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COGNITIVE EFFECTS OF PLAYGROUP ATTENDANCE *

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Seventy two children who attended eight pre school playgroups for disadvantaged children in Belfast were compared with seventy two who attended the same playgroups exactly twelve months later and with a control group of seventy two non attenders Retests six months after initial testing on the Peabody Picture Vocabulary Test and the Columbia Mental Maturity Scale when the mean ages of the three groups were 50 49 and 49 months respectively, revealed significant differences between attenders and non attenders on both measures Between playgroup and between-cohort differences were not significant These effects which occurred in the context of a traditional nursery curriculum, were attributed to the variety of activities in which the children were encouraged to engage and the warmth, interest and participation of the playgroup leaders

The pre school playgroup originated in New Zealand and was introduced into the British Isles some twenty years ago A playgroup needs no more than a space, often a church hall, approved by the local health authority, for the use of children from 2½ to 5 years of age, together with the presence of a number of interested and capable women who are prepared to organise and supervise the sessions Frequently, these supervisors, or playgroup leaders, are a succession of mothers with children in the appropriate age range and hence, the fortunes of the groups tend to fluctuate

However, the involvement of such bodies as the National Society for the Prevention of Cruelty to Children and the Save the Children Fund, and the emergence of a number of groups which have flourished to the extent of employing staff and achieving the stability of support grants, indicates an acceptance of the view that attendance can benefit a young child Perhaps, because this belief is so strong and so readily accepted by parents involved in playgroups, and by psychologists and educationalists alike, few have stopped to question the extent or nature of this beneficial effect or how it is

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achieved This is the more surprising in view of the vast and growing literature concerned with pre school provisions for 4 and 5 year olds in the United States of America (reviewed in detail in 1, 10, 12) which has been augmented by research in Israel (14) and during the past few years by studies in Britain (5) and in Hungary (8)

Investigations into the effects of pre school provision in the United States have found that these varied from the apparent failure of the Head Start programmes (16) to the success of a number of highly structured programmes in achieving certain clearly defined changes in measured cognitive abilities (e g , 2, 3)

In Britain the Educational Priority Area Programme and the National Foundation for Educational Research Pre school Project have recently made available some research concerned with differences between the verbal, perceptual and spatial abilities of children experiencing specially introduced structured programmes in nursery schools and playgroups and other children exposed only to the 'traditional' nursery curricula Unfortunately, it is difficult to interpret these findings because of the rapid turnover of the children in the groups For example, the Birmingham EPA Pre school Project which failed to find significant results, suffered an attrition rate of more than 35 per cent over one year and only the most strenuous efforts to trace leavers prevented the wastage from being much higher (17, pp 87 110)

Perhaps owing to these difficulties, there is a paucity of published research (especially of an evaluative nature) in Britain and very little is known about the cognitive effects of playgroup attendance The purpose of the present study, therefore, is not so much to look for 'gains' over time, which might be related to the introduction of particular programmes, but rather to compare attending children with non attending controls in order to investigate two questions (i) does playgroup attendance produce measurable effects on the cognitive abilities of children? and (ii) are these effects playgroup or cohort specific?

METHOD

Subjects

A sample of 8 playgroups stratified by size, organising body and geographical location was selected from 27 in Belfast which were in receipt of government grants in December 1972 and which were organised by one of the three voluntary bodies concerned with playgroups in the city In these playgroups the length of each term coincides with that of the primary schools and the morning session is of three hours duration Ten children were then chosen from each for participation in the study Selection was random, except

that any child known to be suffering from mental or physical handicap or whom the Denver Developmental Screening Test (7) indicated might be suffering from a developmental disorder was excluded It was not possible to have equal numbers of boys and girls in each subsample of 10, since playgroups seldom presented equal numbers from which to select, and hence, the sample comprised initially 41 boys and 39 girls

Few children spend more than a year in a playgroup so the population is almost entirely renewed in the course of each 12 months Therefore, it was possible to choose 10 children in the same manner from each of these 8 groups, 12 months after the first sample had been selected The initial composition of this second sample was 33 boys and 47 girls

The non-attenders or control children were selected on the advice of health visitors and welfare workers from the same geographical and socio economic backgrounds as the playgroup children As there is considerable pressure for places in many of the playgroups, it was possible to select non attending children from amongst those whose mothers wished them to have this experience but for whom no places existed Since preference was usually given to the older children amongst those who applied and since the majority of playgroups were established only a short time before the study commenced, the first cohort proved to be slightly older than the non attending children and also than the second cohort Initially, the sample comprised 46 boys and 34 girls

Procedure

The children were tested on the Peabody Picture Vocabulary Test (PPVT) and the Columbia Mental Maturity Scale (CMMS) and retested on the same measures 6 months later Each playgroup child was tested individually during a morning playgroup session and each control child in his own home One of the difficulties found by all researchers working with pre school children and especially with those which may be categorised as 'deprived' is the high wastage which occurs between the initiation and the subsequent stages of the investigation It was anticipated, therefore, that not all 240 children would be available for retesting In the event, 73 children from the first playgroup sample and 74 from the second together with 74 control children were retested, which is a loss rate of 9 per cent For purposes of analyses all groups were reduced to 9 by random discard from those which were intact and results from 216 children were available for analyses The mean age at retest for the first playgroup sample was 50 months (range 47 59), for the second, 49 months (range 47-58), and for non attenders, 49 months (range 47-61)

RESULTS

To examine between-playgroups differences and the effects of attendance, analyses of covariance (playgroup x attendance) were carried out on the Peabody Picture Vocabulary Test and the Columbia Mental Maturity Scale data in which the results of the first testing provided the covariate and those of the second the variate Raw scores were used for these analyses since the use of the American norms presented certain difficulties For example, some scores fell below the range for which norms were available Analyses revealed no differences between playgroups on either vocabulary or reasoning ability However, significant differences in favour of attending children emerged on both measures (Peabody Picture Vocabulary Test $F = 37\ 58$, $df = 1,127$, $p < 0\ 005$, Columbia Mental Maturity Scale $F = 62\ 37$, $df = 1,127$, $p < 0\ 005$) Re-calculation of F ratios to allow for regression artifacts (4, pp 185 210) did not affect these levels of significance None of the samples revealed any significant differences between the scores of boys and of girls on either measure

TABLE 1

MEANS AND STANDARD DEVIATIONS ON THE PEABODY PICTURE VOCABULARY TEST AND THE COLUMBIA MENTAL MATURITY SCALE FIRST AND SECOND TESTINGS (N 72 for all means)

	First testing		Second testing	
	Mean	SD	Mean	SD
PEABODY PICTURE VOCABULARY TEST				
Attenders Year 1	30 88	12 26	46 95	14 50
Attenders Year 2	28 72	10 56	42 46	12 97
Non-attenders	29 21	11 13	36 10	12 99
COLUMBIA MENTAL MATURITY SCALE				
Attenders Year 1	24 93	8 19	35 31	13 18
Attenders Year 2	24 22	10 47	31 03	10 36
Non-attenders	18 33	9 04	23 44	7 22

To examine between-playgroups differences more efficiently and also between-cohort differences analyses of covariance (playgroup x year) were applied to Peabody Picture Vocabulary and Columbia Mental Maturity data obtained from the playgroup samples in consecutive years No significant differences were found on either measure Means and standard deviations for the first and second testing are given in Table 1

DISCUSSION

That significant differences did not emerge between playgroups or between cohorts may be attributed to the framework within which the groups operate Each playgroup is run by a voluntary organisation which employs a full time pre school playgroup organiser who visits the groups to advise and assist the leaders, provides seminars, refresher courses and a channel of communication Hence, there is considerable uniformity of leader behaviour between the groups and a measure of consensus regarding aims (which include the facilitation of the intellectual and social-emotional development of the child) and the imple mentation of these aims by means of a traditional nursery school curriculum

The emergence of significant differences in vocabulary and in general reasoning ability between attending and non attending children is especially interesting since these occurred in the context of a traditional pre-school programme No direct teaching or drill takes place in the playgroups The children select their acitivies from amongst the variety available and a warm, accepting atmosphere is provided However, playgroup leaders do not see their role as purely that of a passive supervisor or child minder They participate in the activities of the group sometimes spending time to encourage a child or a small group upon a new activity or to widen the scope of ongoing play, sometimes bringing the group together for a singsong or a story session This approach appears to resemble Minuchin's (11) curriculum which has been described as unsuitable for deprived children (60) Certainly, it contrasts strongly with the academically based and highly structured programmes which have produced significant effects with deprived children in the United States, such as that of Karnes *et al* (9) However, Weikart (15) examined a number of factors common to those pre school programmes which produce measurable cognitive effects upon children He considered that the type of curriculum, provided it supplies a variety of activities within some consistent framework, has relatively less influence than the warmth, interest and participation of the adults who implement it Recent work reviewed by Beller (1, pp 530 600) supports this view In an English study, Quigley (13) emphasised the importance of volunteers in such situations and suggested that if these could meet to discuss aims and means this would benefit morale and, presumably, enhance effectiveness It is probable that the results of the present study may be attributed to such factors, as the leaders of these playgroups ensure a warm, supportive atmosphere and bring to the attending disadvantaged child a stability and an ordered variety of experience which he has not previously encountered In this way they create the conditions which research else where has shown to be conducive to both short and long term benefits

REFERENCES

1 BELLER, E K Research on organised programs of early education In Travers R M W (Ed) *Second handbook of research on teaching* Chicago Rand McNally, 1973

2 BEREITER C and ENGLEMANN, S *Teaching disadvantaged children in the pre school* Englewood Cliffs, NJ Prentice Hall, 1966

3 BLANK M and SOLOMON F A tutorial language program to develop abstract thinking in socially disadvantaged preschool children *Child Development* 1968 *39*, 379 389

4 CAMPBELL D T , and ERLEBACHER, A How regression artifacts in quasi-experimental evaluation can mistakenly make compensatory education look harmful In Hellmuth J (Ed) *Disadvantaged child Volume 3 Compensatory education A national debate* New York Brunner Mazel 1970

5 CHAZAN, M *Compensatory education* London Butterworth 1973

6 de HIRSCH K Pre-school intervention In Calkins E O (Ed), Reading forum *Ninds Monograph 11* Bethesda Maryland US Department of Health, Education and Welfare 1973

7 FRANKENBURG W K DOBB, J B and FANDAL A W *Manual of the Denver Developmental Screening Test* Colorado University of Colorado Medical Center, 1970

8 HERMANN A and KOMLOSI, S Early child care in Hungary *Early Child Development and Care* 1972 *1*, 337-459

9 KARNES M B HODGINS A S *et al* Effects of a highly structured programme of language development on intellectual functioning and psycholinguistic development of culturally disadvantaged three year-olds *Journal of Special Education* 1968 *2* 405-412

10 LITTLE A and SMITH, G *Strategies of compensation* Paris Organisation for Economic Co-operation and Development 1971

11 MINUCHIN P and BIBER B A child development approach to language in the preschool disadvantaged child In Brottman M (Ed) Language remediation for the disadvantaged preschool child *Monographs of the Society for Research in Child Development*, 1968 *33* (No 8, Serial No 124)

12 PINES M *Revolution in learning* The years from birth to five London Allen Lane The Penguin Press, 1969

13 QUIGLEY H Reactions of eleven nursery teachers and assistants to the Peabody Language Development Kit *British Journal of Educational Psychology* 1971 *41* 155 162

14 SMILANSKY M and SMILANSKY, S Intellectual advancement of culturally disadvantaged children An Israeli approach for research and action *International Review of Education*, 1967 *13* 410-431

15 WEIKART D P DELORIA, D J *et al* *Longitudinal Results of the Ypsilanti Perry Preschool Project* Ypsilanti, Michigan High-Scope Educational Research Foundation 1970

16 WESTINGHOUSE LEARNING CORPORATION/OHIO UNIVERSITY *The impact of Head Start An evaluation of the effects of Head Start on Children s cognitive and affective development* Volume 1 Washington DC Office of Economic Opportunity, 1969

17 WIDLAKE, P Educational Priority Areas Action research In Chazan, M (Ed) *Compensatory education* London Butterworth, 1973