff members all were highly educated and had obtained a certificate to teach at a pre-school, an elementary school, and also in special education. During the project 1 staff member was available for every 5 to 6 children. The project cost \$11,300 per child per year.

Both experiments showed positive effects on a number of dimensions, not only in the short term but also in the (very) long term. Because of its randomized experimental character, these program results for many users have become the ultimate proof of the effectiveness of ECE. According to various researchers this optimism is not justified, however ^[8] ^{[13][25]}. For instance, because of demographic developments the situation regarding the availability and quality of ECE has changed dramatically; in addition, the situation in the USA deviates significantly from that in many European countries. Furthermore, the model projects differ considerably from regular ECE in terms of budgets, quality, duration and intensity.

In addition, Slavin & Smith (2009) ^[26] show that in this type of experiments with small samples effects will be dramatically inflated; in a sample of less than 50 children the average effect is 0.44, but in a sample of more than 2000 children this effect is no more than 0.09. Heckman, Pinto & Savelyev (2013) ^[24] claim, however, that by using advanced statistical techniques it is possible to correctly estimate significance in small samples. According to Burger (2010) ^[9] a direct comparison of American and European interventions not only is problematic because of huge quality differences in the implementation of the programs, but also because American children in general are in a much more unfavorable and disadvantaged position than their European peers are. With regard to the Perry Preschool project it should again be stressed that the target group not only was selected because of their unfavorable home situation, but also for their very low level of intelligence. In the Netherlands these children would have gone to special education institutions. That is the reason why in the Perry project staff also had a special

education training and diploma. Some researchers (Van de Kuilen & Van Dongen; Wikipedia, 2016) [27] assume that the effects found are not a direct result of the ECE program, but an indirect consequence of the fact that the children were away half or whole day from home and that this allowed the very low-educated mothers to finish an education and by doing so not only acquired more educational and cultural capital, but also had better opportunities in the labor market.

4. The Dutch evidence

In a recent statistical meta-analysis, Fukkink, Jilink & Oostdam (2017) [28] integrated the results of large-scale retrospective and small-scale experimental studies conducted in the Netherlands in the period 2000 to 2015. They analyzed 11 separate studies with 21 different sub-studies, including a total of 165 effect measures in the domains of language, numeracy, general intelligence and socio-emotional development. The measures were converted into the standardized effect size Cohen's d . Their findings showed that the aggregated effect for none of the domains discerned differed significantly from zero. The effect was 0.03, or – in the words of the researchers – “smaller than small”. This finding was based on more than 50,000 children and 60 million hours of ECE.

Recently the results of a unique large-scale cohort study called Pre-COOL were published (Leseman & Veen, 2016) [29]. First of all, it should be mentioned that there were many methodological difficulties that made it nearly impossible to draw unequivocal conclusions. In this study the developments of three possible ECE target groups were compared based on parental education, parental ethnicity, and home language. Comparisons were made for five effect measures, namely selective attention, vocabulary, play-work attitude, counting skills, and language skills. The effect sizes in terms of Cohen's d varied from -0.44 to +0.46; in other words, sometimes the ECE target group children gained on the non-target children, and sometimes the differences increased. In no more than one analysis on a total of 15, a positive effect of ECE appeared, namely regarding vocabulary (+0.46, which means that ethnic minority children progressed more than native Dutch children).

5. Conclusion

ECE in the Netherlands targets young children who do not receive enough adequate educational stimulation in their home environment. It provides compensatory stimulation through special educational programs at daycare centers, preschools and the lower grades of primary schools, and sometimes at home. The aim of ECE is to prevent young children from starting formal schooling with significant educational delays. The present ECE is in existence for more than 15 years now and some 4 billion euros have been invested. However, there is no empirical evidence that it really works or, in other words, the evidential basis is still lacking.

Note

This item is based on Geert Driessen (2017) [30] and Geert Driessen (2016) [31].

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