The Perry High/Scope Preschool Program: A Critique

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Early Childhood Education programs aim at preventing educational delays associated with socio-ethnic disadvantage in the home environment of young children. Advocates claim that such programs can be effective, provided they are of high quality. Despite the investment of enormous budgets, the educational gap between socio-economically deprived families and their wealthier counterparts is still widening. The question therefore is justified whether these claims are warranted. This article focuses on the internal and external validity of the most cited preschool program, the High/Scope Perry Preschool Project, which was carried out between 1962 and 1967 in one school in Ypsilant, MI. Are the program's effects as reported by, e.g. Lawrence Schweinhart and James Heckman, reliable and valid? And is it really possible to generalize the findings of this so-called model program to other programs, target groups, settings and conditions, as is being claimed?

Pre- and Early School Education | Early Childhood Education | educational disadvantage | Perry Preschool | High/Scope | James Heckman | generalization | external validity

1. Educational Disadvantage

Children growing up in less affluent families have less educational and societal opportunities than children with wealthy parents.[1][2] Opportunities are not only determined by innate characteristics, such as intelligence, but also by the children's environment. Indicators of the latter are parental level of education and occupation; family income; family size; family composition; immigrant status; race/ethnicity; home language; and cultural participation/lifestyle.[3][4][5][6] Such economic, social, cultural and linguistic resources are often seen as forms of capital which individuals possess and which may have an important influence on one's life chances.[7][8]

In general, Western countries agree that every child has a right to equal opportunities, that is, a child's success should not depend on the circumstances in which he or she grows up; every child should be able to realize his or her full potential.[9][10] Therefore, to combat or, even better, prevent educational delays resulting from the social circumstances children grow up in, many governments have implemented Educational Disadvantage Policies (EDP) and have since spent enormous budgets.[11] Over the past fifty years or so, an abundance of approaches and interventions have thus been developed and employed in a wide variety of settings and contexts.[12][13][14] However, despite the engagement and efforts of many, the policies' results mostly are disappointing or even absent. In fact, many recent studies show the educational gap between low and high social class children to only have widened during the last decades.[15][16][17] As a consequence of the recent COVID-19 pandemic, this gap has

further increased. This, of course, is not unexpected, as the children who have suffered most from the accompanying learning disruptions are disproportionally children growing up in unfavorable circumstances.[18][19]

2. Early Childhood Education

Probably the most prominent EPD intervention is Early Childhood Education (ECE).[20][21][22][23] ECE departs from the idea that to start as early as possible to prevent educational delays is far more effective and efficient than to try and repair delays which have already developed and which manifest themselves at a later moment in the school career. ECE includes stimulating young children (typically 2.5- to 6-year-olds) and/or their parents by deploying a variety of (compensational) educational and pedagogical activities in an institution (day care, playgroup, nursery school) and/or at home.[24][25][26] Advocates claim that ECE can be effective, provided it is of high quality.[27][22][28][29][30] In the light of the ever widening educational gap between children from high- and low-income families, the question arises, however, whether this claim is justified. If ECE really would have been successful, why then do low social class children still achieve far below their high social class schoolmates? Are ECE programs really that successful in preventing educational disadvantage in the short and in the long run?

Since their introduction, ECE programs have been the topic of many hundreds of descriptive and evaluative studies, mostly conducted in the USA. The methodological quality of these studies, especially those into the effectiveness of the programs, often leaves a lot to be desired.[31][32][33][34] To really get a valid impression of a program's effectiveness, an experimental research design with random allocation of a program's participants to an experimental and a control group is needed (i.e., the Randomized Control Trial or RCT design: which is seen as the "gold standard").[35] The number of such experimental studies is extremely limited, however. Therefore, serious doubt with regard to ECE's effectiveness remains. Despite this lasting ambiguity, proponents of ECE invariably point to three so-called model programs, which all have been carried out in the USA: the High/Scope Perry Preschool project, the Carolina Abecedarian project, and the Chicago Child-Parent Centers.[36][37][38][39] They claim that these three high-quality programs have been demonstrated to be highly effective and therefore may serve as an example for other ECE programs.

3. The Perry High/Scope Preschool Project

The most quoted ECE model program doubtlessly is the High/Scope Perry Preschool project.[40][41][42][43][44][45][46] Its goal was to improve the life chances of young at-risk children by offering them high-quality educational activities. It departed from the idea that the low scores of specific students on academic and intelligence tests were a consequence of a lack of educational opportunities and inadequate school preparation rather than a lack of innate intelligence. Perry (for short) was carried out in an Ypsilant (Michigan) public school from 1962 to 1967. It provided high-quality preschool education to 3- and 4-year-old low-SES (socio-economic status) African-American children living in a high-poverty neighborhood. About 75 percent of them participated for two school years (at ages 3 and 4), the rest for one year (at age 4). The preschool activities were provided each weekday morning in 2.5-hour sessions taught by certified teachers with at least a bachelor's degree. The average child-teacher ratio was 6 : 1.

The Perry approach emphasized active learning, in which the children engaged in activities that involved decision making and problem solving, and were planned, carried out, and reviewed by the children themselves, with support from adults. In addition to the center-based activities, the teachers also made weekly 1.5-hour home visits to each mother and child. These aimed at improving parent-child interactions by involving the mother in the educational process and help implement the preschool curriculum at home. It was believed that parental engagement and participation in their child's education would lead to higher parental confidence, expectations and aspirations, and thereby would improve their child's academic motivation and performance. The program's cost per child was estimated to be approximately $27,000 (in 2023 US dollars).

Perry was evaluated in an RCT design, starting with a sample of 123 children, 58 in the experimental (i.e., program) group that participated in the preschool program, and 65 in the control group that did not. Initial data were collected in five waves. A longitudinal study was designed to compare the progress of the program children with those who did not receive the pre-school experience. Unique of the Perry experiment undoubtedly is that the project children have been followed for several decades. A first measurement took place when the children were 3, then annual measurements followed until the age of 15, and once again around their 19th, 27th, 40th and 55th birthdays. The data collections focused on all sorts of cognitive and non-cognitive factors, such as education, work, health, and crime, and in addition on demographic characteristics of the children and their parents. In the course of years, all these data collections have resulted in a wealth of information and a series of publications.

On the basis of their analyses, Perry staff members Schweinhart et al. (pp. 5-6)[27] conclude that "high-quality preschool programs for young children living in poverty contribute to their intellectual and social development in childhood and their school success, economic performance, and reduced commission of crime in adulthood". And that "these findings extend not only to young adults, but also to adults in midlife. It confirms that the long-term effects are lifetime effects". They are of the opinion "that all young children living in low-income families should have access to preschool programs that have features that are reasonably similar to those of the High/Scope Perry Preschool program." Economist and Nobel laureate James Heckman, who performed a series of sophisticated analyses of the longitudinal data, has found that adults from the program group were much more likely to graduate high school, to make higher earnings, and to go on to college, and much less likely to commit crime. He also found multigenerational benefits of the Perry program: children of the program's participants too appeared to have benefitted. Heckman concludes: "We find some very strong effects. The children of the participants are healthier. The children of the participants are also earning more. They have better social and emotional skills, are more likely to graduate high school and go on to college, less likely to engage in the criminal justice system, so they're less likely to be incarcerated or even have ever been arrested." Elsewhere Heckman (p. 50) concludes that: "The best evidence suggests that learning begets learning. Early investments in learning are effective." and: "The role of the family is crucial to the formation of learning skills, and government interventions at an early age that mend the harm done by dysfunctional families have proven to be highly effective."[21] Heckman et al. estimated that Perry saved society $7 to $12 for every $1 invested, mostly due to reduced crime.[47] High/Scope itself reports that for every tax dollar invested, $7 are saved for taxpayers by the time the participant is 27 years old, $13 by the time the participant is 40 years old, and that there is a $16 total return including increased income to the participants.[48]

4. A Critique

In the course of years, Perry's conclusions have been criticized by several authors. Questions have been raised, for instance, with regard to the reliability and validity of the project's outcomes (their significance, size and relevance; the internal validity), and the replicability and generalizability (to other programs, countries and periods; the external validity) of the program.[49][47][34][50][51][32][52][53][54][55][56][57][46][58][59][60][31][38][41]

A first point of criticism concerns the very small sample involved and the fact that the children were not assigned completely at random to the program and the control group. At the start of the project there were only 58 children in the program group and 65 in the control group, a total of 123. As there were many variables (program characteristics, test and scale scores, demographics, etc.), there also were numerous missing values (scores on variables). This problem only increased during the measurement rounds that followed. In later rounds the total number of children first decreased to 102, and at the end, when the children were around 55 years of age, no more than 81 remained, 40 in the program group and 41 in the control group. As a consequence, complicated imputation, estimation and weighting operations were necessary, and also, the quality of the data collected declined. For instance, various variables only had dichotomous (yes/no) values and the distribution of many variables was exceptionally skewed.[47][58][60] The problem of imputing and extrapolating so many cases is that in the end it is not clear anymore what the balance and impact is of the "real" data and "artificial" (i.e., imputed, estimated, and weighted) data. In addition, when there are so few children involved and a disproportional number of analyses is conducted, it is to be expected that many of the analyses result in significant associations or differences by chance only. To give an example, in one of his publications[61], Heckman tested some 90 (ninety) hypotheses and performed around 800 (eight hundred) analyses, while the total number of observations in some cases only was 7 (seven). And it even gets worse: it is a fact that in the case of small samples effect sizes are greatly exaggerated.[62][63] To counter some of these criticisms, Heckman et al. claim that, by using sophisticated statistical methods, the effects they found remain statistically significant, even after taking into account the testing of many hypotheses in relation to the small sample size and the not entirely random assignment of the children.[60][64] This may be so, but it certainly does not address and solve all the problems brought forward.

Related to this are other problematic issues. The initial Perry data set included children who started at age 3 and children who started at age 4, and there was a total of 5 waves. For the analyses, all of these subsamples were lumped together to enable to base findings on a larger sample size.[65] The program group and the control group were matched, yes, but in the analyses, children with differences in starting age, starting year, and program duration were not discerned. Because of the small sample size this would have resulted in extremely small subsamples. The question is what the implications are this has for the generalization of Perry's findings to other ECE programs.

Related to this is the content of the program. This changed during the course of years. According to Conti et al.,[60] the learning program implemented "from 1962 to early 1965 included unit-based instruction, intentional adult-child interactive language, and a rich set of learning materials including Montessori tools, movement/dancing, and an emphasis on caregiver-planned large- and small-group activities." (p. 6). However, in the final year, "the learning

program more closely resembled the later developed HighScope curriculum including “Plan, Do, Review."" (p. 6). Also Perry's founding father, David Weikart, initially prioritized cognitive over socio-emotional learning in his reporting of the Perry program. However, in practice, Perry's teachers modified this approach and intentionally fostered the child's socio-emotional development and effectively prevented the program from being focused solely on cognition. Thus, not only were starting age, starting year, and program duration lumped together, but also the two different approaches were not discerned.

Yet another issue concerns the children's ages, which were 3 and 4 when they started in Perry. Many ECE programs also focus on younger children, often 2.5 years of age, and older children, up to 6 years of age. And researchers report marked differences between children in preschool institutions and children who visit elementary school. Perry's age-scope therefore is rather narrow, and according to critics[58] Perry's findings can therefore not be generalized to the population of children under 3 years of age and 5 years of age and older attending ECE.

Some (methodological) issues are typical of the young age of the preschoolers.[46] It has been argued, for instance, that outcomes of early education are often difficult to measure. Impacts of a program may not be detected at the end of a program, but might show up on related measures a year or two later, not because of a “sleeper effect” but because a true but difficult-to-measure impact became measurable in later years. In addition, studies of early childhood programs are particularly susceptible to bias because of the use of measures inherent to the experimental treatment, or overly aligned with the program group’s objectives but not the control group’s objectives. And then there also is the question of objectivity: Preschool measures in principle are administered individually, which can create opportunities for bias, especially if testers are the children’s own teachers or other school (or project) staff who would be aware of the child’s treatment assignment and might have motivations to make the program look good on tests. According to Schweinhart et al. measurements have all been conducted by Perry staff members.[66] However, Meunnig et al.[67] mention that, though it was not possible to blind researchers or participants during the process of allocating participants to the program or control group, researchers were blinded to the collection of all follow-up data. A last issue, concerns the testability of young children, preschoolers, and then especially low-IQ preschoolers.[68] It is a fact that young children do not develop in a lineair fashion, but typically in jumps. According to Epstein et al. (p. 1)[69] "the younger the child, the more difficult it is to obtain valid assessments. Early development is rapid, episodic and highly influenced by experience. Performance on an assessment is affected by children’s emotional states and the conditions of the assessment." The consequence is that the reliability and validity are at stake.

The researchers discerned a program group and a control group. The program group received the Perry treatment, the control group - according to Garcia et al.[70] - did not receive any treatment during the two year program duration. It is not made clear what the control children did during this long period. Obviously, they did not stay in bed all day; they must have learned something somewhere. According to Conti et al.[60] the control group was in home care or in neighborhood home-care settings with neighbors, friends, and relatives. Unfortunately, no more information is available about what they did and learn there and neither about the variation that surely must have existed within the control group.

Problematic also is that the Perry experiment was conducted at just one location, the Ypsilant public school (a single-site program, run by its developers). No questions are being raised as to the possibility that this school was unique, one of a kind. This would seriously hamper the generalization of Perry's findings. Heckman et al. have tried, through sophisticated methodological procedures, to show that the children represent(ed) a certain part of the American population, at individual level, but no word on the extent to which the Perry Preschool was representative at institutional level. Therefore, serious doubts still remain.

Perry concerns a project that was started about sixty years ago in the USA. The question is to what extent it still is relevant today. According to Garicía, Heckman and Ronda[70] (p. 1) Perry has lost little importance: “Perry is relevant today because it influences the design of current and proposed early childhood education programs. At least 30% of current Head Start programs are based on it”. Nevertheless, the question still lingers: what does all this mean for the transfer of this program to (the present situation of) other (Western) countries, where the circumstances differ significantly from the much more serious socio-economic differences in the USA? Remarkably enough, Schweinhart et al.[71] do not consider this to be a problem. Connected to this is a question about Perry's program content. The Perry approach has been applied in many other ECE situations. This creates a tension between the original program and all of these adapted versions. The question then arises at what point later programs stop being Perry.[54][50]

Another point of criticism is the staff’s educational level and qualifications. The Perry teachers were all exceptionally well-educated and had a teaching qualification for pre-school as well as primary school and even for special education. Perry was a preschool program. Then, how realistic is it to expect that other preschools have the same, clearly overqualified and therefore expensive, staff? Moreover, this raises another crucial question. Several researchers, notably Heckman and colleagues, reported significant positive effects.[72][73][49][21][74][61][70] In how far were these effects caused by the program, and in how far by the knowledge and skills of the teachers? Many studies have shown that in explaining students’ achievement teacher quality matters most.[75][76][77] So, if the Perry teachers would only have had pre-school qualifications, would there have been the same effects? In all reasonableness, probably not.

Teachers' quality is an important predictor of educational achievement. However, there is more that Perry distinguishes from other ECE programs. There was very intensive participation and guidance: the children participated 5 mornings a week with 1 teacher for every 5 to 6 children, and once a week the parents received a 1.5-hour home visit by a staff member. An incredible amount of money, time, staff, enthusiasm and - last but not least - support from the development and research team - was invested in Perry. According to García, Heckman and Ronda[78] the budget was (at the time) relatively low compared to that of similar programs. [The question, of course, is how many "similar" programs there were, probably not many. The costs of another "model program", the Abecedarian project, amounted to a staggering $108,720 per child; 2023 dollars[63].] Although difficult to compare, the Perry budget per child may have been double what is customary in other countries. To what extent can such an amount be expected to also become available for other preschool children - not to mention the fact that there are nowadays growing teacher shortages, and certainly such highly trained staff as at Perry. Thus, in this regard, comparing Perry with other programs in other settings and times seems anything but realistic.

A point that is usually barely mentioned, concerns the sample's composition; what were Perry' criteria for admission? The children were selected on the basis of demographic characteristics of their African-American parents; they grew up in poverty in a black, exceptionally disadvantaged neighborhood. One characteristic, which is not really problematized in the Perry analyses, is that half of them were raised in incomplete families, that is, they were children of single mothers. The father was absent in 47% of the Perry families; at the time the percentage of single mothers nationwide was only 14. Many studies have shown that children who grow up in a household with only one parent are worse off than children who grow up in a household with both parents, regardless of the parents' race or educational background.[79][80] Although this applied to both the program and control group, the question is what the significance of this has been for the career and life course of the children. This central role of family structure also means that ECE programs most probably will be less effective for preschools with "normal" proportions of incomplete families. In that case, the effects claimed by, e.g., Heckman and Schweinhart, will be an overestimation.

Yet another point, connected to the previous one, but without doubt much more worrisome, is that Perry has a very exceptional selection criterion, viz. the low intelligence level of all participating children. The project's children had an IQ of between 61 and 80 points (as measured by the Stanford-Binet IQ test; mean = 100; standard deviation = 16), that is, they were children with intellectual disability; such children are normally referred to special education institutions because of developmental delays and learning difficulties. All of Heckman et al.'s publications (see reference list) have been scrutinized to check whether this exceptional criterion has led the authors to make some reservations regarding the generalization of the analyses' effects.[81][82] The authors qualify them as "subnormal I.Q. children", "low-IQ children" and "low-ability" children. Characteristic of all their publications is that they do not really see this low IQ as something that deserves special attention or that would limit the generalizability of the findings. It is stated: "The Perry sample is representative of disadvantaged African-American populations", and that Perry is representative of "a particularly disadvantaged cohort of the African American population. About 16 percent of all African American children in the US had family and personal attributes similar to those of Perry participants at the time when the Perry program was conducted." and "More than 10% of African-American children born in the 2010s would satisfy the eligibility criteria to participate in PPP." Hence, it is concluded that evidence of Perry's effectiveness is the cornerstone of the *raison d'être* of all preschool programs. However, the conclusion and the caveat should be worded much more carefully and specifically, for instance: to the extent that Perry is effective, this can at best be generalized to African-American children with an intellectual disability of parents with a very low SES, half of whom are single, and who grow up in a black, particularly deprived area. This tightening is necessary because Perry did not include, e.g., white, Asian and Latino children, nor children with an IQ above 81 points. Perry has not been studied in racial/ethnic groups other than African-Americans, let alone groups with a different home language, while it is evident that a home language other than the school language can contribute to educational disadvantages. In other words, there is no evidence that Perry is effective for children of "normal" intelligence, nor for children who are not of African-American heritage or who do not speak a minority language at home. Nevertheless, Heckman et al. argue that Perry will lead to the same effects with comparable ("reasonably similar") programs. What exactly "reasonable" means is not clarified by them; nor do they make it clear whether it only concerns the program or, at the same time, also the (highly selective) target group.

There also is a peculiar link between Perry and ECE. Educational Disadvantage Policies, including ECE, are about compensating for unfavorable socio-economic and ethnic-cultural factors in the home environment, and explicitly not about genetically determined factors, such as intelligence.[83][1][12] The focus is on stimulating (or: compensating) children who cannot sufficiently develop their capacities due to their less favorable home circumstances. Without these stimulating activities, the children in question run the risk of underperforming in education. In other words: the children's (potential) capacities then are insufficiently realized. Children with an intellectual disability normally are referred to special education (or: special-needs education) institutions, where they receive education that accommodates their specific individual differences, disabilities and special needs (examples are learning disabilities, learning difficulties, communication disorders, and emotional and behavioral disorders). It seems strange that Heckman et al. do not make this distinction. The fact that children with a lack of capacities need a different approach, both pedagogically and in terms of content and materials, than children who do possess those capacities but whose socio-economic circumstances work against them, does not seem really relevant to them. The fact that Heckman et al. routinely and systematically ignore the intellectual disability of the project's children and insist that Perry is **the** example ("cornerstone", "flagship", "prototype") for other ECE programs is especially remarkable (or even inexplicable) in the light of what Perry's founding father, David Weikart, states: "The Perry Preschool Project is an experiment to assess the longitudinal effects of a two-year program designed to compensate for the mental retardation that is associated with cultural deprivation.", and "The population from which each year's sample is selected consists of culturally deprived Negroes, diagnosed as mentally retarded." (p. 173).[84] In other words, Perry was designed for a very specific group of "retarded" children - who obviously are not the regular ECE target group.

Heckman et al. claim many positive effects of the Perry program. Above, many reservations have been brought forward. According to Heckman the program children outperformed the control children on a series of relevant aspects (education, work, health, and crime). [It should be mentioned that it often is not easy to adequately interpret the effects reported. Most effects are presented in the form of "significant" differences, that is, *p*-values and "estimates". However, in the light of the small samples analyzed here, this is problematic. Normally, it is being advised (e.g., by APA - American Psychological Association) to report "effect sizes" (such as Cohen's *d)*[85], but, unfortunately, this is rarely done here.] What they fail to mention, however, is that the Perry program children still show a considerable disadvantage in terms of education, work, health and crime compared to children who do not grow up in a socio-economic disadvantaged situation.[55][86] The aim of national disadvantage policies is precisely to prevent or eliminate educational delays of target group children compared to non-target group children. That is by no means achieved with Perry - nor with most ECE programs in the USA and elsewhere, for that matter.[12]

The effect most frequently mentioned – certainly in the press – concerns the lower crime rates, and then specifically with regard to violent crime. "Crime reduction is a major benefit of the Perry program." (p. 9).[47] Here, too, the small size of the sample has its consequences. The police and court files, the completeness and reliability of which one can well question[71][87], showed that 1 experimental group participant and 3 control group participants had committed murders. In relative terms, a very large number, which in itself is a problem. The next question is how to adequately value this in terms of social costs. In fact, this amounts to millions of dollars ($4.1 million), but because this would dramatically dominate the total amount, the costs have been set to robbery in one of Heckman

et al.'s analyses, which is a fraction ($13,000) of that of a murder. That may be a nice pragmatic solution from a methodological point of view, but what does such an approach mean in practice? In addition, the sample without exception are “African-Americans”, of whom it is clear that this population group in the US is discriminated against when it comes to justice. The question therefore is how such a comparison would work out with a sample of non-blacks.

According to Garcia and Heckman,[88] a central lesson from the literature on child development is the crucial role of parenting — attachment, guidance, and support. They find that that successful preschool programs improve parent-child interactions; typical of such programs is their enhancement of home environments and improvement of parent-child interactions. "This is true even in the absence of a formal home visiting component. Energized and motivated children attending center-based programs stimulate parent-child interactions." (p. 7). Perry incorporated a 60-90-minute weekly home visit by the teacher, designed to offer individualized instruction as needed, establish teacher-parent relationship, and involve the latter in their child's development. In addition, Perry offered an opportunity for parents to participate in monthly group meetings hosted by social work staff. The family engagement part thus was substantial. Critics[58], however, argue that this does not indicate that ECE, on its own, is an effective intervention as it was combined with family intervention, which could have had equal or greater effect on the (positive) outcomes achieved. According to them, Perry cannot be used to globally endorse ECE as an intervention to improve children’s outcomes, as many ECE programs do not have a family component at all.

5. Conclusion

Advocates of the Perry Preschool Program, such as James Heckman et al. and Lawrence Schweinhart, claim that Perry has yielded many positive effects. In addition, they are of the opinion that Perry serves as a model – a flagship, a cornerstone, a prototype – for all Early Childhood Education programs, and that thus Perry's effects can be generalized to other programs. This critical review has revealed that this is not the case. In the first place, the analyses are hampered with many methodological problems, which by no means all have been solved by the researchers. It therefore is warranted to conclude that the effects probably have been overestimated. In the second place, this review has also revealed that instead of a model program, the Perry project was a rather unique project, serving an exceptional target group, and that, therefore, it is not possible to generalize its findings.

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