PRESCHOOL EXPERIENCE AND SOCIAL DEVELOPMENT DURING THE FIRST YEAR AT SCHOOL

A thesis

submitted in partial fulfilment

of the requirements for the Degree

of

Master of Arts in Education

in the

University of Canterbury

by

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University of Canterbury

1975

ABSTRACT

The effect of three different types of preschool experience on children's social development during their first year at school was examined. Thirty children who had attended kindergarten, 30 from playcentre, and 30 with no preschool experience were selected and an attempt was made to match them on sex, age, IQ, SES, number of siblings, and position in family. The children were observed at school during the free-play period in the lunch-hour. Descriptions of the children's play behaviour (in terms of degree of social interaction), teachers' assessments of sociability, and sociometric ratings were obtained. There were no significant differences between the three groups on any of the dependent variable measures. Subsequent exploratory analyses suggested that variations in the children's IQs and family positions obscured the relationship between their preschool experience and their scores on the dependent variable measures. The results are discussed in relation to the major methodological problems involved in research of this nature.

ACKNOWLEDGEMENTS

The completion of this thesis would not have been possible without the help of numerous individuals. In particular, the author wishes to express her thanks to her supervisor Dr. K. M. Wilton, for his informed guidance, wise counsel and continuing support, and to Mr. B. F. Tuck for his help and advice throughout the investigation. Thanks are also due to Professor G. A. Nuthall for his assistance and advice at several stages. Appreciation is expressed to the Canterbury Education Board, especially to the principals, teachers, and children of the schools which were involved, and to the parents of the children. Without their help and willing cooperation, this study would not have been possible. Lastly, the author would like to thank her husband Andy, for his patience, encouragement, moral support, and help with data analyses.

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CHAPTER 1

INTRODUCTION

Two major types of preschool facility, Kindergarten and Playcentre, operate within New Zealand. Both were originally established by concerned individuals to ease specific social problems rather than because of any widespread belief in the value of education per se. Kindergartens were founded in the late 1880's to care for the many children who lived in cramped city conditions devoid of suitable play areas. Playcentres on the other hand were established by a group of mothers in 1941 to provide play facilities for children and child care facilities for their mothers during the difficult war-time period. A number of authors have documented the subsequent development of both organizations (Christison, 1968; Downer, 1964; Simpson, 1970; Tembo, 1970).

Considerable social change has occurred since the inception of these facilities and this is reflected in the current organization and objectives of kindergartens and playcentres (Simpson, 1970). Kindergartens are now almost completely government administered and financed while the administration and finance of playcentres is still in the hands of the parents, and in comparison with kindergartens, government assistance is slight. The children involved are no longer exclusively lower SES disadvantaged city dwellers or children in need of play facilities but come from a wide cross section of New Zealand's population. Moreover, the aims and objectives of the kindergarten associations and playcentre movements

appear to have changed with the times. Proponents of preschool education usually argue that preschool programmes have beneficial effects on the children involved, on their parents, and subsequently on the community in general. While clearly it is important to include each of these aspects in an examination of the effects of preschool programmes, the present introductory study is concerned with only the first of these, i.e., with the effects of preschools on children.

It is difficult to find any documentation of the major aims and objectives of New Zealand kindergartens. The Hill Committee (Hill, 1971) listed three major aims (with which the New Zealand Kindergarten Union would presumably concur). These can be summarized as follows: 1) To provide a sound basis for the social, emotional, intellectual, and physical growth of the young child; 2) To provide a wider environment outside the home, especially designed as a child's world; and 3) To employ trained teachers to work with the child in a skilfully planned environment in which he is helped to learn to live with his fellows and where carefully chosen equipment is provided to challenge and extend him.

A more specific formulation of policy has been outlined by the Auckland branch of the New Zealand Free Kindergarten Teachers' Association (Inc.) (1974). Their aims are: 1) To develop children's individuality within the framework of their inherent potentialities and their differing levels of benefit from experience; 2) To assist the child to develop an understanding of himself in relation to others and of his obligations to his immediate and larger social community;

3) To assist the child to understand social, technological, and behavioural change and to develop methods of coping with a changing environment; 4) To develop and establish sound processes of inquiry and learning; 5) To foster the enjoyment of learning; and 6) To provide a stimulating, physically and emotionally safe (though not overprotected) environment in which development and learning may take place. It should be noted that while many of the Auckland branch aims could be considered typical of kindergartens throughout the country, the author was unable to find any documentation that they had in fact been adopted by individual associations within the national union. Thus, a degree of variation in emphasis is possible (and indeed likely) from association to association. Nevertheless, it is apparent that the aims of kindergartens have a substantial pedogogical emphasis.

Documentation of the aims and objectives of playcentres is also difficult to find. A study guide prepared for supervisor trainees in the Christchurch Playcentre Association (Densem, 1971) listed the following aims: 1) To increase independence without severing the warm ties to parents and home prematurely; 2) To extend the child's social environment from parents and grandparents, etc. eventually to adults who have no strong emotional ties with the child; 3) To provide group experience for the child with children of his own age who have similar fears, curiosities and pleasures; 4) To enable the child to develop new skills in using his body and muscles; 5) To allow the child to discover ways of releasing, controlling, or using his emotions positively; 6) To think creatively, to try, to test, to dare to be different,

to develop his own talents, to experiment (with language, art, science, music), to explore and understand the world around; and 7) To stimulate interest and delight in learning. Elsewhere in this publication the following working principles are also advocated: growth is to be fostered in an atmosphere of free-play; the child's interests should determine his activity; and while parents should be close at hand to reassure the child, adult intervention in play activities is to be minimized.

A number of similarities are evident in the working principles of kindergarten and playcentres. Both recognise the importance of play, both appear to place emphasis on the child's interests as the basis for the programme, and their indoor and outdoor equipment seems indistinguishable. It is apparent, however, that the emphasis in the aims and objectives of kindergarten and playcentre is slightly different. Kindergartens show rather more of a pedagogical orientation with emphasis on learning experiences planned and provided by trained teachers. Play-centres on the other hand attach central importance to children's play and to the involvement of parents in the preschool education of their children. Hill (1971) elaborated on these differences. He found that kindergarten programmes include many teacher-centred activities involving adult stimulation and guidance, whereas playcentre programmes tend to minimize these activities in favour of free play. In addition, kindergartens are staffed by professionally trained teachers. They rely minimally on

mother-help and expect mothers to accompany children to pre-entry classes only, or to attend to "learn more about their children". Playcentres on the other hand rely solely on mothers for their staff and expect a mother to stay with her child for a lengthy period because they believe that gradual separation of mother and child is necessary. It would thus appear in terms of aims and objectives, staffing, administration, and the involvement of mothers, that kindergartens and playcentres differ to some extent. Any or all of these differences could have important effects on the children concerned.

It is not surprising that a number of assumptions have arisen about the desirability of kindergartens compared with playcentres. Supporters of kindergartens often claim that the kindergarten programme more adequately prepares a child to make the adjustments necessary for school, and supporters of playcentres have been equally vocal with respect to the advantages of playcentres. Although there has been much written about the relative merits of the two programmes, there is almost a complete lack of evidence on the actual effects of the programmes on children. To the writer's knowledge, only two studies have examined the effects of kindergarten attendance, and no attempts have been made to examine the comparative effectiveness of kindergartens and playcentres. In view of the increasing numbers of children attending preschool centres, it seems important to examine the differential effects of the two types of programmes on children.

Although little has been done in New Zealand to compare the effects of such programmes, some relevant work in this area has been done overseas. A number of studies, for example, have examined the effects of the Montessori preschool programme vis à vis those of a conventional nursery school in terms of cognitive, physical, and social development. While it is clearly not possible to generalize from the results of such overseas comparisons to the New Zealand systems of Kindergarten and Playcentre, the overseas research does indicate that the amount of adult control and involvement, and the emphasis on academic activities appear to have a significant effect on children's development, especially their social development. On paper at least kindergarten and playcentre programmes would seem to differ in those respects, and a comparison of their differential effects on children's development seems worthwhile.

In addition to the comparative research mentioned above, there has been much written overseas concerning the more general question of attendance vs. non-attendance at preschools. The effects of differential experiences have been examined in terms of cognitive development (Kristjansdottir, 1972), physical growth (Lamson, 1940), emotional adjustment (Heinicke, 1956), and social development (Brown & Hunt, 1961; Raph et al., 1968). Unfortunately, the studies in all four areas have differed in terms of the criteria of development used and the observation methods and sampling techniques employed. Conclusive findings 'for' or 'against' the issue of preschool attendance have not been reported.

While some attempt has been made to assess the effects of attendance or non-attendance at a preschool in New Zealand (Betts, 1955; Ross, 1956), both studies employed kindergarten children as their "attenders". No study has compared attenders of both playcentre and kindergarten with non-attenders. It was felt that a comparison of non-attenders and attenders which included playcentre graduates as well as children who had attended kindergarten would provide a more adequate assessment of the effects of preschool attendance.

The present study is concerned with the effects of Kindergarten and Playcentre attendance on social development. Two general questions are examined. Firstly, whether or not there are any differences in the social development of children who have or have not attended a preschool (either a kindergarten or a playcentre). Secondly, whether the social development of children who have attended kindergarten differs from that of children who have attended playcentre.

CHAPTER 2

REVIEW OF LITERATURE AND OUTLINE OF EXPERIMENTAL HYPOTHESES

> To a four year old, preschool classes are fun - playing with dolls..., building with blocks..., games outside..., walks, quiet times listening to music, story times, marching, chatting with classmates, talking to the teacher, learning, sharing, caring,... Without his knowing it, his teacher and her aide have subtly guided him in language development, perceptual skills, motor control, creative activities and social behavior. Preschools may look like fun through the eyes of a four year old, but its really a very special learning experience. (Lillard, 1972. p. 103).

An attempt will be made in the present chapter to see whether there is any empirical support for such claims (i.e., whether pre-school attendance "makes a difference" to a child) and to examine the relative effectiveness of the various types of preschool programmes which are available. Clearly, for any child the range of developmental aspects (cognitive development, academic achievement, social development, etc.) that could be influenced by preschool education is extremely wide. When an attempt is made to determine the effects of a particular preschool programme it is apparent that inclusion of the entire range of developmental aspects is neither likely nor necessary and that some selection will be made. Whether or not a particular aspect is examined should be determined by the objectives of the programme under scrutiny as well as the concerns of the researcher. Thus if a programme is introduced to stimulate the cognitive development of underprivileged children, an adequate evaluation of the programme must incorporate measures of cognitive development, although data on personality development, etc., might also be included if this was considered necessary.

In a number of the studies reviewed below, the objectives of the preschool programmes have not been delineated and the basis for selection of the criteria used to evaluate the programmes is unclear. It is thus extremely difficult to interpret the results of such studies. Most of the studies reviewed were conducted in the United States and the American aspects of these studies need to be kept firmly in mind especially when the effects of "kindergarten" or "nursery school" are under discussion. It should be noted that the American kindergarten is not the equivalent of its New Zealand namesake but is more like the first-year infant programme in a New Zealand primary school. The American nursery school on the other hand would appear to approximate (to some extent) New Zealand playcentres and kindergartens, both in the ages of the children and in the types of programmes provided. Two major preschool systems (very similar to those in New Zealand) operate in Britain, and while relatively little research on pre-school education has been undertaken in the United Kingdom (Plowden, 1967) several studies were located and are reviewed. The final section of the chapter is devoted to the few reported studies of New Zealand preschool education. Since the present investigation was concerned primarily with children's social adjustment, studies in that area are given prominence. At the same time, when the studies incorporate findings on other developmental aspects these are also included.

The Effects of Preschool Attendance on Social Development

Because of the opportunities which preschools offer for children to interact with other children or adults, it has long been assumed that preschool experience enhances children's social development. A number of studies have attempted to determine whether such a relationship exists. Reviews of research have been compiled by Beller (1973), Butler (1970), Fein and Clarke-Stewart (1973), Kellmer-Pringle (1960), LaCrosse, Lee, Litman, Ogilvie, Stodolsky and White (1970), Miezitis (1971), Moore and Kilmer (1973), Moustakas (1952), Sears and Dowley (1963), and Swift (1964), and a number of apparently conflicting findings have emerged. The apparent conflict is to some extent a function of: 1) experimental design problems; and 2) the diversity of the social development measures that have been used in the various studies. Most of the studies reviewed by Moustakas (1952) and some of those mentioned by Swift (1964) are methodologically unsound because of their failure to control for the maturation of the children. Other major design problems which have arisen include insufficient reliability data, lack of control for practice effects, and bias of testers, etc. Moreover, it is very difficult to make generalizations about the effects of preschools on social development because of the wide variety of measures of social development which have been used (e.g., direct observations, teacher ratings, and sociometric indices) and the many different definitions of social adjustment that have been employed.

With these reservations in mind, the following generalizations seem justified: 1) Experimentally sound studies which have used teacher ratings, direct observations, or sociometric indices have not demonstrated consistently that preschool attendance per se leads to increased social maturity; 2) While general activity increases in relation to the length of preschool attendance, some socially inacceptable behaviours (e.g., aggression, hostility, resistance) are apparent; 3) The kind of home ("privileged" vs. "deprived") that a child comes from appears to determine the degree of effectiveness that a preschool will have; 4) Differences on social measures between attenders and non-attenders are not stable over time; 5) There seems to be a relationship between the curricula emphasised in different programmes and the behavioural responses of the children involved. In particular, children who have attended preschools which offer relatively unstructured free-play opportunities appear more socially oriented than do children who have attended material-centred (e.g., Montessori) or cognitively oriented (e.g., Bereiter-Engelmann) preschool programmes; and 6) The effects of programmes which differ in terms of the amount of adult involvement or the type of adult-child relationship emphasised have not been consistently determined. While some reviewed reports (e.g., Thompson 1944) have suggested that interaction between "caring" adults and children provides the child with sufficient emotional assurance to interact more freely with his peers, others (e.g., McCandless & Marshall, 1957) indicated that dependence on adults during the preschool years is associated with relatively low social status and group participation.

A recent study (Kristjansdottir, 1972) was concerned with the relationship between preschool experience and teacher ratings of social adjustment in Grade I. Three groups of children were involved. One had attended a kindergarten which offered an "academic" programme, the second had attended a kindergarten with a "readiness" programme, and the third group of children had not attended preschool and served as the controls. The children were matched on sex, academic achievement, and SES. Although the differences between the groups on ratings of social adjustment were non-significant, the author noted that children who had attended the kindergarten with an academic programme were rated as somewhat more shy, less polite, and more dependent, than the other kindergarten group. Thus, there was a slight suggestion that the two preschool programmes had differential effects on the children's rated behaviour.

In brief, many attempts have been made to examine the relationship between preschool attendance and social development. Early studies which compared preschool attenders and non-attenders found no significant social adjustment differences in favour of preschool attendance. Later research has been concerned with the effects of specific types of preschool programmes. In particular, available findings suggest that programmes which differ in the number of organized "academic" activities and the amount of adult involvemen usually have differential effects on children's social development and the the effects may be, at times, quite the opposite of those desired by proponents of the programmes. Because both academic content and parental involvement appear to differentiate the two major types of preschool available in New Zealand (Hill, 1971), this suggestion warrants further investigation.

The Effects of Preschool Attendance on Cognitive, Emotional, and Physical Development

Apart from social growth, several other aspects of children's development may also be influenced by preschool attendance. Johnson (1928) suggested that facilities available at preschools should enhance physical development, arguments have been advanced for the emotional benefits in attending (Fein & Clarke-Stewart, 1973), and the recent rapid growth of Head Start Preschools for disadvantaged children has been based largely on the rationale that preschool intervention can facilitate aspects of cognitive development. While a large number of studies have been designed to test the assumptions about cognitive development, only a very few have been concerned with the emotional and physical effects of preschool attendance. The present section inevitably reflects this research bias, and although some mention is made of studies involving emotional and physical development, the major portion deals with the relationship between preschool attendance and cognitive development.

Preschool attendance and cognitive development. Early studies in this area have been reviewed by Moustakas (1952), Sears and Dowley (1963), and Swift (1964), and most of these studies were concerned with the question of whether or not intellectual development can be accelerated by nursery school attendance. Because of limitations in experimental design and sampling procedures, and conceptual difficulties arising from the equation of IQ change with change in general intellectual

development, many of the findings are inconclusive, contradictory, or impossible to interpret. On the basis of these early studies two general observations seem justified; 1) Generally there is no conclusive evidence that IQ's can be increased through preschool experience; and 2) Studies using IQ data have provided little evidence that preschool attendance may alter general cognitive development.

Subsequent studies have usually incorporated more appropriate experimental designs and have been reviewed by Beller (1973), Butler (1970), Fein and Clarke-Stewart (1973), Hess and Bear (1968), Jensen (1969), and Miezitis (1970). While some results appear to be equivocal, several relationships seem to have emerged. Firstly, preschool programmes which emphasise particular aspects of cognitive development (e.g., the Bereiter-Engelmann programme of language development, the Montessori programme of sensory perception and discrimination learning, etc.) appear to result in increases in cognitive skills in those areas, although the stability of cognitive changes over time has not been demonstrated conclusively; however the findings of some studies which support preschool attendance may be spuriously inflated by offering the children the opportunity to practise skills which are specific to the evaluation instruments and may not be generalizable. Moreover, while some preschool programmes have emphasised school readiness skills, the effects of attendance at such programmes have been more consistently demonstrated by the Stanford-Binet and Peabody intelligence tests, and the Goodenough-Harris Draw-a-Person Test than by measures of achievement in the classroom; Secondly, comparisons of different preschool programme emphases (e.g., child-centred traditional nursery schools, material centred Montessori

preschools, or academic/adult-centred preschools) indicate that the particular emphasis of a programme results in characteristic responses to work, materials, and people, on the part of the children concerned (e.g., whereas children from the Montessori schools have been characterized as work-oriented, and highly responsive in a test situation, nursery school children have been shown to focus more on the people around them than on test materials). Thirdly, the socio-economic backgrounds of the children determine to a large degree the effectiveness of preschool intervention on children's development (e.g., low SES disadvantaged children have been found to make greater gains on measures of IQ and achievement than their higher SES peers).

Denmark & Guttentag (1969) investigated the effects of racially integrated and non-integrated preschool programmes on low SES four year old Negro children. Five groups of children were involved: one group of 17 children attended a play-oriented nursery school which attempted to enhance children's concept formation, abstract reasoning, and use of symbols; a second group of 15 children were enrolled at a Head Start preschool which emphasised cognitive skills, concept formation, and abstract reasoning, and the children were taken on regular school trips; the third group of 15 children went to a previously all-white nursery school which offered traditional pre-kindergarten activities, and some work on conceptand perceptual development (it was assumed that language development and cognitive skills would improve through interaction with white, middle class children); the fourth group of 16 children attended a preschool which was primarily play-oriented, with a minimum of formal

education and training in cognitive skills; and the fifth group of 15 children who served as the control group, did not attend a preschool. The groups were matched on their pretest scores on the Reading Prognosis Test (Feldman & Mahler, 1966) and the Leiter International Performance Scale. After two months of preschool attendance, the preschool groups scored significantly higher than the controls. Although there was no clear indication that one preschool was better than the others for the children, it was suggested that the length of attendance at programmes emphasising specific cognitive skills was related to the degree of growth in children.

Two studies were concerned with the effects of preschool programmes involving the parents of the children concerned. Gray and Klaus (1970) studied whether it was possible to offset the progressive retardation observed in the school achievement of children living in deprived circumstances. The preschool intervention programme emphasised both child and parent education (through home visits), and was aimed specifically at fostering attitudes related to achievement (achievement motivation, parental aspirations, etc.) and aptitudes related to achievement (perceptual and cognitive development, language, etc.). The subjects were 88 Negro children, selected on the basis of parents' occupations, ecucation, income, and housing conditions. Sixty one children who lived in the same city were randomly assigned to three treatment groups. The remaining 27 children, who lived in another city nearby, formed the distal control group. Four

treatments were possible: T_1 - the first group attended a ten-week summer preschool for three years and a home-visitor called on each mother and child weekly for the intervening months; T_2 - the second group had two years of summer preschool intervention and home visits; T_3 - the local control group received no preschool intervention. Pre- and post-tests were administered at the time when the preschool attenders were being tested; T_4 - the distal control group received exactly the same treatment as the local control group.

Results indicated that immediately after intervention the two experimental groups scored significantly higher than the controls on the Stanford-Binet. While the IQ scores of all groups declined gradually over time the relative superiority of the preschool attenders was maintained until the end of Grade 4 - three years after intervention had ceased. The results of the Peabody Picture Vocabulary Test showed a similar pattern but differences between the groups were not significant after Grade 1. On the Metropolitan Achievement Test the experimental groups were significantly superior to the controls at the end of First and Second grades but by the end of Grade 4 inter-group differences were not significant. Thus, it appears that the preschool programme which involved mothers had substantial effects on the children initially but the limitations of subsequent school programmes and the depressed conditions in which the children continued to live mitigated against the continuanc of the effects.

A survey conducted by Heber and his associates (Heber & Dever, 1970; Heber & Garber, 1971) suggested a very close relationship between maternal intelligence and the mental retardation of children living in slum conditions. Subsequently, they instituted a preschool programme which emphasised a high degree of parental (especially mother) involvement. Women living in an urban residential area characterised by an extremely high prevalence of "cultural-familial" retardation were tested intellectually after the birth of a child in order to identify those who were retarded and to "catch" the children while they were still very young. Forty mothers were distinguished and their children randomly assigned to experimental or control groups. From the age of three months the experimental infants were exposed to an intensive stimulation programme designed to facilitate cognitiv and language development and to offset the adverse factors in their living environment. Simultaneously, the experimental mothers underwent a "rehabilitation" programme which aimed to prepare them for employment, and to improve their home-making and child-rearing skills. The control mothers and children experienced no intervention, but took part in the extensive testing programme which included general IQ tests, and direct measures of learning and performance.

Results indicated that after 14 months of age, the experimental children were superior to their controls on all of the measures used. By $4\frac{1}{2}$ years there was a mean difference between experimental and control children of 27.4 IQ points.

While the results must be interpreted with due caution until long-term evaluations are possible, it would appear that the emphasis on both mother and child education in Heber's programme and intervention very early in a child's life had significant effects on the growth of the children.

Kristjansdottir (1972) examined the relationship between preschool experience and achievement in Grade 1. Three groups matched on sex, academic achievement, and SES were selected. The first group attended one year of kindergarten with an "academic" programme, the second attended a kindergarten with a "readiness" programme, and the third group had no preschool experience prior to Grade 1. The results indicated that children who had attended the academic kindergarten, in comparison with the controls, scored significantly higher on measures of school readiness and reading achievement after kindergarten, and on reading and arithmetic achievement following Grade 1. Although differences between children who had attended the readiness kindergarten and the controls were not significant immediately after kindergarten, significant differences in reading and arithmetic achievement were apparent at the completion of Grade 1. A comparison of the two preschool groups showed that the academic kindergarten children scored significantly higher than the readiness kindergarten children on reading achievement after kindergarten and on both reading and arithmetic achievement at the completion of Grade 1. Thus, it would appear from this study that preschool attendance can result in increased academic achievement during first grade, and that some types of

preschool programmes yield greater benefits than others. No indication was given that the groups had been randomly assigned to preschool treatments, however, and it is possible that the results were confounded.

Silverberg, Silverberg and Iverson (1972) examined the effects of two months' daily kindergarten instruction in alphabet and number recognition on first grade reading. The sample (n = 109) consisted of two kindergarten classes in each of two schools. In each school, one of the classes served as the experimental group and the other as the control group. The experimental groups were superior to the controls in learning the names of letters and numbers immediately after the instruction period and two months later at the beginning of Grade 1. At the end of First Grade, however, no differences were found on the Metropolitan Achievement Test (Reading) or the Wide Range Achievement Test (Word Recognition section). Thus, training in specific reading readiness skills at preschool appeared to have no significant effect on general reading achievement (word recognition) at the end of Grade 1.

While the results of some of the more recent studies appear to indicate that certain types of preschools are better than others in enhancing the development of cognitive skills, findings are by no means conclusive. It would seem that the major points drawn from the previous reviews of research into cognitive development cited above are still applicable, although the qualification must be made that preschool attendance can apparently have a substantial impact on the cognitive development of mildly retarded children if it is begun early enough and if parental involvement and participation in the programmes is at a high level.

Preschool attendance and emotional development. It has often been suggested (Butler, 1970; Fein & Clarke-Stewart, 1973) that where parents are involved in the preschool programme and where the separation of children from their mothers is achieved gradually, attendance at preschool ought to enhance emotional development. Research into the effects of preschool attendance on emotional development has been reviewed by Butler (1970), Fein & Clarke-Stewart (1973), LaCrosse et al. (1970), Moustakas (1952), and Swift (1964), and as far as the author is aware, no other subsequent studies have been undertaken. While many inconclusive results have been obtained, some consistent relationships between preschool attendance and emotional growth appear to have emerged, and the following generalizations seem justified: 1) no deleterious effects have been found in children's emotional growth when they have been cared for in day nurseries or such facilities as kibbutzim, where children undergo much more extensive separation (Fein & Clarke-Stewart, 1973); 2) longer preschool attendance has been associated with increased self-control, more mature moral judgements, and better self-images; but positive effects on emotional development do not seem stable over time; and 3) the interrelationship between home background characteristics and preschool attendance is complex and as yet unclear. While some research (Beller, 1973) indicates that children coming from deprived and educationally disadvantaged backgrounds gain no long-term emotional advantages, other findings (Fein and Clarke-Stewart, 1973) suggest that children from deprived backgrounds may experience more stable emotional relationships in preschool than they enjoy at home.

In summary, preschool attendance does not appear to have any deleterious effects on children's emotional growth, and may, in fact, be an important experience for children from unstable backgrounds. Fein and Clarke-Stewart (1973) also suggested that the length of time away from parents, the kind of substitute care that is provided, the degree of adult-involvement with the children, and the quality of the mother-child relationship may all determine the effectiveness of preschool attendance on emotional development. Kindergarten and playcentre in New Zealand appear to differ somewhat in the amount of parent-involvement in their programmes and the stress placed on parent-child separation (Hill, 1971). In addition, children who don't attend preschool are presumably not separated from their parents for any length of time - unlike kindergarten and playcentre children. It seems likely, in view of overseas findings, that children who have undergone such differential preschool experiences would differ somewhat emotionally. While the present study was not concerned with this possibility, an examination of the effects of kindergarten and playcentre attendance and preschool non-attendance on emotional development seems worthy of investigation.

Preschool attendance and physical/motor development. The very few studies available have been reviewed by LaCrosse et al. (1970), Moustakas (1952), and Swift (1964), and two generalizations appear to be warranted. Firstly, preschool programmes in which children are trained in specific motor skills have been shown to enhance their development in those skills. And secondly, there is no clear relationship between

preschool attendance and general physical development. It is likely in recent years, with increased medical and dietary knowledge, improved living standards, etc., that parents and preschool administrators, etc., have deemphasised the role of preschools in facilitating children's physical development, and the comparative lack of recent research could well reflect this change in emphasis. Living conditions are by no means uniform, however. Heber and Dever's (1970) study indicated that for mentally retarded children from deprived backgrounds, preschool attendance compared with non-attendance can result in significant changes in the growth of the children involved. Thus, it could well be that the influence of preschool attendance on physical development has not as yet been adequately explored.

In summary, the large volume of research into the effects of preschool attendance on cognitive, emotional, and physical/motor development has not yielded solid evidence of the benefits of such attendance. Programmes vary widely in their aims, methods of teaching, types of equipment used, and emphases placed on particular aspects of children's development. Thus, some programmes appear to be effective with certain children but not with others. One finding, however, which has emerged and which seems particularly pertinent to the New Zealand situation is the suggestion that the emphases given to both organised academically oriented activities, and parental or adult involvement in particular programmes may differentially affect children's development.

Research on New Zealand Preschool Attendance

Although much has been written about New Zealand preschools, most of the literature is highly descriptive in nature and covers such topics as the historical origins of preschools, their staffing, aims, materials and methods, typical characteristics of staff across the country, aspects of building, etc. Very little empirical research has been conducted and as far as the author is aware, only two empirical studies of New Zealand preschools have been documented. Both of these studies were concerned with the effects of attendance at kindergarten.

Betts (1955) examined the influence of attendance and non-attendance at kindergarten on children's emotional and social development. Two groups of children, matched for CA, MA, SES, sex, and numbers of siblings, were involved. They comprised 55 children (30 boys and 25 girls) who had attended kindergarten prior to school admission, and a similar group with no preschool experience. Teachers rated the children on scales of social development and emotional adjustment devised by the investigator. Findings on the measure of social development indicated that there were significant differences between boys in favour of the kindergarten attenders, although no such differences were evident between the two groups of girls. Moreover, it was found that the differences were consistent whether children had attended school for 1, 2, or 3 months.

A comparison of total scores on the measure of emotional adjustment indicated that both boy and girl attenders were significantly more emotionally mature than their controls. While there were some sex differences in reactions to stress situations (e.g., tendency to cry, etc.), children who had attended

kindergarten were more mature "in all-round emotional development" (p. 72) and showed fewer nervous or regressive tendencies than the controls. It would appear that preschool attendance enhanced the children's emotional development (as defined in this study). While there was a suggestion that boys show greater gains in social maturity than girls following preschool attendance, it would appear that the emotional development of both boys and girls was enhanced by such attendance.

Ross (1956) examined the effects of kindergarten attendance on number and reading readiness and social development. Two groups of children, matched for sex, CA, SES, IQ, nationality, and school were involved, and included 37 children (17 boys and 20 girls) who had attended kindergarten for at least nine months prior to school admission, and a similar number of children who had not attended preschool. The Reading and Number Readiness sections of the Metropolitan Readiness Tests were administered and intergroup comparisons were made on total readiness scores, reading readiness subtests (oriented towards vocabulary and concept development), and number readiness scores. Kindergarten attenders scored slightly higher than the controls on all three measures but differences were not significant. Children's social development was assessed by teacher ratings (Vineland Social Maturity Scale) and observations of social interactions during free activity periods and lunch play periods. Comparisons between the groups on mean social age scores indicated that kindergarten attenders were approximately 5 months more advanced socially than the controls. The superiority of kindergarten children was also reflected in

their mean social quotients. Observations of play interactions were analysed in terms of "good" and "bad" social responses. No significant differences between groups were obtained from playground observations although there was a tendency for kindergarten children to exhibit slightly more "bad" as well as "good" social behaviour when compared with the controls. It was suggested that this was a function of overall increases in social interaction. Observations within the classroom setting indicated that kindergarten children showed significantly more "good" social responses than the controls. While there was also a tendency for kindergarten children to exhibit more "bad" social responses, this difference was not significant.

It would appear from Ross's study that preschool attendance did not appreciably influence academic readiness. The findings for social development are less clear, however. While there is evidence of significant differences in favour of kindergarten attenders on ratings of social maturity, the findings from observations of social interactions suggest only slight advantages within the classroom - but not in the playground, for kindergarten attendance. Moreover, there was a suggestion that kindergarten attendance may also have increased undesirable social responses.

It could be argued that it is somewhat premature to examine the effects of kindergarten and playcentre programmes until more adequate bases for classifying such programmes, especially in terms of the actual components of the programmes and the characteristics, abilities, etc. of the teachers are developed. It is possible that the characteristics of particular kindergarten

and playcentre programmes may vary considerably. Nevertheless the training programmes for kindergarten teachers are coordinated by regional supervisory staff, and the supervisors in playcentres have completed specified playcentre association training. It thus seems likely that there will be considerable similarity between kindergarten programmes, and between playcentre programmes. At the same time, differences between kindergartens and playcentres, with respect to programme characteristics, staff-child relationships, etc. will probably be consistent. Moreover, it seems equally likely that such differences will be reflected in the development of the children concerned. A comparative study of the effects of kindergarten and playcentre attendance therefore seems both desirable and long overdue. In the present study, an attempt was made to examine the effects of kindergarten and playcentre attendance as well as preschool non-attendance on children's social development.

Experimental Hypotheses

Overseas studies have not consistently reported differences in social development between children who have and have not attended preschool. At the same time, two empirical studies have examined the effects of attendance at New Zealand kindergartens, and both have shown advantages in favour of such attendance. In particular, there is some evidence that emotional development may be enhanced through kindergarten attendance, although the findings for social development and cognitive growth are unclear, and no research has been conducted into the effects of playcentre attendance. Accordingly, the following non-directional hypothesis was formulated:

Hypothesis 1: Children who have attended a preschool centre (either a playcentre or a kindergarten) differ in terms of their social development from children who do not attend preschool.

A number of overseas studies indicate that different types of preschool programmes yield differential effects on the children concerned. Specifically, it has been suggested that emphasis on organized academic activities, or on the amount of adult and parent involvement may both have a substantial influence on social development. Children who are exposed to academically oriented programmes tend to become more material-centred and less conscious of the people around them, while the effects of adult-centred programmes on the children involved are unclear. Because kindergartens and playcentres differ in terms of their emphasis on organized teacher-centred activities, and with respect to the amount of parental involvement in the programmes, it seems likely that attendance at kindergarten or playcentre would differentially affect the social development of the children concerned. Accordingly a second nondirectional hypothesis was also formulated:

Hypothesis 2: Children who have attended a playcentre differ in terms of their social development from children who have attended kindergarten.

CHAPTER 3

METHOD

Subjects

The subjects were 90 five year olds (54 boys and 36 girls) in their first year at Christchurch city primary schools. Three groups were selected from each of nine schools. These comprised 30 children (18 boys, 12 girls) who had attended kindergarten prior to school, 30 children (18 boys, 12 girls) who had attended playcentre, and 30 (18 boys, 12 girls) who had not attended preschool prior to school admission. Because the majority of children in the schools had attended a preschool at some time, completely random selection of the sample was not possible. Consequently, a list was compiled of children from the nine schools who had not attended preschool and who were considered by their teachers to have no marked physical or sensory defects. These children were then matched in trios on the basis of age and sex with classmates who had attended playcentre or kindergarten. An attempt was also made to minimize intra-trio differences on IQ, SES, numbers of siblings in the family, position in the family, length of preschool attendance, and time at school.

The kindergarten and playcentre groups were included so that a comparison between children who had attended kindergarten and those who had attended playcentre could be made. Children were selected for these groups if they had had at least six months' preschool experience ($\bar{X}_k$ = 13.46, s.d = 6.16, $\bar{X}_{pc}$ = 18.25, s.d = 7.75). The children with no preschool experience were included for two reasons: firstly, to provide a baseline for interpreting any differences between playcentre and kindergarten

children, and secondly, to determine the extent of development irrespective of preschool attendance in five year old children so that a comparison between those who did and those who did not attend preschool could be made.

Prior to the observations, the Goodenough-Harris "Draw-a-Man" Test (Harris, 1963) was administered by the children's teachers. SES ratings on all subjects, in terms of the level of fathers' occupations and incomes, were obtained using a scale derived from New Zealand socioeconomic data (Elley & Irving, 1972). In view of the possibility that the number of siblings within a subject's family could influence the degree of social participation shown by him (Parten, 1933; Bossard & Boll, 1960), an attempt was made to balance the groups as closely as possible with respect to the number of siblings within families. An attempt was also made to minimize inter-group differences in terms of the subjects' positions within families. It was recognized that a different social role might possibly be expected of first-borns than younger children. Descriptive data on chronological age, mental age, intelligence, SES, numbers of siblings, and position in family of the three experimental groups are presented in Table 1. It should be noted that the groups differed somewhat on these variables and account was taken of this variability in the interpretation of the results.

General Design

An attempt was made to control for intrasession history (Campbell & Stanley, 1963). Once children had been selected for each of the three groups, they were randomly ordered within their trios to prevent: 1) the possibility of all first observations

Descriptive data on the Experimental Groups

		CA (in months)	MA (in months)	IQ	SES*	No. of Siblings	Position in Family
Kindergarten	$\bar{X}$	64.56	65.94	101.72	3.44	2.33	1.72
Boys	s.d.	2.24	10.40	13.57	1.30	.47	.73
Playcentre	$\bar{X}$	64.56	64.89	100.11	4.06	2.28	1.72
Boys	s.d.	2.24	11.20	15.92	.97	.73	.80
Home	$\bar{X}$	65.72	70.61	107.67	4.28	3.22	2.39
Boys	s.d.	3.41	8.78	14.14	1.10	1.31	1.42
Kindergarten	$\bar{X}$	63.59	66.58	104.42	4.50	2.67	1.67
Girls	s.d.	2.60	13.05	18.38	.96	.62	.76
Playcentre	$\bar{X}$	63.92	69.17	108.17	3.75	2.92	2.08
Girls	s.d.	2.02	7.80	11.25	1.10	1.04	1.11
Home	$\bar{X}$	64.17	64.08	99.67	4.58	4.08	3.17
Girls	s.d.	3.26	8.88	11.45	.64	2.02	1.82

* Scores range from 1=high, to 6=low.

being made on one particular group, and 2) the problem of observer bias resulting from the knowledge of a child's preschool attendance. In addition, all children in a trio were observed on the same day to prevent differences arising from differential weather and playground conditions, variations in classroom climate, etc.

Social Participation

The degree of a child's social participation was classified according to the Parten Scale of Social Participation (Parten, 1932; Parten, 1933; Parten & Newhall, 1943). The scale categories range from 1 (low) to 6 (high), and are defined by Parten and Newhall (1943) as:

(1) Unoccupied Behaviour - In this category the child apparently is not playing at all, at least not in the usual sense. Rather he tends to occupy himself by watching anything which happens to be of momentary interest. When there is nothing of interest to him taking place, he may, e.g., play with his own body, get on and off seats, stand around, follow the teacher or sit in one spot glancing around the playground.

(2) Solitary Play - Here the child plays alone and independently with equipment which is different from that used by children within speaking distance, and he makes no attempt to get close to or speak to the other children. His interest is centred on his own activity, and he pursues it without reference to what others are doing.

(3) Onlooker Behaviour - The child spends most of his time watching the others play. He often talks to the playing children, asks question, or gives suggestions, but does not enter into the play himself. He stands or sits within speaking distance of the

group so he can see or hear all that is taking place.

(4) Parallel Play - The child plays independently, but the activity he chooses naturally brings him among other children. He plays with equipment etc. similar to that used by the children around him, but he plays with the equipment as he sees fit and does not try to influence the activity of children near him. He plays beside rather than with other children.

(5) Associative Play - The child plays with other children. There is exchange of play equipment, following one another with toy cars, trucks, etc., and mild attempts to exercise control over the children who may or may not play in the groups. All engage in similar if not identical activity; there is no division of labour and no organisation of activity. Each child acts as he wishes, and does not subordinate his interests to the group.

(6) Cooperative Play - The child plays in a group that is organized for the purpose of making some material product, of striving to attain some competitive goal, of dramatising situations of adult or group life, or of playing formal games. There is a marked sense of belonging or not belonging to the group. The control of the group situation is in the hands of one or two members, who direct the activity of the others. The goal, as well as the method of attaining it, necessitates a division of labour, the taking of different roles by the various group members, and the organization of activity so that the efforts of one child are supplemented by those of another.

Observations were analysed in two ways: Firstly, analyses were undertaken of the frequency of observations within each category considered separately. For each category, subjects were assigned a score of 1 for each observation falling within that category and a score of zero if no instances of that behaviour were recorded. The score for a particular child on a particular category could thus range from 0 to 20. Since each child's category scores were derived from a total of 20 observations, however, it is clear that category scores are related and that the maximum score for each child on all categories summed is 20. Secondly, in terms of weighted scores - Unoccupied - Score = 1 (i.e., an instance of unoccupied behaviour was given a score of 1); Solitary - Score = 2; Onlooker - Score = 3; Parallel - Score = 4; Associative - Score = 5; Cooperative - Score = 6. A summed social participation score (SSP) for each child was obtained by summing the scores for the twenty observations. Consequently, individual SSP scores could range from 120 (20 x 6) to 20 (20 x 1), for the 20 observations.

Social Acceptability

The degree of a child's acceptance (SA) by his peers was assessed by using sociometric ratings (Kerlinger, 1973). All children in the classrooms under study were asked to name three children they would most like to play with. Social acceptability of the subjects was determined by summing the total number of times each subject was chosen as a playmate, and reducing this to a percentage of the number of possible times he could have been chosen. Thus, a child who was chosen 11 times in a class of 22 other children, each of whom could choose three playmates,

was chosen 11 out of 22 possible times. Reduced to a percentage the child's SA score would be 50. In addition, a measure of reciprocated choice (Kerlinger, 1973) was obtained by examining subjects' choices and determining the degree to which the three children selected reciprocated each subject's choice. Reciprocal acceptance (RA) scores ranged from a maximum of 3 (the three children chosen by the subject chose him in return) to a minimum of 0 (none of the children chosen by the subject returned the choice).

Teacher Ratings

Teachers of all subjects were asked to rate the children for their sociability. The rating was defined as follows:

Sociability -

1) The child always prefers to play or work with others
2) The child often prefers to play or work with others
3) The child spends equal amounts of time with others and by himself
4) The child seldom prefers to play or work with others
5) The child never prefers to play or work with other children,

and teachers were asked to select the category which best fitted each subject.

Procedure

An attempt was made to obtain a random sample of group participation at a time when children would be most likely to engage in behaviour of their choice and least subject to teacher direction of and teacher intervention in their activity. The free-play period (12.15 - 12.55 p.m.) during the school lunch

break was chosen as the most suitable time to observe children at play. Each trio of subjects was observed during this period, and all social interactionswere classified according to the Social Pariticipation Scale.

A time-sampling method, based on a two-minute schedule, was used to record each subject's behaviour. The first child in each trio was randomly selected and his predominant social behaviour noted every fifteen seconds, for one minute (i.e., four observations). The second minute was used to record additional behavioural details, etc., and to locate the second of the three subjects. A similar procedure was used for all three children, and the observations were rotated until twenty 15-second observations had been made on each subject. All data were recorded on prepared rating sheets (see Appendix C).

Although the majority of the observations were made by the researcher, two additional observers were present on a number of randomly determined occasions. All observers tried to be as unobtrusive as possible, and when their presence occasioned some comment from children, discussions were terminated as quickly as possible to minimize any influence on or interference with the play behaviour of the other children. A check was made on the agreements between the three raters over 48 rating instances, and exact agreement was found on 81% of the ratings. It was impossible to gauge the effects of the observers' presence but since each school visited was used extensively for observation and teaching practice by Teachers' College students, it was assumed that the presence of the three observers would have had minimal effects on the children's play behaviour.

Statistical Analyses

Two way (sex by preschool) analyses of variance (Winer, 1971) were carried out on the dependent variable measures - separate Play Category scores, SSP scores, Social Acceptability scores, Reciprocal Acceptability scores, and teachers' ratings of children's social acceptability.

CHAPTER 4

RESULTS AND DISCUSSION

Results

Primary Analyses. The results of analyses of variance carried out on each of the six separate play category scores are presented in Tables 2-7. None of the main or interaction effects were significant. In view of the minimal variability in cell means it was evident that planned comparisons between kindergarten and playcentre groups and between preschool attenders and non attenders were unnecessary. The group means for the separate play category scores are presented graphically in Figure 1. It is apparent that the patterns of play for the three preschool groups were very similar. Moreover, it should be noted that the similarity was consistent across sexes.

Essentially equivalent results were obtained from the analysis of summed Social Participation (SSP) scores (Table 8) in that neither the main effects nor the interaction effect were significant ($\bar{X}_k = 80.40$, $\bar{X}_{pc} = 82.31$, $\bar{X}_h = 82.44$).[1] The analysis of Social Acceptability (SA) and Reciprocal Acceptability (RA) scores are presented in Tables 9 and 10. Neither of the main effects nor the interaction effect were significant for either SA scores ($\bar{X}_k = 9.82$, $\bar{X}_{pc} = 11.09$, $\bar{X}_h = 13.62$) or RA scores ($\bar{X}_k = 25.36$, $\bar{X}_{pc} = 27.06$, $\bar{X}_h = 31.72$). Table 11 presents a summary of the

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[1] For ease of presentation, lower case letters k, pc, and h are used to denote kindergarten, playcentre and home (no preschool) groups respectively.

Table 2

Analysis of Variance of
Separate Play Category Scores
Unoccupied Behaviour

Source	df	MS	F	p
Sex (A)	1	1.35	0.60	0.55
Preschool (b)	2	0.82	0.37	0.69
A x B	2	0.15	0.07	0.93

Table 3

Analysis of Variance of
Separate Play Category Scores
Solitary Behaviour

Source	df	MS	F	p
Sex (A)	1	0.60	0.10	0.74
Preschool (B)	2	3.77	0.65	0.53
A x B	2	6.37	1.10	0.33

Table 4

Analysis of Variance of
Separate Play Category Scores
Onlooker Behaviour

Source	df	MS	F	p
Sex (A)	1	6.02	0.93	0.66
Preschool (B)	2	4.17	0.64	0.53
A x B	2	5.50	0.85	0.56

Table 5

Analysis of Variance of
Separate Play Category Scores
Parallel Play

Source	df	MS	F	p
Sex (A)	1	13.07	0.98	0.67
Preschool (B)	2	10.91	0.82	0.55
A x B	2	0.84	0.06	0.93

Table 6

Analysis of Variance of
Separate Play Category Scores
Associative Play

Source	df	MS	F	p
Sex (A)	1	0.32	0.01	0.91
Preschool (B)	2	10.90	0.39	0.68
A x B	2	8.06	0.28	0.75

Table 7

Analysis of Variance of
Separate Play Category Scores
Cooperative Play

Source	df	MS	F	p
Sex (A)	1	22.00	0.89	0.64
Preschool (B)	2	3.41	0.13	0.87
A x B	2	13.35	0.53	0.59

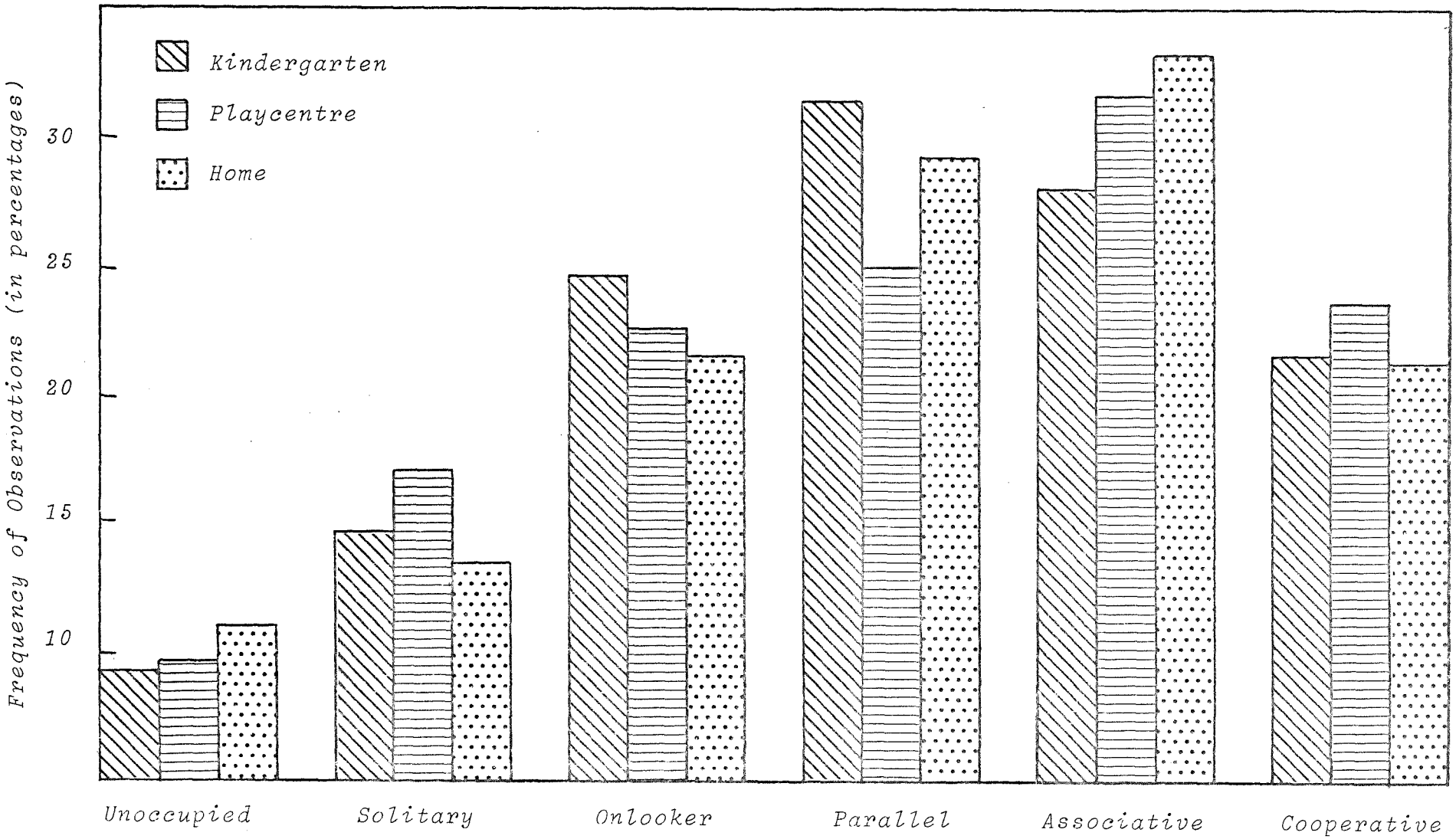

Figure 1. Mean frequency ofseparate play categories for Kindergarten, Playcentre and Home groups.

Table 8

Analysis of Variance of
Summed Social Participation (SSP) Scores

Source	df	MS	F	p
Sex (A)	1	39.15	0.22	0.64
Preschool (B)	2	38.08	0.22	0.81
A x B	2	269.92	1.52	0.22

Table 9

Analysis of Variance of
Sociometric Data
Social Acceptability Scores

Source	df	MS	F	p
Sex (A)	1	3.725	0.06	0.79
Preschool (B)	2	97.139	1.69	0.19
A x B	2	42.162	0.74	0.51

Table 10

Analysis of Variance of
Sociometric Data
Reciprocal Acceptability Scores

Source	df	MS	F	p
Sex (A)	1	0.07	0.09	0.76
Preschool (B)	2	0.25	0.31	0.74
A x B	2	1.64	1.99	0.14

Table 11

Analysis of Variance of
Teachers' Ratings of Social Acceptability

Source	df	MS	F	p
Sex (A)	1	0.01	0.01	0.91
Preschool (B)	2	0.31	0.42	0.66
A x B	2	0.05	0.06	0.94

analysis of variance of teachers' ratings of the children's social acceptability. Neither of the main effects nor the interaction effect were significant ($\bar{X}_k = 2.43$, $\bar{X}_{pc} = 2.61$, $\bar{X}_h = 2.43$). These results indicate that kindergarten, playcentre and home (no preschool) groups did not differ significantly in terms of their popularity with their peers, the frequency of their mutual friendships or the extent of their sociability as rated by their teachers, and the results for boys and girls were closely comparable.

In brief, kindergarten, playcentre and home groups did not differ significantly on any of the measures reported above. (Intercorrelations between dependent variable measures, which in general were rather low, are presented in Appendix A, Table 20.) While no sex differences were observed, it is possible that intergroup variation was masked to some extent through other uncontrolled sources of variation. A series of secondary exploratory analyses of variance was therefore undertaken in which SES, IQ, number of siblings, and position in family were each in turn incorporated as moderator variables.

Secondary Analyses. Within each preschool and sex group children were classified according to their SES ratings into High (Scale ratings 1 - 3), Medium (Scale rating 4) and Low (Scale ratings 5 - 6) SES groups. Three way analyses of variance were undertaken on the dependent variable measures (separate play category scores, SSP scores, SA scores, RA scores and teachers' ratings of social acceptability).[2] No significant main or interaction

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[2] Where significant main or interaction effects were obtained, the results are tabulated and discussed in the Results section. All other tables are included in Appendix B.

effects were obtained from the analyses of SSP, RA, and SA scores, teachers' ratings of social acceptability, and play categories 1, 2, 4, 5, and 6. A significant Preschool x SES interaction was obtained from the analysis of Onlooker Behaviour (Category 3). The results are presented in Table 12, while the means are shown graphically in Figure 2.[3] For kindergarten children the highest frequency of onlooker behaviour is apparent in the high SES children, in the playcentre group most onlooker behaviour was apparent in the medium SES children, while the home group low SES children showed the most onlooker behaviour. There is thus a slight suggestion that SES variation may have masked intergroup differences. The fact that similar results were not attained for any of the other separate play categories, however, suggests that such masking was not substantial.

A second set of exploratory three-way analyses of variance were undertaken on the dependent variable measures. The children were classified within each preschool and sex group into three IQ level subgroups - high IQ (110 and above), medium IQ (98 - 109) and low IQ (97 and below), and IQ levels were used as the post-hoc moderator variable. None of the main or interaction effects deriving from the analyses of separate play categories, SA and RA scores and teachers' ratings of social acceptability were significant. A significant sex x Preschool x IQ interaction was obtained from the analysis of SSP scores (Table 13). The results are presented graphically in Figures 3 and 4 for separate sex groups. High IQ boys (Figure 3) who did not attend preschool prior to school

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[3] It was not considered necessary to undertake analyses of simple effects following significant interactions in these exploratory analyses as only the general patterns of results were of interest.

Table 12

Analysis of Variance of
Onlooker Behaviour
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	3.04	0.52	0.52
Preschool (B)	2	11.31	1.93	0.14
SES (C)	2	2.11	0.36	0.70
A x B	2	16.73	2.86	0.06
A x C	2	3.35	0.57	0.57
B x C	4	16.10	2.75	0.03
A x B x C	4	14.48	2.48	0.06

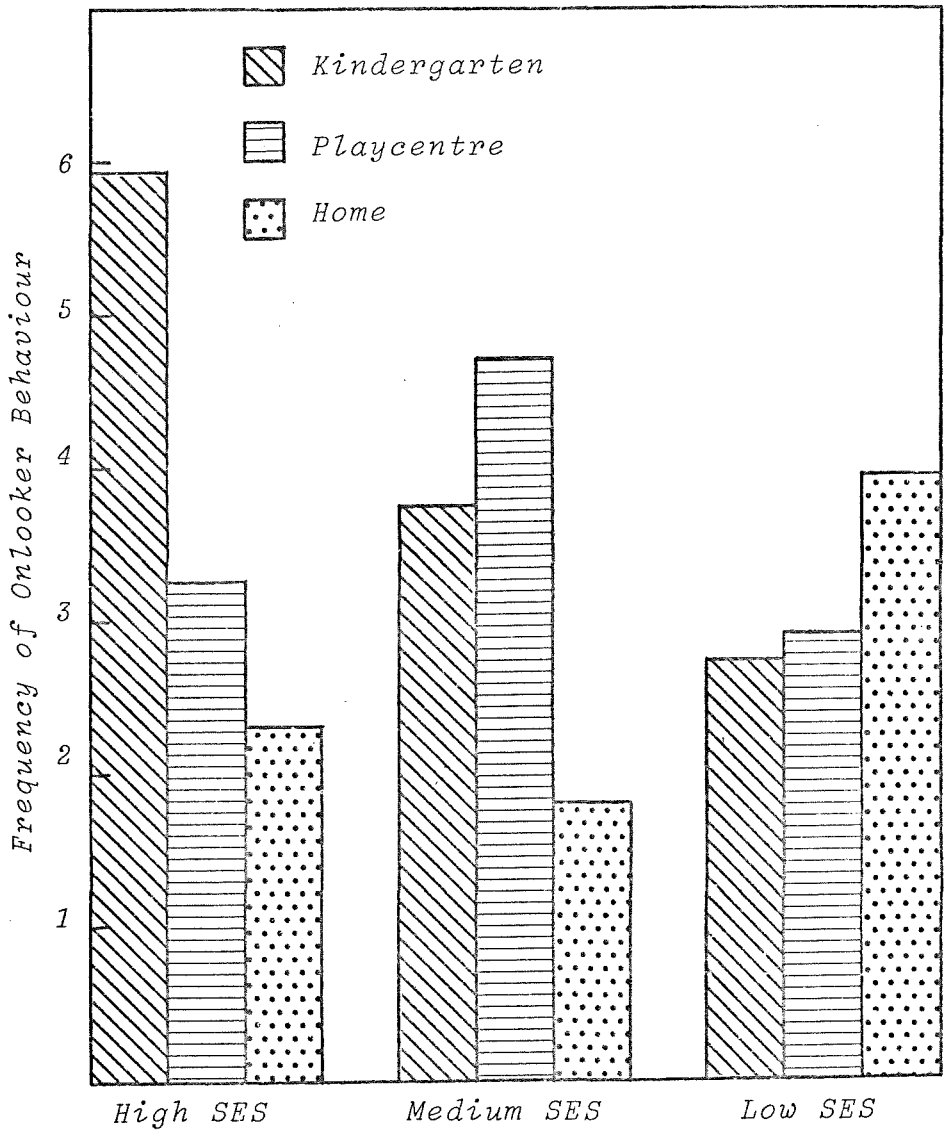

Figure 2. Mean frequency of Onlooker Behaviour as a function of preschool experience and socioeconomic status.

Table 13

Analysis of Variance of
SSP Scores
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	86.83	0.49	0.51
Preschool (B)	2	42.72	0.24	0.79
IQ (C)	2	40.99	0.23	0.79
A x B	2	99.07	0.57	0.57
A x C	2	90.64	0.52	0.60
B x C	4	30.89	0.17	0.94
A x B x C	4	453.74	2.60	0.04

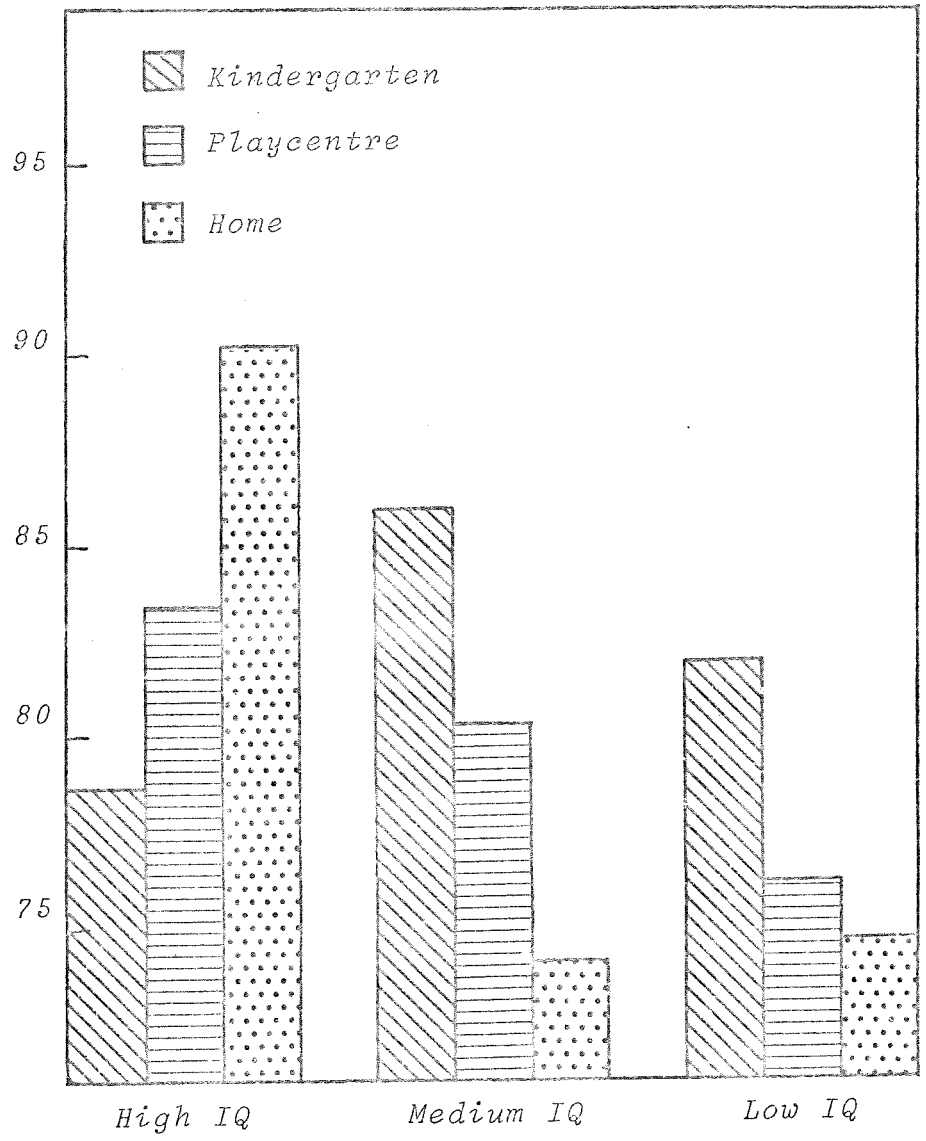

Figure 3. Mean SSP scores as a function of preschool experience for high, medium, and low IQ boys.

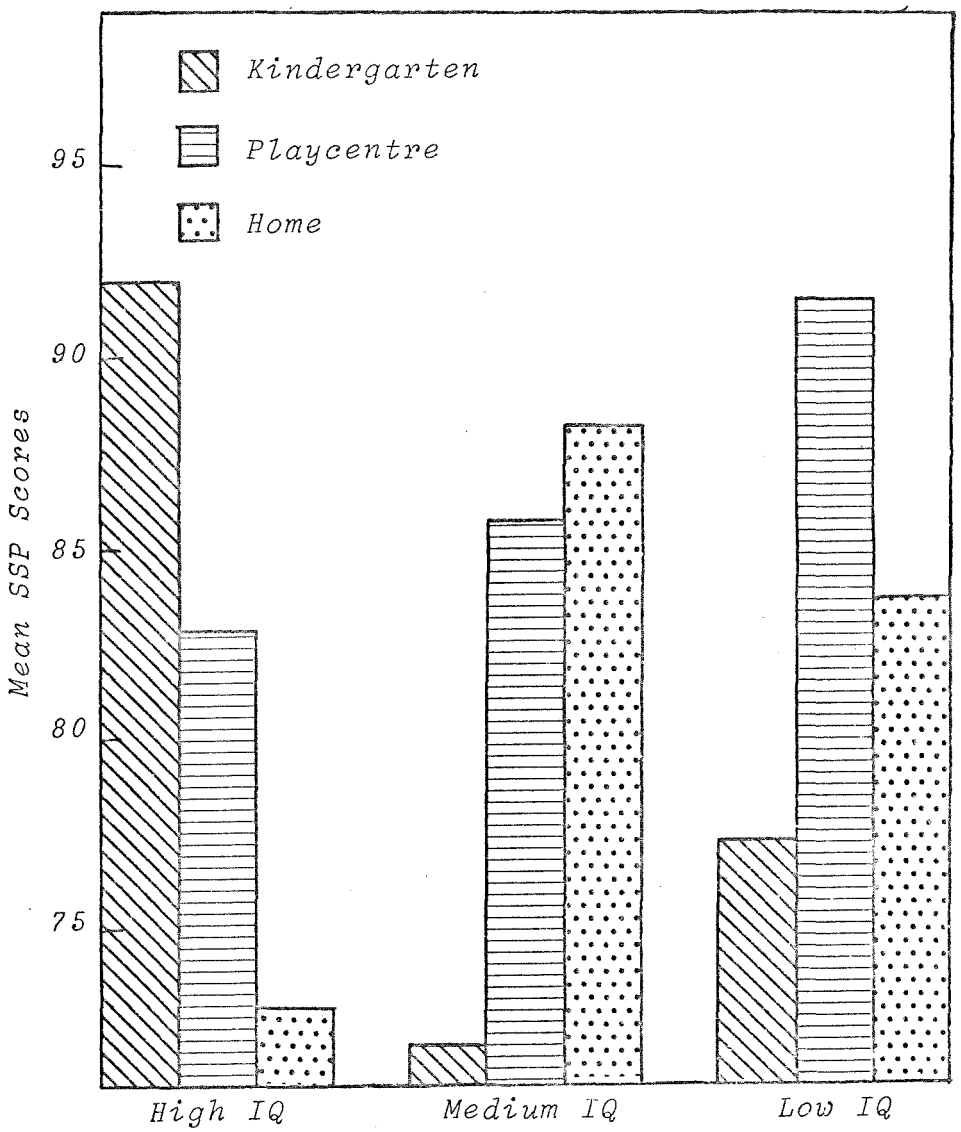

Figure 4. Mean SSP scores as a function of preschool experience for high, medium, and low IQ girls.

admission showed higher SSP scores than high IQ boys who attended either playcentre or kindergarten. For middle and low IQ boys, the reverse was true with non attendance at preschool associated with the lowest SSP scores. The results for girls (Figure 4) are almost the complete reverse of those for the boys. High IQ girls who did not attend preschool showed lower SSP scores than high IQ girls who had attended either playcentre or kindergarten. Nonattendance at preschool was associated with higher SSP scores for medium IQ girls, while low IQ girls who did not attend preschool showed higher SSP scores than those who attended kindergarten and only slightly lower scores than those who attended playcentre. These findings are very confusing to say the least. It seems clear however that the original results are obscured to some extent through the variability associated with the children's IQs. It must also be noted however that no significant results were obtained from the analyses of separate play categories.

Size of family was the moderator variable used in the third set of exploratory analyses. Two levels of family size were used - large families (3 or more children) and small families (less than 3 children). Three way analyses of variance were undertaken on the dependent variable measures. No significant main or interaction effects were obtained from the analyses of SSP, SA and RA scores, and separate play category 1, 2, 4, 5 and 6 scores. A significant main effect for size of family was obtained from the analysis of teachers' ratings of social acceptability (Table 14). Teachers consistently rated children from large families as more socially acceptable to other children than children from small families irrespective of the preschool experience or sex of the children

Table 14

Analysis of Variance of
Teachers' Ratings of Social Acceptability
with Family Size incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.62	0.87	0.64
Preschool (B)	2	0.48	0.67	0.51
No. in family (C)	1	4.65	6.53	0.01
A x B	2	0.02	0.03	0.96
A x C	1	0.59	0.83	0.63
B x C	2	0.28	0.40	0.67
A x B x C	2	0.72	1.01	0.37

($\bar{X}_l$ = 2.29, $\bar{X}_s$ = 2.79).[4] A significant sex x family size interaction was obtained from the analysis of onlooker behaviour (play category 3). The results are presented in Table 15 and are shown graphically in Figure 5. It is apparent that whereas boys from small families showed more onlooker behaviour than boys from large families, the reverse was true for girls. The above results suggest that size of family when considered as a dichotomy did not obscure markedly the major findings relating to preschool experiences.

In the final set of exploratory three way analyses of variance of the dependent variable measures, position in the family was used as the moderator variable. Children were classified according to whether they were first born, last born or middle born (neither first nor last born). No significant main or interaction effects were obtained from the analyses of scores for play categories 1, 3, 4, 5 and 6, and RA and SA scores. The analysis of solitary behaviour (Category 2) yielded a significant sex x preschool x family position interaction effect (Table 16). The cell means are presented graphically in Figures 6 and 7. It is apparent that whereas in boys playcentre attenders generally showed more solitary behaviour than either kindergarten or home children with the effect being most pronounced in middle-borns, this trend was not apparent in girls except in the case of last-borns.

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[4] Lower case letters l and s are used to denote large and small families respectively. Teachers' ratings ranged from 1 (high) to 5 (low).

Table 15

Analysis of Variance of
Onlooker Behaviour
with Family Size incorporated as a Moderator Variable.

Source	df	MS	F	p
Sex (A)	1	12.39	1.92	0.16
Preschool (B)	2	5.00	0.77	0.53
No. in family (C)	1	0.02	0.00	0.95
A x B	2	11.33	1.77	0.17
A x C	1	25.99	4.04	0.04
B x C	2	5.55	0.86	0.57
A x B x C	2	5.22	0.81	0.54

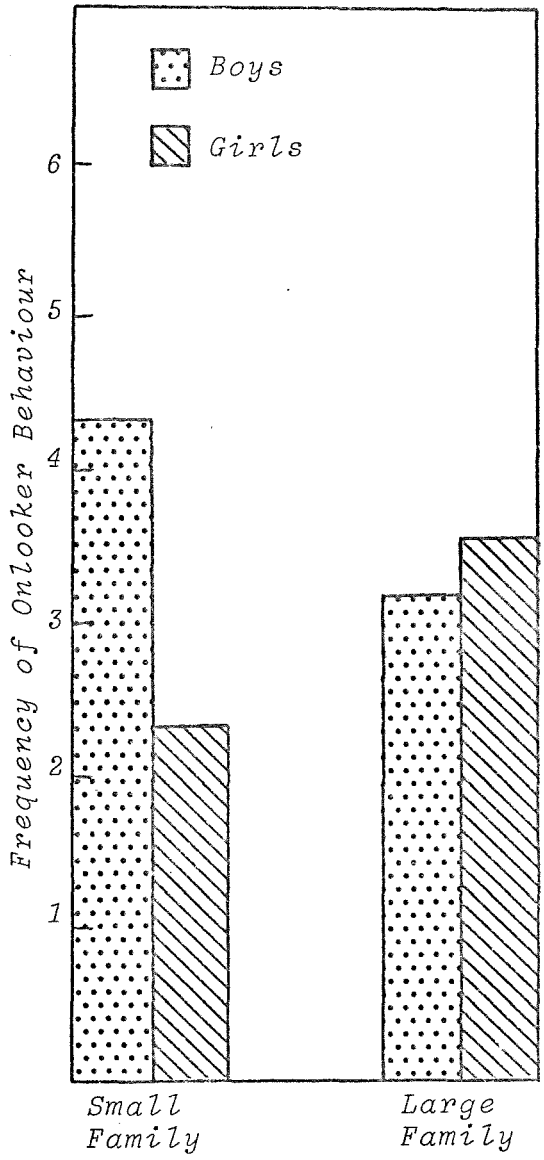

Figure 5. Mean frequency of Onlooker Behaviour as a function of sex and family size.

Table 16

Analysis of Variance of
Solitary Behaviour
with Position in the Family Incorporated
as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.02	0.00	0.95
Preschool (B)	2	22.48	4.27	0.01
Position in family (C)	2	7.51	1.42	0.24
A x B	2	6.77	1.29	0.28
A x C	2	4.24	0.80	0.55
B x C	4	10.70	2.03	0.10
A x B x C	4	21.18	4.02	0.01

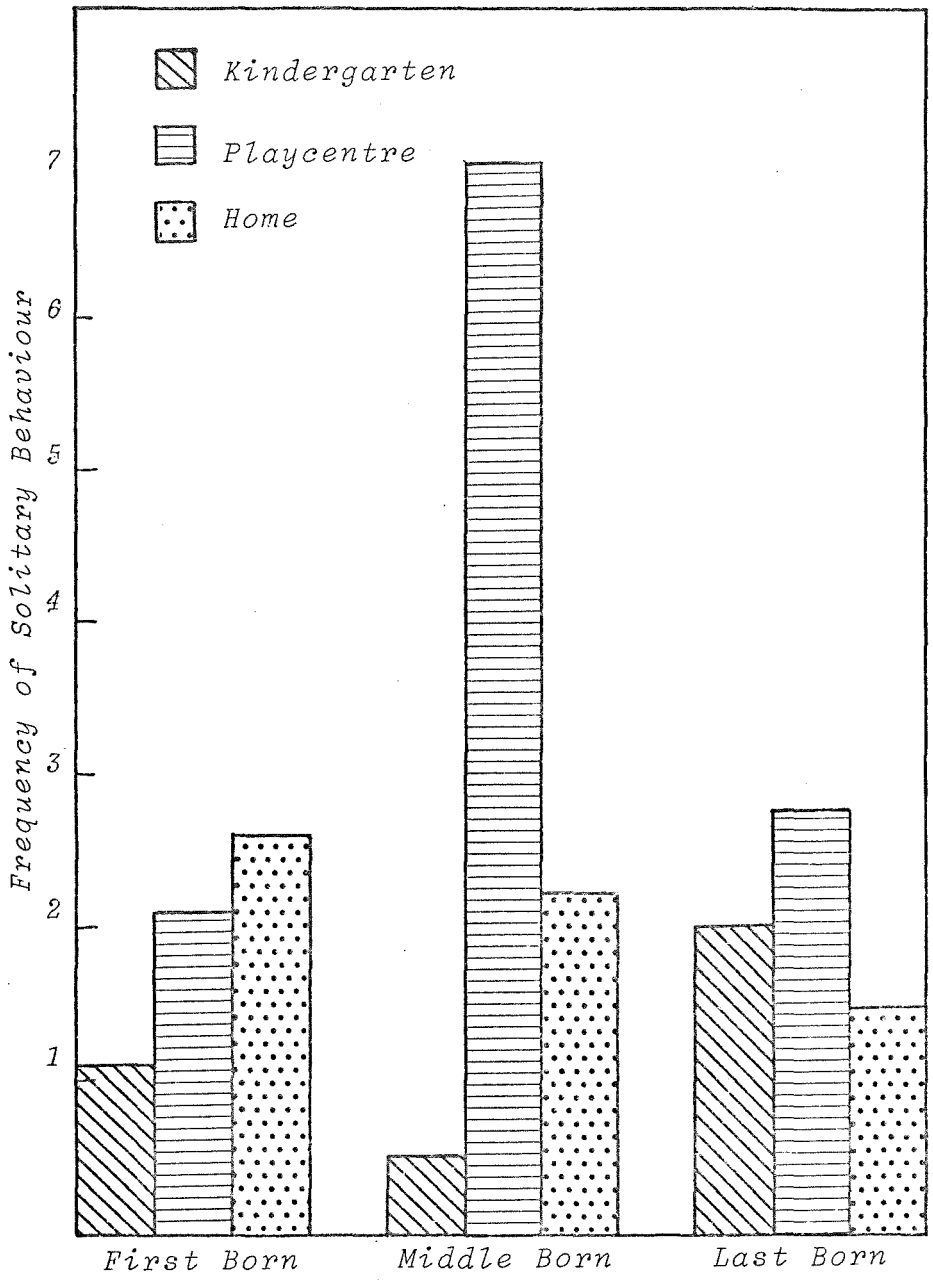

Figure 6. Mean frequency of Solitary Behaviour for boys, as a function of preschool experience and position in the family.

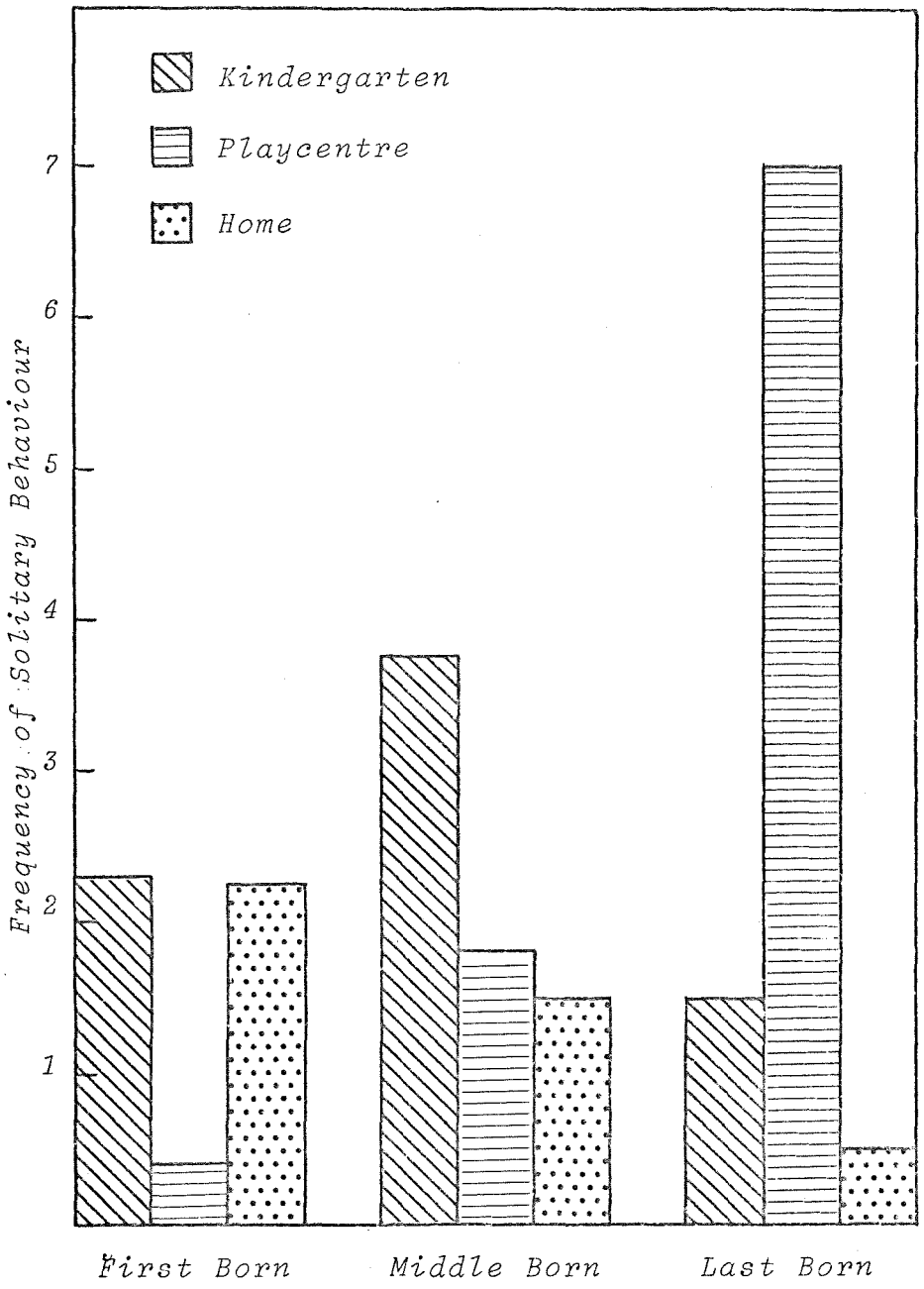

Figure 7. Mean frequency of Solitary Behaviour for girls, as a function of preschool experience and position in the family.

A significant preschool x family position interaction was obtained from the analysis of SSP scores (Table 17). Figure 8 presents the means for preschool and family groups summed over sexes. First born children who attended either kindergarten or playcentre obtained higher SSP scores than those who did not attend preschool, whereas the reverse was true for last born and to a slightly lesser extent, middle born children. Consequently, in terms of overall degree of social interaction shown, first-borns appeared to benefit from preschool attendance, and neither middle-borns nor last-borns appeared to suffer socially from the lack of such attendance. Assuming that extent of social play during the preschool years is directly related to the degree of social interaction shown during the first year at school, the most likely interpretation of the finding would appear to be that while first borns probably had only younger brothers and sisters at home (who would often be too small to play with) middle and last borns would be more likely to have had children to play with during their preschool years.

Table 18 presents the results of the analysis of teachers' ratings of social acceptability. A significant main effect was obtained for family position. Teachers rated middle born children as more socially acceptable than first or last borns ($\bar{X}_f = 2.60$, $\bar{X}_m = 2.11$, $\bar{X}_l = 2.78$).[5] No other main or interaction effects were significant.

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[5] Lower case letters f, m and l are used to denote first, middle and last born children respectively. Teachers' ratings ranged from 1 (high) to 5 (low)

Table 17

Analysis of Variance of
SSP Scores
with Position in the Family
incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	172.55	1.08	0.30
Preschool (B)	2	120.37	0.76	0.52
Position (C)	2	449.23	2.83	0.06
A x B	2	285.50	1.80	0.17
A x C	2	21.84	0.14	0.87
B x C	4	381.89	2.41	0.05
A x B x C	4	221.82	1.40	0.24

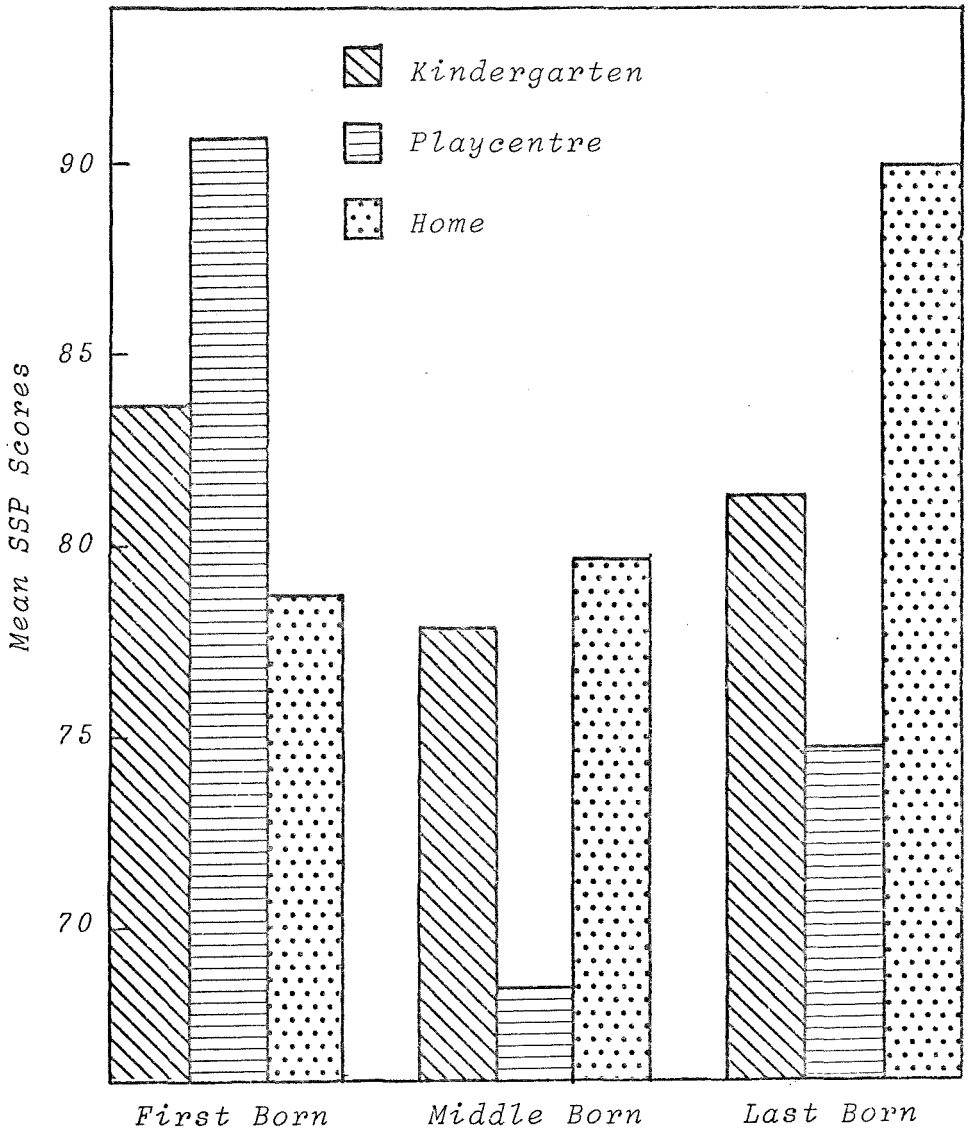

Figure 8: Mean SSP scores as a function of preschool experienc and position in the family

Table 18

Analysis of Variance of
Teacher Ratings of Social Acceptability
with Position in the Family
incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.67	0.97	0.67
Preschool (B)	2	0.20	0.29	0.75
Position (C)	2	2.47	3.58	0.03
A x B	2	0.26	0.37	0.69
A x C	2	0.43	0.62	0.55
B x C	4	0.77	1.12	0.35
A x B x C	4	0.24	0.34	0.84

It would thus appear that a child's position in his family moderated to some extent the effects of preschool experience in the present sample.

A further set of exploratory analyses were undertaken using combined measures of social adaptation. It was reasoned that the combination of these measures might yield a more powerful description of social functioning than the single estimates considered separately. Children were classified as highly sociable if they scored above the mean for the total sample on sociometric ratings and on teacher ratings of their social acceptability and if their play behaviour was predominantly in the upper scale categories (i.e., more than 50% of their observations were rated in categories 4, 5 or 6). Comparisons were made between kindergarten and playcentre groups, and between preschool (kindergarten and playcentre combined) attenders and non-attenders using the Z test for independent proportions (Ferguson, 1971). Neither the difference between kindergarten (15.4%) and playcentre (23.3%) children ($Z = 0.79$) nor that between attenders (18.3%) and non-attenders (33.3%) of preschool ($Z = 0.91$), was significant ($p > .05$). This finding is consistent with the results from the analyses of variance.

In summary, the results of the exploratory analyses of the dependent variable measures indicate that the original results were obscured to some extent by the variability associated with the children's IQs and their family positions, but no new light was shed on the effects of preschool attendance from the analysis of combined measures. Clearly it would be desirable to incorporate IQ levels and family position as planned independent variables in subsequent investigations of the effects of preschool attendance.

Discussion

The results of the primary analyses provided no support for the experimental hypotheses. These findings appear to indicate that children who attended kindergarten, those who attended playcentre, and those who did not attend a preschool did not differ during their first year at school in terms of the frequency of occurrence of the six types of play behaviour, the magnitude of SSP, SA and RA scores, and of teachers' ratings of their social acceptability. While further exploratory analyses indicated that variations in the children's IQs and in their family positions obscured, to some extent, differences between preschool groups on several dependent variable measures, the similarity of the three groups on almost all measures was most noticeable. A number of factors could account for the present results.

Firstly, it is possible that there are no differences between groups of children exposed to the three different kinds of preschool experience. It might well be that any differences there are between kindergarten and playcentre programmes are very slight in terms of their effects on the children concerned. Similarly New Zealand preschool programmes may not provide experiences relevant to social development, which differ from those a child can acquire at home. These possibilities seem unlikely in view of the expectations held for preschools in terms of their educative functions and the unique social learning opportunities which they appear to offer. Moreover, this result seems to be at variance with the findings from overseas studies.

Secondly, it is possible that there are in fact differences between those children who have attended kindergarten, those who have been at playcentre, and those who have not attended preschool prior to school admission, but because of a number of problems associated with a study of this nature, the differences have been masked. The inability to randomly assign children to preschool treatments is a major methodological problem. Parents were able to choose the preschool their child would attend (if they wished him to attend and if there was a vacancy). It was thus not possible to control for such factors as parental aspirations for their children, parental beliefs about preschool, etc. Consequently intergroup characteristics may well have varied greatly prior to preschool participation and the effects of attendance or non-attendance at kindergarten vs. playcentre would have been obscured. Unless the children are randomly assigned to preschool experiences, alternative possibilities such as these can not be discounted. Some data on choice of preschool were obtained. The results are presented in Table 19. While the total chi-square value is slightly lower than is required for significance ($\alpha = .05$) it is apparent that there are differences in the distributions of choices for kindergarten and playcentre parents. While approximately 42% of the playcentre group attended a playcentre because there was no alternative preschool available, only 14% of the kindergarten group attended kindergarten for this reason. Despite the nonsignificant chi-square it is apparent that the bases of choice of the parents of kindergarten and playcentre children can not safely be considered equivalent. Moreover, there could well be other differences between the groups which are masking the effects of preschool treatments.

Table 19

Frequency of Reasons Given for Parents' Choices of Preschool

Reason	Kindergarten	Play-Centre	df	X^2
1[a]	11	8	1	0.126
2[b]	13	6	1	1.625
3[c]	4	10	1	3.602[d]
		TOTAL	2	5.353[e]

a Reason 1 - The preschool chosen was the closest to home.

b Reason 2 - The preschool was chosen because parents believed that it offered the best programme.

c Reason 3 - There was no alternative preschool available or it was impossible to gain admission to another preschool.

d $X^2_{.05}$ (1) = 3.84 (two-tailed)

e $X^2_{.05}$ (2) = 5.99 (two-tailed)

An allied problem is the lack of pretest measures on the children concerned. Since the groups were not randomly assigned to preschool treatments, this problem is particularly difficult. It is possible that the children differed considerably prior to their preschool experiences and that they became more similar as a result of these experiences. Given that the random assignment of subjects to preschool experiences could be difficult to implement the possibility of obtaining pretest information must be considered. Such information could no doubt be obtained though if it was to be incorporated it is clear that a long term longitudinal study would be involved, and it is not clear whether equivalence on measures at age 3 is a valid basis for interpreting differences on the same measure more than two years later. Moreover there would possibly be a sizable amount of attrition in the years intervening between pre- and post-testing. A cross-sectional study would overcome some of these problems but would raise others (e.g., the comparability of the two samples).

A further problem regarding the comparability of the groups arose from the fact that a greater proportion of preschool non-attenders than attenders came from low SES homes. Consequently the sample was slightly biased towards a lower SES level. It is difficult to speculate on how this might affect the results, but the point needs to be noted. In addition, although an attempt was made to match the trios for family size, and subjects' positions in their families, it was not possible to achieve completely adequate matching because non-attenders generally came from larger families in which they were the later children. There was a tendency, on the other hand, for kindergarten and playcentre children to come from somewhat smaller families in which they were the first or

middle born. The additional analyses indicated that variations in the SES and family position of the children moderated the effects of preschool experience and it could well be that differences between the groups especially in terms of SES and family position resulted in an inadequate comparison of the effects of preschool attendance.

A third possible explanation of the results concerns the various measures which were used to assess inter-group differences. Direct observations of play had to be made in a manner which was as unobtrusive as possible to avoid influencing the children's play behaviour. It was thus necessary for the observer to work some distance away from where the child was playing and so it was possibl to guage only the most obvious manifestations of play. Any inter-change between the children was inevitably lost. Moreover, it seems likely that the scale used to categorize play interactions is not sufficiently refined to distinguish between subtle differences in children's play. For example, "cooperative play" was used in the rating procedure to cover all group behaviour aimed at "achieving a goal", and no distinction was possible between aggressive and more constructive and cooperative goal behaviour.

Teacher ratings may well reflect the biases and predispositio of teachers as much as if not more than the actual character-istics of the children rated (Cronbach, 1970). Although an attempt was made to minimize teacher bias by informing the teachers of the purpose of the study only after they had actually rated the children, the possibility of such bias can not be completely discounted. If the teachers had in fact been biased favourably towards preschool attenders (informal comments from the teachers regarding the way children

bias) preschool attenders should have been favoured. It is interesting to note, however, that teacher ratings failed to differentiate between children who had attended preschool and those who had remained at home in terms of their social adjustment.

Sociometric techniques have also been criticized on various grounds but especially in terms of their validity (Dunnington, 1957). It has been suggested that children's alliances are peculiarly transitory, based more on immediate physical presence than on any long-lasting friendly relationship. There is no reason to suppose, however, that such limitations would affect one group more than any other. Moreover, it has also been argued that while children's actual choices are very transitory, the essential popularity of individual children in fact changes only slightly, if at all, and thus children chosen a certain number of times on one occasion will most likely be chosen an equivalent number of times on subsequent occasions even though the children choosing them may have changed (Kerlinger, 1973). While there are obviously a number of problems associated with the use of sociometric measures, it seems very likely that the three groups of children under study were not distinct sociometrically.

Finally, it could be that observations were made on the children too long after they had started school. Observations were made over a period of five months, and in most cases the trios of children had been at school for at least three months prior to being observed. It is possible that children might have differed in terms of their immediate adjustments to school, but that these differences had disappeared by the time that they were observed.

This is a very real problem but it is difficult to see how it could have been overcome in the present study. It might have been possible to ask schools to notify the investigator as soon as new children were admitted to the infant department, and in that way observations could have been made within the first week of children's schooling. Problems would have arisen however over: 1) The availability of observers. Some schools admit all new entrants on certain days only, thus a number of children might have missed being observed; 2) The availability of sufficient time to match children; 3) The number of children who would have had to be observed in order to ensure adequate post-observation matching; and 4) The inability to control for intrasession history. The three children who would eventually have been matched, might not have been observed on the same day under the same conditions.

If possible adjustment differences do in fact disappear very rapidly, it could be argued that they are unimportant differences. Equally likely, however, would be the suggestion that initial adjustments to school may well shape a child's attitude for many years, even after immediate adjustment difficulties have disappeared. Thus any differences between children with differing preschool experiences, regardless of their durability, may well be very important factors in the children's continued adjustment to school.

In brief, while there were no apparent differences between groups of children who had participated in three different kinds of preschool experience, the results could well be attributed to difficulties with a study of this nature rather than any lack of difference between the three groups of children involved. If it

had been possible to overcome such difficulties the results of this study could well have been very different. Consequently, a replication of the present study in which an attempt is made to incorporate some of the methodological considerations noted above seems a worthwhile next step.

CHAPTER 5

SUMMARY AND CONCLUSIONS

Two major types of preschools, kindergartens and playcentres, have been in operation in New Zealand for many years, and increasing numbers of children are attending these facilities. While many claims have been made about the effects of New Zealand preschool attendance on children's development only two empirical studies have been reported. Both studies were concerned with the effects of attendance at kindergarten and the results suggested that such attendance had beneficial effects on children's development. No study of the effects of playcentre participation has been reported. It has been suggested (Hill, 1971) that playcentres and kindergartens differ to some degree in the emphases placed in their programmes on organized academic activities, and in the amount of adult control or parental involvement. Overseas research has indicated that these factors can affect children's social development. It thus seemed important to examine the differential effects of kindergartens and playcentres on the children concerned. In addition, much has been written overseas about the advantages of attendance compared with non-attendance at preschool. While several studies have indicated such advantages, the majority have yielded inconclusive findings. To date, no New Zealand study has included children from both playcentres and kindergartens in an assessment of the general effects of preschool attendance. Two studies have examined the effects of New Zealand kindergarten attendance versus non-attendance. In both cases results in favour of attendance were obtained. The present study was concerned with the effects of

preschool attendance on children's social development during their first year at school, and children who had attended kindergartens and playcentres were included as well as a group of children who had not attended preschool. It was hypothesized that differences would be obtained between kindergarten and playcentre attenders and between children who had attended preschool (either kindergarten or playcentre) and those who had remained at home.

Thirty children who had attended kindergarten, 30 from playcentre, and 30 who had not attended preschool prior to school admission were selected, and an attempt was made to match them in trios (one child from each of the 3 groups) on sex, age, IQ, SES, number of siblings, and position in family. Each particular trio was drawn from the same school class to minimize intergroup differences, and the three children in each trio were observed on the same day in a counterbalanced order to control for possible differences in intra-session history. Measures of the children's social development including the frequency of different types of play behaviour and the extent of social interaction shown in their play behaviour, were obtained.

No significant differences between the groups in terms of the predominance of particular types of play behaviour (separate play category frequencies), the extent of social interaction observed during play (total social participation scores), and their social acceptability according to teachers' ratings and two sociometric measures of peer acceptability, were found.

It is possible that there are no major differences between the effects of kindergarten attendance, playcentre attendance, and non-attendance at a preschool on children's social development, and that the results reflect the lack of difference. In view of the differential emphases of kindergartens and playcentres and the apparently unique opportunities for social learning which preschools offer, this possibility seems unlikely. It is also possible that there are important differences associated with the three types of preschool experiences which have been masked in the present study. Subsequent exploratory analyses suggested that variations in the children's IQs and family positions obscured, to some extent, the relationship between preschool experience and the dependent variable measures. Further substantive problems associated with studies of this nature which may also have influenced the results include the inability to randomly assign children to preschool experiences, the lack of pretest information, and the relative crudity of dependent variable measures.

Implications for Education

If there are in fact no differences between the three types of preschool experience in terms of their influence on children's social development, the frequently heard claim that preschool programmes provide children with essential social learning experiences would be unfounded, as would be the claims of kindergarten and playcentre advocates. The implications for education, especially with regard to the necessity for continued provision

of existing preschool facilities, are immediately obvious. If such preschools have no major influence on children's social development their influence on other areas of development as well as the question of their place and necessity in children's education would need to be examined.

On the other hand, if preschools do facilitate children's social development, or if they help children in other ways (in terms of their cognitive development, emotional adjustment, etc), efforts to provide such facilities would be well founded. It is not possible, on the basis of the present results, to determine the effects of preschool attendance on children's social development. Nor is it possible to say whether or not there are real differences between kindergartens and playcentres in terms of their effects on the social development of the children concerned. Until the effects of kindergarten and playcentre attendance have been adequately determined, curtailment of, or exclusive reliance upon, either of these forms of preschool education would seem premature.

Future Research Needs

Clearly, further examination of the effects of kindergarten and playcentre attendance is required. The probability that random assignment of children to preschool treatments will not be possible, is a formidable methodological problem. Although quasi-experimental designs such as the one used in the present investigation are available to handle intact groups, they are not completely adequate to determine the effects of preschool attendance. The exploratory analyses undertaken in the present investigation indicated that the intellectual status of the children and their positions in their families should be incorporated as planned

moderator variables in subsequent investigations. At the same time, the dependent variable measures used in the present study were relatively crude and the use of additional and hopefully more sensitive indices of social development seems advisable. It is also apparent that research to date has focused on particular aspects of development. While it might not be feasible to attempt to assess the effects of preschool attendance on all major aspects of the child's development, it seems likely that multiple rather than particular developmental measures need to be incorporated if an adequate evaluation of preschool experience is to be obtained.

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APPENDICES

APPENDIX A

Intercorrelation Matrix of Dependent Variable Measures

Table 20

Intercorrelation (Pearson r) Matrix of Dependent Variable Measures: Total Sample (N = 90)

Dependent Variable	SSP	SA	RA	TR
SSP Score	...			
Social Acceptability (SA)	0.09	...		
Reciprocal Acceptability (RA)	-0.01	0.47	...	
Teachers' Ratings (TR)	0.00	0.08	0.04	...

*p .05 (two-tailed)

**p .01 (two-tailed)

APPENDIX B

Results of the Remainder of the Exploratory Analyses

Table 21 - 53

Table 21

Analysis of Variance of
Unoccupied Behaviour
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	1.90	0.86	0.64
Preschool (B)	2	0.85	0.39	0.68
SES (C)	2	3.29	1.49	0.22
A x B	2	0.22	0.10	0.90
A x C	2	0.67	0.30	0.74
B x C	4	2.25	1.02	0.40
A x B x C	4	2.11	0.95	0.56

Table 22

Analysis of Variance of
Solitary Behaviour
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	7.10	1.23	0.26
Preschool (B)	2	0.50	0.08	0.91
SES (C)	2	0.34	0.06	0.94
A x B	2	1.52	0.27	0.77
A x C	2	7.38	1.28	0.28
B x C	4	8.24	1.43	0.23
A x B x C	4	8.84	1.54	0.20

Table 23

Analysis of Variance of
Parallel Play
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	3.28	0.24	0.62
Preschool (B)	2	9.40	0.70	0.50
SES (C)	2	14.94	1.11	0.33
A x B	2	2.42	0.18	0.84
A x C	2	13.18	0.98	0.61
B x C	4	1.46	0.10	0.97
A x B x C	4	16.27	1.21	0.31

Table 24

Analysis of Variance of
Associative Play
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	8.23	0.31	0.59
Preschool (B)	2	9.58	0.36	0.70
SES (C)	2	25.05	0.94	0.60
A x B	2	24.05	0.91	0.58
A x C	2	22.71	0.86	0.56
B x C	4	58.93	2.22	0.07
A x B x C	4	12.43	0.46	0.76

Table 25

Analysis of Variance of
Cooperative Play
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	5.66	0.23	0.64
Preschool (B)	2	3.53	0.14	0.86
SES (C)	2	55.39	2.22	0.11
A x B	2	2.72	0.10	0.89
A x C	2	22.26	0.89	0.58
B x C	4	23.25	0.93	0.54
A x B x C	4	5.51	0.22	0.92

Table 26

Analysis of Variance of
SSP Scores
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	33.83	0.19	0.66
Preschool (B)	2	24.82	0.14	0.87
SES (C)	2	154.59	0.90	0.59
A x B	2	76.24	0.44	0.64
A x C	2	86.81	0.50	0.61
B x C	4	337.18	1.97	0.11
A x B x C	4	113.58	0.66	0.62

Table 27

Analysis of Variance of
SA Scores
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	4.18	0.61	0.56
Preschool (B)	2	12.57	1.82	0.17
SES (C)	2	0.90	0.13	0.88
A x B	2	4.87	0.71	0.50
A x C	2	7.18	1.04	0.36
B x C	4	5.81	0.84	0.50
A x B x C	4	3.26	0.47	0.76

Table 28

Analysis of Variance of
RA Scores
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.27	0.32	0.58
Preschool (B)	2	0.36	0.42	0.67
SES (C)	2	0.02	0.01	0.98
A x B	2	1.76	2.03	0.14
A x C	2	1.83	2.11	0.12
B x C	4	0.42	0.49	0.74
A x B x C	4	0.04	0.04	0.99

Table 29

Analysis of Variance of
Teachers' Rating Scores
with SES incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.00	0.00	0.94
Preschool (B)	2	0.16	0.22	0.80
SES (C)	2	0.03	0.04	0.95
A x B	2	0.16	0.22	0.80
A x C	2	0.97	1.39	0.25
B x C	4	1.05	1.51	0.21
A x B x C	4	0.40	0.57	0.68

Table 30

Analysis of Variance of
Unoccupied Behaviour
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	1.28	0.53	0.53
Preschool (B)	2	1.39	0.58	0.57
IQ (C)	2	0.29	0.12	0.88
A x B	2	0.30	0.01	0.98
A x C	2	0.40	0.16	0.84
B x C	4	0.80	0.33	0.85
A x B x C	4	1.52	0.63	0.64

Table 31

Analysis of Variance of
Solitary Behaviour
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.23	0.03	0.83
Preschool (B)	2	0.57	0.10	0.90
IQ (C)	2	5.53	0.93	0.59
A x B	2	6.46	1.08	0.34
A x C	2	2.01	0.34	0.72
B x C	4	3.19	0.53	0.74
A x B x C	4	10.57	1.77	0.14

Table 32

Analysis of Variance of
Onlooker Behaviour
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	13.10	1.97	0.16
Preschool (B)	2	7.00	1.05	0.35
IQ (C)	2	7.29	1.09	0.33
A x B	2	6.67	1.00	0.37
A x C	2	0.29	0.04	0.96
B x C	4	6.78	1.02	0.40
A x B x C	4	6.51	0.98	0.57

Table 33

Analysis of Variance of
Parallel Play
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	10.50	0.75	0.60
Preschool (B)	2	13.57	0.96	0.61
IQ (C)	2	0.64	0.04	0.96
A x B	2	0.66	0.04	0.95
A x C	2	15.06	1.07	0.35
B x C	4	5.35	0.38	0.82
A x B x C	4	11.02	0.78	0.54

Table 34

Analysis of Variance of
Associative Play
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.13	0.00	0.94
Preschool (B)	2	20.06	0.70	0.50
IQ (C)	2	47.05	1.65	0.19
A x B	2	3.39	0.11	0.88
A x C	2	0.54	0.01	0.98
B x C	4	25.57	0.90	0.52
A x B x C	4	15.52	0.54	0.71

Table 35

Analysis of Variance of
Cooperative Play
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	23.75	1.05	0.30
Preschool (B)	2	6.61	0.29	0.75
IQ (C)	2	56.34	2.50	0.08
A x B	2	2.39	0.10	0.89
A x C	2	11.88	0.53	0.60
B x C	4	15.45	0.69	0.60
A x B x C	4	42.95	1.90	0.11

Table 36

Analysis of Variance of
SA Scores
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.26	0.04	0.83
Preschool (B)	2	8.54	1.36	0.26
IQ (C)	2	4.06	0.65	0.52
A x B	2	2.49	0.40	0.68
A x C	2	4.65	0.74	0.51
B x C	4	3.50	0.56	0.69
A x B x C	4	9.05	1.45	0.22

Table 37

Analysis of Variance of
RA Scores
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.07	0.08	0.77
Preschool (B)	2	0.08	0.09	0.91
IQ (C)	2	0.74	0.89	0.58
A x B	2	1.80	2.16	0.12
A x C	2	1.92	2.29	0.11
B x C	4	0.11	0.12	0.97
A x B x C	4	0.20	0.24	0.91

Table 38

Analysis of Variance of
Teachers' Rating Scores
with IQ incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.16	0.20	0.66
Preschool (B)	2	0.17	0.22	0.80
IQ (C)	2	0.24	0.32	0.73
A x B	2	0.08	0.10	0.90
A x C	2	0.27	0.35	0.71
B x C	4	0.64	0.83	0.50
A x B x C	4	0.74	0.96	0.57

Table 39

Analysis of Variance of
Unoccupied Behaviour
with Family Size incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	1.26	0.56	0.54
Preschool (B)	2	1.40	0.63	0.53
Family Size (C)	1	1.14	0.51	0.51
A x B	2	0.30	0.13	0.87
A x C	1	3.15	1.42	0.23
B x C	2	3.41	1.54	0.22
A x B x C	2	1.86	0.83	0.56

Table 40

Analysis of Variance of
Solitary Behaviour
with Family Size incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.15	0.03	0.87
Preschool (B)	2	2.06	0.36	0.71
Family Size (C)	1	7.05	1.23	0.27
A x B	2	8.62	1.49	0.22
A x C	1	0.74	0.12	0.72
B x C	2	10.52	1.83	0.16
A x B x C	2	2.07	0.36	0.70

Table 41

Analysis of Variance of
Parallel Play
with Family Size incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	19.33	1.37	0.24
Preschool (B)	2	13.93	0.99	0.42
Family Size (C)	1	16.90	1.14	0.28
A x B	2	0.64	0.04	0.96
A x C	1	4.99	0.35	0.56
B x C	2	0.27	0.01	0.98
A x B x C	2	3.63	0.25	0.78

Table 42

Analysis of Variance of
Associative Play
with Family Size incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	4.30	0.15	0.70
Preschool (B)	2	19.53	0.69	0.51
Family Size (C)	1	8.59	0.30	0.59
A x B	2	16.02	0.56	0.57
A x C	1	1.57	0.05	0.81
B x C	2	26.52	0.93	0.59
A x B x C	2	42.73	1.50	0.23

Table 43

Analysis of Variance of
Cooperative Play
with Family Size incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	26.06	1.01	0.32
Preschool (B)	2	2.90	0.11	0.89
Family Size (C)	1	24.45	0.94	0.66
A x B	2	13.54	0.52	0.60
A x C	1	11.84	0.46	0.50
B x C	2	5.24	0.20	0.81
A x B x C	2	11.30	0.44	0.65

Table 44

Analysis of Variance of
SSP Scores
with Family Size incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	174.81	0.99	0.68
Preschool (B)	2	40.22	0.22	0.79
Family Size (C)	1	470.29	2.66	0.10
A x B	2	336.28	1.90	0.15
A x C	1	38.67	0.21	0.64
B x C	2	274.59	1.56	0.22
A x B x C	2	8.51	0.04	0.95

Table 45

Analysis of Variance of
SA Scores
with Family Size incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	4.93	0.59	0.5[illegible]
Preschool (B)	2	7.71	0.91	0.59
Family Size (C)	1	12.77	1.52	0.21
A x B	2	0.06	0.01	0.99
A x C	1	0.05	0.01	0.93
B x C	2	2.89	0.34	0.71
A x B x C	2	2.21	0.26	0.77

Table 46

Analysis of Variance of
RA Scores
with Family Size incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.04	0.05	0.83
Preschool (B)	2	0.20	0.25	0.79
Family Size (C)	1	1.55	1.86	0.17
A x B	2	1.18	1.41	0.24
A x C	1	0.00	0.00	0.95
B x C	2	0.22	0.26	0.77
A x B x C	2	0.02	0.02	0.97

Table 47

Analysis of Variance of
Unoccupied Behaviour
with Position in the Family
incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.48	0.22	0.64
Preschool (B)	2	0.65	0.30	0.74
Position (C)	2	2.58	1.19	0.31
A x B	2	0.30	0.13	0.87
A x C	2	1.12	0.51	0.60
B x C	4	1.82	0.84	0.51
A x B x C	4	2.13	0.98	0.57

Table 48

Analysis of Variance of
Onlooker Behaviour
with Position in the Family
incorporated as a Moderator Variable

Source	df	MS	F	P
Sex (A)	1	8.82	1.36	0.24
Preschool (B)	2	5.16	0.79	0.54
Position (C)	2	5.27	0.81	0.54
A x B	2	11.55	1.78	0.17
A x C	2	0.15	0.02	0.97
B x C	4	12.46	1.92	0.12
A x B x C	4	2.15	0.33	0.86

Table 49

Analysis of Variance of
Parallel Play
with Position in the Family
incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	9.82	0.75	0.60
Preschool (B)	2	4.68	0.36	0.71
Position (C)	2	3.50	0.27	0.77
A x B	2	2.04	0.15	0.85
A x C	2	7.62	0.58	0.57
B x C	4	12.52	0.95	0.56
A x B x C	4	21.77	1.66	0.16

Table 50

Analysis of Variance of
Associative Play
with Position in the Family
incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	4.87	0.16	0.68
Preschool (B)	2	10.94	0.36	0.69
Position (C)	2	33.55	1.13	0.33
A x B	2	9.33	0.31	0.74
A x C	2	23.15	0.78	0.53
B x C	4	20.45	0.69	0.60
A x B x C	4	27.81	0.93	0.55

Table 51

Analysis of Variance of
Cooperative Play
with Position in the Family
incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	55.69	2.16	0.14
Preschool (B)	2	1.84	0.07	0.93
Position (C)	2	34.26	1.33	0.27
A x B	2	4.83	0.18	0.83
A x C	2	1.75	0.06	0.93
B x C	4	23.32	0.90	0.53
A x B x C	4	7.76	0.30	0.87

Table 52

Analysis of Variance of
SA Scores
with Position in the Family
incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.05	0.00	0.93
Preschool (B)	2	7.79	0.93	0.59
Position (C)	2	2.37	0.28	0.75
A x B	2	4.09	0.49	0.62
A x C	2	0.19	0.02	0.98
B x C	4	5.63	0.67	0.61
A x B x C	4	7.48	0.89	0.53

Table 53

Analysis of Variance of
RA Scores
with Position in the Family
incorporated as a Moderator Variable

Source	df	MS	F	p
Sex (A)	1	0.01	0.00	0.93
Preschool (B)	2	0.38	0.42	0.65
Position (C)	2	0.14	0.16	0.85
A x B	2	1.89	2.13	0.12
A x C	2	0.41	0.47	0.63
B x C	4	0.29	0.32	0.86
A x B x C	4	0.35	0.39	0.81

APPENDIX C

Sample Data Sheet

Key:

U - Unoccupied Behaviour (Parten Scale)

S - Solitary Behaviour

O - Onlooker Behaviour

P - Parallel Play

A - Associative Play

C - Cooperative Play

M - Male

F - Female

C - Common

Child _____ Date _____ School _____

	TYPE OF BEHAVIOUR						SIZE OF GROUP				SEX OF GROUP			EQUIPMENT
TIME 1	U	S	O	P	A	C	2	3	4	4+	M	F	C	
15"														
30"														
45"														
60"														
TIME 2														
15"														
30"														
45"														
60"														
TIME 3														
15"														
30"														
45"														
60"														
TIME 4														
15"														
30"														
45"														
60"														
TIME 5														
15"														
30"														
45"														
60"														
SUMMARY														

APPENDIX D

Sample Parent Questionnaire

Research Questionnaire

Name: Age: Sex:

Number of Children in Family: | 1 | 2 | 3 | 4 | 5 | 5+ |

Their Ages and Sexes:
(e.g. 6yrs sister, 8 yrs brother)

Position of this child in family:
(E.G. Is he the thrid child?) _____

Are there other children in the neighbourhood? _____

If yes, are they older, younger or the same age as the subject?

_____

If yes, are they the same sex, opposite sex or a mixed group?

_____

Preschool Attendance:

Did your child attend: Kindergarten

Playcentre

None

Other

If "other", please explain: _____

How long did your child attend preschool? _____years,_____months

_____

Which ONE of the following figured most prominently in your choice of preschool? Please circle the most appropriate choice.

1. The preschool we chose was closest to our home.
2. We believed that the preschool we chose offered the most worthwhile programme.
3. There was no alternative preschool within reasonable distance of our home.
4. Another reason (please specify).

Father:

What is your present occupation? _____

_____

Did you attend any of the following?

University

Teachers' College

Technical Institute

Other _____

How many years were you there? _____

What degrees, diplomas, certificates, etc? _____

_____

Mother:

What is your present occupation? _____

_____

Was this the same as the occupation you had before you married?

_____

Did you attend any of the following?

University

Teacher's College

Technical Institute

Other _____

How many years were you there? _____

What degrees, diplomas, certificates, etc? _____

_____

I agree to my child's participation in this study: YES/NO

(Please cross out one which does not apply)

Thank you for your cooperation.