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A HOME INTERVENTION PROJECT FOR PRESCHOOL DISADVANTAGED CHILDREN*

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This study examined the effectiveness of a home based intervention programme which was carried out over a two year period in the homes of twelve disadvantaged children aged between two and four years A control group of twelve children was selected at the same time as the experimental group The effects of the programme were assessed after one year and again after two years At the end of the first year differences between the groups were not significant on the Stanford Binet Intelligence Scale At the end of the second year, differences on the same test between the groups were again not significant Neither were significant differences found in mothers reported methods of dealing with children's questions or in their reported control techniques (both based on interview data)

The fact that a disproportionate number of children from low socio-economic groups experience educational failure has been a primary concern of educators for over fifteen years Of the many terms used to describe this problem 'educational disadvantage' seems the most appropriate in an educational context It is probably true to say that the educational failure of the disadvantaged has been generally perceived as resulting from the fact that disadvantaged children possess personal characteristics which are disfunctional in a school setting It was also generally felt to be the case that these personal characteristics have their origin in the environment encountered in the preschool years, although until relatively recently, few attempts were made to specify the precise features of the disadvantaged home which might contribute to school failure Accordingly, early efforts at offsetting the problems of the disadvantaged were designed as programmes to compensate for the absence in the child of character istics useful for school success Since the mid-1960s there had been increased interest in the homes of the disadvantaged and research has

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attempted to identify aspects of home environments which might account for school failure Similarly, many programmes for the disadvantaged, while continuing to operate largely during the period of early childhood, have been implemented in a home rather than in a school setting

Research to date allows us to make a number of tentative statements about ways in which disadvantaged homes appear to differ from middle class ones In such homes, there is less personal interaction between mother and child (10, 11, 20) and the child is less likely to receive explanations from his parents for things that occur in the environment (22) The child is not encouraged to discriminate characteristics of the environment, to note similarities, differences and relationships (10), his language models are out of tune with the models in operation in schools (2) and books and other materials which enhance language development are absent (7, 18) Further, the home of the disadvantaged child tends to be more status-oriented than person-oriented, meaning the child's behaviour is more likely to be controlled by status rules rather than by attention to the individual characteristics of a specific situation (1, 7) Finally, parents of disadvantaged children are not well attuned to the cognitive level of their children (8) It is concluded that what the disadvantaged child learns at home and the style in which he learns may be in conflict with the demands of formal schooling

Home-based intervention programmes can, in these terms, be seen as an attempt to reduce the conflict between home and school by altering significant aspects of the hidden curriculum of disadvantaged children, in order to prepare them for the work of the school Several such programmes have been undertaken (5, 6, 12, 14, 15, 16, 24, 28) These have varied considerably in the way subjects were selected, in the characteristics of personnel employed to implement the programme, in the techniques used to alter the child's environment, in the age at which intervention was commenced and in the length and intensity of intervention The studies report varying degrees of success on a variety of measures A general implication of the studies drawn by several investigators was that intervention should take place at the earliest possible age and that specific structured attempts to alter the child's environment were likely to be more successful than general efforts to involve parents in their children's education

The present study was designed to examine, in the form of a pilot experiment, the effectiveness of a home-based intervention programme for disadvantaged preschool children living in a provincial town in Ireland There were two broad objectives of the programme Firstly, it was hoped

to encourage mothers to spend more time with their children – playing, teaching, reading, or simply talking While this objective is concerned with the quantity of mother-child interactions, the second deals with attempts to alter the quality of interaction These attempts include demonstrating to mothers alternative techniques for controlling their children, providing the mothers with experiences that would make them more attuned to the cognitive level of their children and demonstrating ways of drawing children's attention to the environment – for example, to the similarities, differences and relationships between objects. Both objectives were designed to help mothers facilitate the development of school related skills and concepts in their children

In the evaluation of the programme, it was decided to seek for effects both at the level of the child and at the level of the mother At the child level, the Stanford Binet Intelligence Scale, Form L M (27) was used Although subject to a number of criticisms (17, 26), the test in normal circumstances remains a good predictor of scholastic achievement It is not satisfactory to limit the evaluation of home based programmes to the children involved, since the focus of such programmes is usually the mother-child dyad If effects are observed at the level of the child, it may be that they result from direct tuition of the child by the home-teacher or by some other aspect of the programme other than the mother's involvement On the other hand, if the programme seems to have had no effect on the children, it may well be that changes have been brought about in the mothers' behaviour but that sufficient time has not elapsed for these changes to be reflected in improved performance by the children

Although it is clearly desirable to include some assessment of the mother in evaluations of home programmes, such assessment gives rise to a number of major problems Firstly, in most programmes, including our own, the objectives of home intervention in relation to the mother are not precisely stated At most, we can say that it is hoped that the mother, by observing the home-teacher working with the child, will acquire new ways of teaching the child and, in a more general way, will restructure her patterns of interacting with the child However, because we know so little about the dynamics of the home-teaching situation, we can rarely be more specific than this In the absence of a clear statement of objectives, decisions as to what to include in an evaluation are of necessity somewhat arbitrary A second difficulty in this respect is the absence of any well established procedures for examining the interactions of mothers and children

In spite of these reservations, we felt it was necessary to make some attempt to include some assessment of the mother in the present evaluation Two options existed The first was to set up a situation in which the mother and child would interact freely and a recording would be made of what happened The second option was to employ a technique in which the mother is asked to respond to a series of hypothetical situations, which might be posed by a child (2, 9) Although open to a number of criticisms, this method has been found quite successful and has the obvious advantage of being easier to administer and score than the alternative For the purposes of the present evaluation the latter strategy was adopted and an interview schedule composed of two sets of questions was constructed

The first set of questions were those used in a study carried out by Robinson and Rackstraw (22) The mothers were asked how they would respond if their child asked them a number of questions requiring information or explanations Robinson and Rackstraw compared the responses to these questions of lower working class and middle class mothers and found that, in general, lower working class mothers were more likely to evade the questions, tending to give less accurate information in their answers They were less likely to point out similarities and differences between objects and events In addition, when responding to questions requiring an explanation ('why' questions), lower working class mothers often simply 'rephrased' the question as a statement – 'because they do', or made simple appeals to regularity – 'because they have always done' Middle class mothers, on the other hand, gave more elaborate answers referring to antecedents and consequences of events and they also made liberal use of categorization and analogy In general then, while the working class mothers seemed to be providing answers with very little content for the child, middle class mothers were providing answers which represented the world as a ' system of objects and events related and organized in space and time (21)'

The second set of questions probed how mothers would respond to various disciplinary problems presented by a child The precise questions were taken from a study by Cook Gumperz (4), who also reported large class differences in answering the questions Working class mothers tended to rely on what were termed 'imperative' tactics (these included non-verbal acts, such as smacking as well as brief commands, e g , 'Get up these stairs' and unelaborated statements, such as 'I would make him') Middle class mothers, on the other hand, were more likely to use personal appeals, which specified the consequences of the child's misbehaviour, often in terms of the feelings of others There was no difference between the two

groups in the relative use of what Cook-Gumperz calls positional appeals – the specification of behaviours appropriate to the child's status, e g , 'Little boys of six go to bed at seven o'clock'

With the findings of the two studies (4, 22) in mind, we set about hypothesising differences between experimental and control group mothers In the case of the control group we predicted a pattern of responses similar to that of the lower working class groups in the original studies In relation to the experimental group it was more difficult, although we had reason to expect some deviation from the working class pattern, we were not clear as to which might be the most fruitful areas in which to look for differences We therefore decided to carry out an open-ended analysis with a view to picking up any differences which might emerge

THE HOME CURRICULUM

The use of the term curriculum in this context refers to the whole process of the three way interaction between mother, child and home teacher It refers not only to the actual teaching agenda (i e , the activities included in the lessons) but also to the attempts to alter aspects of mother-child interaction From the point of view of the child, the curriculum was centred around four basic areas perceptual cognitive activities, imitative play, manipulative activities and language Although, in practice, specific activities tended to be an admixture of these four areas, from the point of view of description, the areas can be considered separately

Perceptual cognitive activities Activities in this unit were built around a number of strategies, which Piaget and other writers feel are necessary for the child to impose an order on his environment These included classification, seriation and one to-one correspondence

(i) Classification The children were required to categorize objects on the basis of physical properties (e g , colour and shape), on the basis of their function (what the object is used for) and on the basis of membership of certain clearly defined classes (animals, food, etc) In the early stages, the emphasis was on discrimination between and matching of objects Initially, only two categories were used in formal classification exercises, later the number of categories was increased and, towards the end of the programme, tasks involved classification on the basis of more than one criterion

(ii) Seriation This involves ordering a set of objects along a dimension on

which they vary The most frequently used dimension was size

(iii) One to-one correspondence Activities involved the ordering by the child of a row of objects in a specified order This strategy is felt to be important since it would appear to be an essential stage in the develop ment of number concepts and leads directly to the notion of cardinal equivalence

Manipulative activities The children were encouraged to handle and explore all the materials which were used in the lessons As they did so, they presumably learned something about the qualities and characteristics of the objects Wherever possible, the discoveries made by the children during these activities were used to form the basis of other activities For example, the children were presented with a set of objects some of which could roll and others which could not This activity was then developed into a classification exercise in which the objects were sorted on the basis of whether or not they could roll Exploration of objects was also used to acquaint children with positional concepts such as over, under, behind, etc Art activities like paper collages, modelling, and play dough, which were frequently included in lessons, can also be considered manipulative activities

Imitative play This is believed to be important for the development of language and representational skills by a number of writers (e g , 19, 25) In this project, activities concerned with imitative play were mainly in the form of pretending games, for example, the child imitated the sounds and movements of animals, trains and cars Teachers also dramatized stories and encouraged the child to take part

Language The specific language activities used were mainly concerned with increasing the child's repertoire of speech events (both spoken and heard) The child was taught to label objects in the environment and to identify and name pictures in books He was also expected to follow instructions of varying complexity A number of other strategies were employed to enhance language development exposing the child to a variety of language patterns, by having the teachers frequently explain personal actions and external occurrences, reinforcing the child's verbal responses and giving immediate answers to the child's questions, and trying to ensure that the child used language to achieve his objectives

In an attempt to integrate the various units of the curriculum, a specific strategy was used, as far as possible, in devising lessons This involved four

separate aspects Firstly, children were given the opportunity to explore materials and discover their characteristics Secondly, the children were required to structure these materials, for example through classification or seriation, employing what they had learned about their characteristics Thirdly, a problem was presented to the child, the solution of which involved making use of what the child should have learned The final aspect of the strategy prescribed that a steady stream of verbal exchanges should accompany all activities

So far, the curriculum has been viewed from the point of view of the child A major portion of the treatment was, of course, directed at the mother To involve the mother and attempt to alter her means of dealing with her child, a number of techniques were used Firstly, all activities were designed to allow for participation by the mother Secondly, activities were developed so that they could be replicated and modified by the mother outside the lessons And finally, three way conversation between the mother, the child and the teacher was encouraged This created a setting in which a mother was required to answer her child's questions rationally and to develop a topic in a logical fashion

METHOD OF EVALUATION

Subjects

Staff at the Social Service Centre in the town in which the study was carried out supplied a list of 26 children aged between 2 years 0 months and 3 year 6 months whom they regarded as living in disadvantaged homes Twelve of these children were randomly assigned to an experimental group and a further 12 to a control group The remaining two children were held in reserve as possible replacements There were five boys and seven girls in each group The mean age of the experimental group at the commencement of the programme was 2 years 8 months, that of the control group was 3 years 1 month The mean number of children in the families of the experimental group was 4 6, the mean number in the control group, 5 5 Six of the fathers of the experimental children and five of the control children were unemployed There is little doubt from the evidence available that the children in the two samples did in fact come from disadvantaged homes The families in the project were characterized by low occupational level, poor housing and a heavy reliance on financial subvention from the state and from local charitable agencies

After the selection of the samples, the twelve experimental group families

were contacted and asked to participate in the programme. One of the mothers was unwilling to take part and so a replacement family was included in the experimental group. In the course of the first phase of the programme, one of the families moved well outside the catchment area of the project and a continuation of the home visits proved impossible. At the beginning of the second phase, one mother reported that she would be unable to continue to participate. This brought the number of families receiving home visits in the second year to ten.

Many of the children in the project began primary school in the course of the second year of the project. By the time final testing was carried out at the end of the programme, the mean length of enrolment in the school for children in the experimental group was 2.5 months, while that for children in the control group was 5.7 months. It is clear that the control group enjoyed a marked advantage in terms of school experience over the experimental group, having spent on average a longer period in the primary school (presumably due to the fact that they were older). It may also be pointed out that a number of the children (five in the experimental and three in the control group) were only just beginning school at the time of the final testing. It is conceivable that this factor could have adversely affected test performance. Finally, it should be noted that three of the experimental group children were attending school while the programme of home lessons was in progress.

Instruments

(i) The Stanford-Binet Intelligence Scale (Form L-M) (27), a test of general intelligence, was administered to the children.

(ii) The interview schedule for mothers was made up of two parts. The first, devised by Robinson and Rackstraw (22), involved asking the mothers how they would deal with a range of questions their children might ask. They were asked to imagine their child asking each of seven questions and to indicate what reply they would give. The seven questions were (i) Why does Daddy shave? (ii) Where does the water in the tap come from? (iii) Why do leaves fall off the trees? (iv) Why did Mrs Jones cry when Johnny went into hospital? (v) Where do I come from? (vi) Who is the man who brings the milk? (vii) Why do I have to go to school in September?

The second part of the interview consisted of questions in which mothers were asked how they would respond to various disciplinary problems presented by the child. The questions, which were taken from a study by

Cook-Gumperz (4) were as follows What would you say or do (i) if you thought it was time _____ went to bed but he wanted to watch something on T V ? (ii) if _____ was not watching what he was doing and spilt tea over the table cloth? (iii) if _____ brought you a bunch of flowers and you found out that he had got them from a neighbour's garden? (iv) if your husband forgot to bring _____ a present that he had promised and _____ would not talk to his father all day? (v) if _____ said 'I do not want to go to school today', and he is not ill or anything, but just does not want to go? (vi) if _____ was shopping with you and when you got home you found he had picked up some little thing from the counter without you noticing?

The basic educational procedure was a weekly hour long visit by a teacher to the home of a child Some of the time was spent actually teaching the child, however, the mother was expected to remain in the room throughout the lessons and participate in the activities It was hoped that in this way she would learn ways of teaching her child school-related skills and concepts

There were two phases in the study During the first, a series of 20 lessons was implemented (between February and July 1973) The second phase began in February, 1974 with the same children, this phase included 18 lessons and concluded in July 1974

There were nine home teachers in all, eight of these were primary school teachers, and one was a play therapist Two of the teachers were unable to participate in phase 2 of the project

The Stanford Binet Intelligence Scale was administered to each child in both experimental and control groups at the end of Phase 1 and again at the end of Phase 2 The interviews were conducted by psychologists with the mothers of children in both groups at the end of Phase 2 In most cases, the interviews were carried out in a room adjacent to that in which the final Stanford Binet testing was being carried out In some cases, however, it was necessary to carry out the interview in the home In all cases, interviews were recorded and typed manuscripts were later made of the recordings and a content analysis carried out

RESULTS

Effects at level of child

Mean scores on the Stanford Binet Intelligence Scale for experimental and control groups are presented in Table 1 At the first testing, there

TABLE 1

STANFORD BINET IQs FOR EXPERIMENTAL AND CONTROL GROUPS AT END OF EACH PHASE*

	First testing		Second testing	
	Experimental	Control	Experimental	Control
M	89 36	87 89	86 80	93 80
SD	9 10	8 91	10 74	17 29
N	11	9	10	10

* At the time of the first testing two control group mothers refused to allow their child to be tested At the second testing, one mother refused to co-operate On both occasions one control group child proved untestable

was a slight difference in favour of the experimental group However, at the second testing the situation was reversed, with the control group having a mean advantage of seven IQ points It should be noted that although the difference in favour of the control group appears large, it is not statistically significant (A student's t test for independent samples yielded a value of $t = 0\ 075$) The absence of a statistical difference probably results to a certain extent from the fact that the samples are so small More important, however, may be the fact that the variance for the control group is larger than that for the experimental group Again, however, we are prevented from drawing any firm inferences since the F-value for a test of homogeneity of the two sample variances (23) was 2 5, which is short of the value required to indicate a significant difference at the 05 level

Effects at level of the mother

Dealing with children's questions The responses of mothers were categorized in a number of ways (cf 22) In particular, four factors were taken into account in analysis the extent to which the mother evaded answering her child's question (e g , explicit refusal, referring the question to someone else, deferring an answer until the child is older), the accuracy of the response (an untruth or over-generalization), the number of units of information in the mother's response (for example, the response to the question 'where does the water in the tap come from? ' could involve varying amounts of information, such as source of water, reservoirs, piping, pumping, and storage facilities), and the mode of the mother's response which applied to

answers which involved explanations Ten categories of explanation were considered appropriate to classify modes of response, these included causal explanations, appeal to authority (e g , 'because it's the law'), appeal to regularity (e g , 'leaves fall every year') and repetition of a question as a statement (e g , 'because they do')

Differences between experimental and control mothers in terms of type of response provided were slight and statistical analyses of the incidence of different types of response did not reveal any significant differences between groups

Mothers' reported control techniques Each response was evaluated in four ways (cf 4) We sought for *rationale* statements which related to mothers' justification for a control technique, the rationale might be positional (e g , referring to a status characteristic of a child, such as age) or personal (e g , referring to a child's individual feelings, needs or abilities) Secondly, we sought for *strategy* statements, which were concerned with the actions a mother takes to control the child Thirdly, we were concerned with *appeals* which referred to the mother's reliance on linguistic control and which again might be either position or person oriented And finally, *situational comments* were noted, these dealt with the frequency with which a problem was seen as occurring and the direction of blame

There were very few instances of rationale or situational comments in the mother's answers A sufficient number of answers involving strategies and appeals were obtained to carry out more detailed analyses The most striking finding was the large extent to which all mothers used punishment as a strategy There was some indication that punishment was less favoured among experimental group mothers than among the control group (The difference, however, was not statistically significant) Analyses also indicated that the two groups were similar in their use of linguistic control (appeals) It may be noted that the majority of appeals, for members of both groups, were position-oriented rather than person-oriented

DISCUSSION

The purpose of the present study was to examine the effectiveness of a home-based intervention programme for disadvantaged children and their mothers We were unable to show that any marked advantage accrued to the participants in the programme, comparison of experimental and control group children and mothers on a number of variables at the end of the

programme revealed no statistically significant differences between the groups

The relative decline of the experimental group and the relative improvement of the control group during the second phase of the study was a feature of our findings on the cognitive development of the children One possible explanation comes from a hypothesis which has been suggested by Bronfenbrenner (3) In a review of school based and home-based intervention, he noted a tendency for the Stanford Binet quotient of disadvantaged children to rise sharply after the child's first encounter with what he calls a 'broadening' educational experience, irrespective of whether this experience was encountered in the home or at school and irrespective of the age at which the experience occurred As we have noted previously, many of the children in the present study entered primary school during the second year of the project For members of the control group, this was their first encounter with a so-called 'broadening' educational experience Members of the experimental group had, on the other hand, taken part in the first phase of the home programme and entry to school was for them, therefore, a second 'broadening' experience

We also have to consider the possibility that the two groups were not equivalent at the beginning of the investigation Our numbers were small and randomization with such numbers may not be very reliable Certainly, the groups differed in age This may have had the effect of producing conditions, other than the experimental treatment, which differentially affected the group during the period of the investigation One such obvious condition was the different school experiences of the groups to which we have already made reference The fact that the control group, on average, attended school for a longer period than the experimental group may have contributed to their relatively good performance on the Stanford-Binet test at the end of the project

There is another possible reason why the experimental group did not perform better on the final testing This relates to the fact that the second phase of the programme might have been less effective than the first First of all, it had been hoped that Phase 2 of the programme would include a more structured attempt at influencing and directing the teaching style and interaction patterns of the mothers and that this would have been a logical extension of what had been done in Phase 1 Any attempt to do this, however, would have required additional personnel, who were not available Secondly, the entry to school of some of the children in the group

presented a very large problem for home tutors The school going children were very often too tired to participate in the home lesson activities The mothers too seemed to see the home activities, which they regarded as 'games', as less relevant now that their children were going to school, where they expected them to be taught very specific skills relating to reading, writing and number This may also have been true to a lesser extent of mothers whose children were not yet attending school but who were within a few months of beginning Finally, as time went on, there was a reduction in the level of enthusiasm which the mothers showed for the programme Although attitudes remained favourable throughout, it is probably true to say that they were less positive during Phase 2 than during Phase 1 Factors which may account for the drop in enthusiasm include the wearing off of the novelty effect and the discontinuity created by the break between Phases 1 and 2 of the programme

Effects of the programme on mothers, as well as on children, were weak There were some trends which might have indicated a programme effect, such as the lesser reliance of experimental mothers as compared with control mothers on punishment as a way of controlling their children, but differences between groups never reached a level of statistical significance In general, the findings for both groups of mothers were in line with those reported in other studies for mothers in disadvantaged areas

Too great a reliance should not be placed on these findings as an evaluation of the home intervention approach for disadvantaged children Apart from the problems we have considered above, it is obvious that the treatment which was evaluated could not, by any stretch of the imagination, be regarded as intensive It is perhaps too much to expect that a series of 38 hourly lessons spread over two years should have a striking impact either on mother child interactions or on the cognitive development of children There is no reason to believe, on the basis of our study, that more intensive intervention procedures would not produce more strking effects

One positive conclusion from our study is the indication that the home intervention approach, in principle, is a feasible proposition This is not to say that the intervention reported in this paper did not run into difficulties or that problems would not remain to be solved if further intervention programmes were to be undertaken To conclude this report, some of the problems encountered in the implementation of the project we have described may be considered Firstly, teachers had to face the

problem of attempting to tailor lessons to the individual characteristics of subjects and their circumstances While children in the group probably did not differ greatly in their patterns of ability (cf 13), they certainly varied in their interests, in their willingness to cooperate, and in their level of general ability Mothers also differed along similar dimensions and, since the range of home circumstances was large, it was extremely difficult to develop a set of activities that would be suitable for even a majority of children To an extent this problem was lessened, if not entirely solved, in the later stages of the programme by allowing individual teachers to select about half of the activities for each lesson The need for even greater flexibility in the design of programme activities may be indicated

Secondly, throughout the project, there was concern about the adequacy of the treatment aimed at the mother, it soon became clear that a treatment which relied solely on mothers learning through observing a teacher interact with the child did not fully utilize the level of cooperation and enthusiasm which the mothers were clearly exhibiting This raises the possibdty that contact with mothers at a time when the children are not about would improve the effectiveness of home programmes

Thirdly, during the project the problem of providing teachers with a means of evaluating their own work arose Most of the teachers worked with only one family and therefore had few criteria by which to judge their progress This problem was almost certainly exacerbated when teachers took responsibility for development of part of the lessons A scheme introduced in Phase 2 of the programme whereby teachers attended the lessons of their colleagues, was found to be useful, but did not overcome the problem in full

The actual mechanics of carrying out the programme in the homes of the children did not present any great difficulties It had been anticipated that it might be difficult to acquire and maintain the cooperation of parents in the experimental group, but this did not turn out to be the case Although there was a certain lessening of enthusiasm over the two years, it is safe to say that the level of co operation among parents was high at all times It was also felt at the outset that the physical conditions in the home might be unsuitable for the type of treatment which was envisaged Again, although there was in some cases an absence of furniture and materials which might have enhanced the lessons, no insurmountable obstacles were encountered in this respect The presence of other children at the lessons was another factor which might have created problems However, although

other children were frequently present at lessons, this did not constitute a significant difficulty, in fact, a number of teachers felt that the presence of other children could contribute to the success of a lesson

While our findings in this study do not demonstrate advantages of the home based intervention strategy which we examined, the recognized importance for child development of the preschool period suggests that further work in this area is warranted Should there be further development of the home intervention approach, there is little doubt that a more intensive approach than the one which we examined will be required On the basis of our experience in the present investigation, we have every reason to believe that such programmes, if undertaken, will not give rise to any serious difficulties in their implementation

REFERENCES

1 BERNSTEIN B Language and social class *British Journal of Sociology,* 1960 *11* 271 276

2 BERNSTEIN B *Class codes and control (Vol 1)* London Routledge and Kegan Paul 1971

3 BRONFENBRENNER U Is early intervention effective? In Guttentag, M , and Struening E L (Eds) *Handbook of evaluation research* Beverly Hills California Sage 1975

4 COOK-GUMPERZ J *Social control and socialization A study of class differences in the language of maternal control* London Routledge and Kegan Paul 1973

5 GORDAN I J *The infant experience* Columbus Ohio Charles E Merrill 1975

6 HEBER R and GARBER H An experiment in the prevention of cultural familial mental retardation Proceedings of the Second Congress of the International Association for the Scientific Study of Mental Deficiency Warsaw August 25 September 2 1970

7 HESS R D and SHIPMAN V C Early experience and the socialization of cognitive modes in children *Child Development* 1965, *36* 869 886

8 HESS R D and SHIPMAN V C Cognitive elements in maternal behavior In Hill J P (Ed) *Minnesota symposia on child psychology (Vol 1)* Minneapolis University of Minnesota Press 1967

9 HESS R D SHIPMAN V C BROPHY, J E and BAER R M The cognitive environments of urban preschool children University of Chicago 1969 (ERIC Document Reproduction Service No ED 045 180)

10 HUNT, J McV Has compensatory education failed? Has it been attempted? *Harvard Educational Review* 1969 *39* 278 300

11 KAGAN J S Inadequate evidence and illogical conclusions *Harvard Educational Review* 1969 *39* 274 277

12 KARNES M B STUDLEY W M WRIGHT W R and HODGINS A S An approach for working with mothers of disadvantaged preschool children *Merrill Palmer Quarterly* 1968, *14*, 174-184

13 KELLAGHAN, T and GREANEY B J A factorial study of the characteristics of preschool disadvantaged children *Irish Journal of Education* 1973 *7* 53 65

14 KLAUS, R A , and GRAY, S W The early training project for disadvantaged children A report after five years *Monographs of the Society for Research in Child Development*, 1968 *33* (4, Serial No 120)

15 LEVENSTEIN, P Cognitive growth in preschoolers through verbal interaction with mothers *American Journal of Orthopsychiatry* 1970 *40* 426-432

16 LEVENSTEIN P and SUNLEY R Stimulation of verbal interaction between disadvantaged mothers and children *American Journal of Orthopsychiatry*, 1968, *38* 116 121

17 McCANDLESS, B R Review of Stanford Binet Intelligence Scale In Buros O K (Ed) *The fourth mental measurements yearbook* Highland Park New Jersey Gryphon Press 1953

18 OLIM E G , HESS, R D and SHIPMAN, V C Role of mothers' language styles in mediating their preschool children's cognitive development *School Review*, 1967 *75* 414-424

19 PIAGET J *Play, dreams and imitation in childhood* New York Norton, 1951

20 RADIN N , and KAMII C K The child rearing attitudes of disadvantaged negro mothers and some educational implications *Journal of Negro Education*, 1965, *34* 138 146

21 ROBINSON W P The dialogue of deficit and difference in language proficiency *International Journal of Psycholinguistics* 1975 *3* 27-40

22 ROBINSON, W P and RACKSTRAW, S J *A question of answers (2 vols)* London Routledge and Kegan Paul, 1972

23 RUNYON, R P and HABER A *Fundamentals of behavioral statistics* Reading Mass Addison Wesley, 1971

24 SCHAEFER, E and AARONSON, M Infant education research project Implementation and implications of the home tutoring program In Parker R K (Ed) *The preschool in action* Boston Allyn and Bacon 1972

25 SMILANSKY S *The effects of socio-dramatic play on disadvantaged preschool children* New York Wiley, 1968

26 STODOLSKY S Defining treatment and outcome in early childhood education In Walberg H J , and Kopan, A T (Eds) *Rethinking urban education* San Francisco Jossey Bass 1972

27 TERMAN L, M and MERRILL M A *Stanford Binet Intelligence Scale Manual for the Third Revision Form L M* ,London Harrap 1961

28 WEIKART D P , and LAMBIE D Z Preschool intervention through a home teaching program In Hellmuth J (Ed) *Disadvantaged child Headstart and early intervention (Vol 2)* Seattle Washington Special Child Publications, 1969