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Early Childhood Education Intervention Programs in the Netherlands: Still Searching for Empirical Evidence

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Abstract: Early childhood education (ECE) intervention programs nowadays are the core of the educational disadvantage policy in the Netherlands. They offer institutional compensatory activities to young children who lack educational stimulation in the home environment. Target groups mainly comprise children from deprived socioeconomic backgrounds and of immigrant origin. ECE is confronted with several bottlenecks, including the definition of the target groups, the quality of ECE staff, and the ECE programs. Most important is the controversy surrounding the empirical evidence of effects of ECE provisions. This article presents a description of state-of-the-art Dutch ECE, with special attention to recent Dutch studies on the effectiveness of ECE programs.

Keywords: early childhood education; intervention programs; educational disadvantage policy; effectiveness; evidence; The Netherlands

1. Educational Disadvantage

In many countries, policies to improve the educational opportunities of children from disadvantaged backgrounds have been implemented [1]. Educational disadvantage generally is defined in terms of low socioeconomic background and immigrant or ethnic minority origin. The focus of the present article is on the Netherlands, a country that hosts almost 17 million inhabitants of whom 22.1% have an immigrant background [2], among which, the largest groups are Turkish (2.3%), Moroccan (2.3%), Surinamese (2.1%), and Antillean (0.9%). What these immigrant groups share is their low level of education and high rate of unemployment. Turks and Moroccans came to the Netherlands as of the 1960s as so-called guest workers; their children now are second- or third-generation immigrants. Surinam and the Antillean islands are former Dutch colonies; many of their inhabitants arrived in the Netherlands in the 1970s for economic reasons. Large-scale longitudinal studies have shown that, at the very start of their school careers, Dutch language development of especially Turkish and Moroccan children already lagged behind by six months to more than a year [3]. This lag did not disappear during primary education. On the contrary, the so-called Matthew effect [4] seemed to occur: children of highly educated parents (usually native-Dutch) benefited more from education and therefore made more progress than children of poorly educated immigrant parents. The result was that, at the end of primary education, Turkish and Moroccan children were approximately two years behind in their language development compared to children of highly educated Dutch parents. A more recent study showed that lately immigrant children have been catching up with their native-Dutch peers, but in an absolute sense they still lag behind considerably [5].

The focus of attempts to combat educational disadvantages is increasingly being placed upon the preschool and early years of primary school [6,7]. The underlying assumption is that many of the elements that prepare children from middle- and upper socioeconomic backgrounds for school are missing in the family situations of working class and immigrant children. Under the banner of early childhood education (ECE), all kinds of home- and center-based intervention programs have thus

emerged for children between the ages of 0 and 7 years. Though the emphasis is on the linguistic and cognitive development of the children, programs often also include social, behavioral and emotional components, and this may be combined with the provision of educational and pedagogical support for the parents at home.

ECE intervention programs (which should be distinguished from regular education and care provisions for young children such as playgroups and schools) have been implemented in many European countries. Across countries, a huge variation exists, however. Differences occur, for instance, with regard to stage of policy development and implementation, regulation, organization and funding, focus and goals, target groups, enrolment rate, age group, duration and intensity, contents/curriculum, and staff characteristics [8–10]. In most countries, there is agreement on the decisive role of the quality; any effects of ECE are conditional on the high quality of the interventions. Two aspects are often discerned, namely process quality and structural quality. The former refers to the children's activities and interactions, the latter to, for instance, group size, children-to-teacher ratio, and teachers' qualifications [11]. In recent years, a growing number of countries have made substantial efforts to encourage quality in ECE.

Considerable controversy surrounds the evidence of effects of ECE provisions. The main conclusion up until now has been that any effects are very limited and in case they happen they often fade away. However, there are also signs that the situation is changing and that some positive effects may occur in the long run. Positive effects may 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 service or program with the children's later care and education [10–15]. This article presents an update on the Dutch situation.

2. Early Childhood Education

Early childhood education presently is the most important element of the Dutch Educational Disadvantage Policy. This policy aims at preventing and combating educational disadvantage resulting from social, economic, and cultural factors in the home environment of children. To compensate for "lacking" educational stimulation at home, young children between 2.5 and 6 years of age are offered the opportunity to participate in an educational program aimed at developmental stimulation [16].

Three types of institutions offer such ECE intervention programs in the Netherlands. Daycare centers are intended for children 0–4 years of age and open every work day. The primary function of daycare centers is to provide childcare in connection with the participation of the parents in the workforce. Preschools or preschool playgroups are intended for children between the ages of 2 and 4 years and for attendance during two or three mornings or afternoons a week. The primary goal of preschools is to stimulate the social-emotional and cognitive development of children. Kindergartens include the first two grades of primary school and are for 5- and 6-year-olds. Kindergartens are whole-day institutions and offer a combination of play and learning activities aimed at preparing the children for learning to read, write, and count. Daycare and playgroups are part of the pre-school phase and are the responsibility of the municipalities; kindergartens constitute the early-school phase and are the responsibility of the school boards.

Most of the regular staff at daycare centers and playgroups have attended a three-year secondary vocational education institution, where the focus is on practical training with an accent on caring (ISCED Level 3). Regular staff at kindergartens have attended a four-year teacher-training college with an accent on learning (ISCED Level 5). There are, however, no specific initial staff training courses for ECE intervention programs, though in some schools and colleges there is a very limited amount of attention to such education. In addition, most of the developers and publishers of ECE intervention programs offer in-service training and coaching for caregivers and teachers. The formal target group of ECE are children of poorly educated parents (often immigrant parents), but both municipalities and school boards are free to define other target groups [17]. However, in the latter case, they do not receive extra budgets from the national ministry for such groups, but have to fund

them from their own resources. ECE institutions have much freedom, for instance, in choosing from the wide array of programs available. Officially, programs are expected to focus on four domains, viz. language, arithmetic, social-emotional, and motor development. Nearly 70,000 children participate in pre-school programs and 35,000 in early-school programs [18]. The yearly budget for pre-school education, based on the formal target group criterion, is 254 million euro, or 3628 euro per child. It is not clear how much is spent on early-school education as this budget is included in the lump sum school boards receive from the Ministry of Education. In recent decades, billions of euros have been spent on combatting educational disadvantage, but there is no evidence of commensurate returns.

3. Bottlenecks

3.1. Target Groups

Regarding ECE, several bottlenecks have been observed in recent years [19]. The first one concerns the target groups. Because of the freedom for municipalities and school boards to define their own groups, a huge variety exists at present. These include, besides children of poorly educated parents, immigrant children, children of parents who do not speak Dutch well, children of parents who are addicted to alcohol or drugs, children who live in deprived urban areas, and children with learning or behavioral problems or even disorders. The latter indicates that the original disadvantage perspective (i.e., based on social milieu factors) is more and more mixed with the care perspective (i.e., based on individual developmental factors). The consequence of this is unequal treatment: in some municipalities, children can participate in ECE programs, while in other municipalities children with exactly the same problems do not receive such extra help. Another point concerns the identification of the target groups. Screening instruments are used that have not been developed for this specific purpose and that have questionable reliability and validity. In addition, it has recently been shown that the predictive validity of the formal criterion (i.e., low parental educational level) is insufficient [20]. The consequence is arbitrariness, resulting in many false positives—children unjustly receiving support—and many false negatives—children unjustly not receiving the support they need.

3.2. Staff

A second bottleneck relates to the quality of the staff. Quality generally is seen as the most important factor contributing to the effectiveness of ECE [13,14,21,22]. Although the evidence for strong effects of quality in general and, more specific, of teachers' qualification on children's social and cognitive development is inconclusive, there are indications that better qualifications contribute to stronger effects [15,22–24]. The core of ECE concerns the stimulation of language development. Important target groups are (grand)children of labor immigrants, of immigrants from former colonies, and of refugees. Therefore, it is crucial that the staff themselves have a good command of the Dutch language. However, several recent surveys showed that many of the staff in daycare centers and preschools only had a low level of language proficiency [25,26]. They were then required to take a Dutch language course. Studies also showed that in general staff in the pre-school phase function well enough in terms of their pedagogical competencies, but not in terms of their educational capacities [13]. It, therefore, has been suggested that, instead of the required middle professional training level, they should have a diploma from a higher professional training institution. This is especially so because more and more target group children have learning and behavioral problems.

3.3. Programs

The last bottleneck concerns the ECE programs used. There are many different programs. A distinction often made is between home-based and center-based. Home-based programs are typically and primarily aimed at parents and, via them, their children. An important objective is to teach the parents the skills needed to stimulate the cognitive, linguistic, and motor development of their children. In addition, the parents may also receive support with respect to child-rearing and the social

functioning of their children. Center-based programs are conducted in ECE institutions. The emphasis in these programs can differ but most focus on stimulating language and cognitive development. Home-based programs are not used very much nowadays, but some of the center-based programs include a smaller family component.

Until recently, it was required by the Ministry of Education that a program should be proven effective (or evidence-based). But nowadays this is not a necessity. A number of programs are included in the database of so-called effective youth interventions [21]. At present, only seven of these programs have been recognized, but with the exception of one program all meet no more than the lowest level of recognition, which is "theoretically well founded." The bulk of the programs have not been evaluated empirically for their effectiveness at all. Specific studies into the effects of quality of the intervention on the children's cognitive and social-emotional development are scarce. One recent large-scale study showed no effects of quality indicators such as teachers' education and experience [27]. This may be due to the fact that there are only slight quality differences between regular provisions for young children and special intervention programs [28].

4. The Foundation of ECE

The Dutch ECE policy and specifically the belief in its success is mainly built on studies into the effectiveness of ECE conducted in the USA. Ever since the 1960s, many hundreds of studies of ECE programs have been performed. The results have been summarized in a large number of literature reviews and (statistical) meta-analyses [7,12,23,29–40]. The conclusion usually drawn is that high-quality programs may have a positive effect on not only the school career of the children, but also on their success in the labor market and on their functioning in society. In general, cognitive effects are larger than non-cognitive effects, but both tend to fade out after some time or even disappear altogether. To give an idea of the strength of these effects, the results of a recent large-scale meta-analysis [32], including a total of 123 separate studies, may be illustrative. 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 [41], 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, on average, the effects are negligibly small.

In the discussions regarding the effectiveness of ECE, so-called model programs are often mentioned. These concern a few high-quality experiments conducted in the USA. They started in the 1960s and 1970s, and the participating children were followed for decades afterwards. An example is the *Abecedarian Project* [42,43]. Fifty-seven children participated in this project; their development was compared with that of 54 children in a control group. The typical mother was African-American, was 20 years of age, had had 10 years of education, was not married, lived with her parents, and had no income. The project started in 1972, and the children (and mothers) participated from birth until they were 8 years of age, five years in preschool and three in primary school; during the preschool phase children attended the daycare center for six to eight hours per day, five days per week, fifty weeks per year . The intervention focused on the domains of knowledge, language, and behavior. Until they were 3, one staff member per three children was available, and thereafter one per six children. In addition to activities at the daycare center and school, the intervention included activities at home. The project cost $18,000 per child per year. A second famous experiment is the *Perry Preschool Project* [42,44,45]. This project started in 1962 with 58 3- and 4-year-olds growing up in a deprived black neighborhood. For two years, the children visited a pre-school for five half-days; a control group of 65 children did not go to pre-school. To a large extent, the background of the children was comparable to that of the children participating in the Abecedarian Project. There was one important 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 (these were children who 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 were all highly educated and had obtained a certificate to teach at a pre-school, in an elementary school, and in special education. During the project, one staff member

was available for every 5–6 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 long term. Because of the randomized experimental character of the studies, these results have become the ultimate proof of the effectiveness of ECE. According to various researchers this optimism is not justified, however [23,36,46]. For instance, because of demographic developments the situation regarding the availability and quality of ECE has changed dramatically; in addition, the circumstances in the USA deviate significantly from those in many European countries. Furthermore, the model projects differ considerably from regular ECE in terms of budgets, quality, duration, and intensity.

5. The Dutch Evidence

5.1. A Meta-Analysis

A recent statistical meta-analysis [47,48] integrated the results of large-scale retrospective and small-scale experimental studies conducted in the Netherlands in the period 2000–2015. This analysis included 11 separate studies with 21 different sub-studies, comprising 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 d [41]. The findings showed that the aggregated effect for none of the domains discerned deviated significantly from zero. The effect was 0.03, or—in the words of the researchers—"smaller than small." This result was based on more than 50,000 children and 60 million hours of ECE. These findings strongly differed from the positive success stories often heard in the USA. According to the researchers, possible reasons for this discrepancy have to do with differences in time, target population, and approach. For instance, in terms of social background, the children in the first American experiments differ enormously from the Dutch target groups; as a consequence, the margin for success in the USA is much greater than that in the Netherlands. In addition, the programs in the USA are much more intensive in terms of time than those in the Netherlands. Furthermore, the pedagogical quality of regular programs in daycare, preschools, and kindergartens in the Netherlands hardly differs from that in Dutch ECE programs. Another difference is that in the USA ECE center-based programs often have a strong home component; in the Netherlands, such combinations are rare nowadays.

5.2. A Large-Scale Cohort Study

Recently, the results of a unique large-scale cohort study called Pre-COOL were published [22]. According to a national newspaper, this study now finally proved that ECE indeed is effective. Closer inspection of the report, however, revealed that the results of the analyses conducted by the researchers did not support this conclusion at all. First of all, it should be mentioned that there were many methodological difficulties that made it nearly impossible to draw unequivocal conclusions. With this in mind, the following summarizes the results. In the 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 discerned here gained on the non-target children, and sometimes the differences increased. In no more than one analysis on a total of 15 did a positive effect of ECE appear, namely regarding vocabulary (+0.46, which means that ethnic minority children progressed more than native-Dutch children).

6. Conclusions

ECE in the Netherlands targets young children who do not receive enough educational stimulation in their home environment. It provides compensatory activation through special educational programs at daycare centers, preschools, and the lower grades of primary schools, and sometimes (also) at home. The aim of ECE is to prevent young children from starting formal schooling with significant

educational delays. The present ECE has been in existence for more than 15 years, and some 4 billion euros have been invested during this period. However, there is no empirical evidence that it really works; in other words, the evidential basis is still lacking. This finding is supported by the two recent large-scale studies described in this article.

Meanwhile, substantial new investments in ECE are being made by the Ministry of Education. The ministry must realize, however, that it is crucial that its policy should be evidence-based and that adequate experimental studies are therefore desperately needed. Until then, the question remains whether all the hard work done by ECE staff has been effective.

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