

The Training of Choice Behaviours in

Downs Syndrome and Normal Children.

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A B S T R A C T

The integration of Downs Syndrome Children into free-choice pre-school programmes requires the ability to make choices from a variety of play activities. Observations were made of Downs Syndrome and normal children in free-choice situations. Deficits in choice behaviours of both groups formed the basis of the training programme. Four major deficits emerged: (i) The children did not scan alternatives but chose the closest activity; (ii) The same activity was often repeated; (iii) Distractions interfered with completion of initial choice; (iv) Imitation of non-goal directed peer activity.

Three Downs Syndrome and three Normal Children who showed similar choice behaviours participated in the training. An additional three Normal children who demonstrated mature choice behaviours participated in the testing sessions only.

The training programme involved three phases: (i) structured table situation involving a choice from three different toys on the table; (ii) structured indoor choice involving a choice of three different activities located within 1½-2 feet of each other; (iv) free-choice with the use of phase two procedures if the child failed to make a choice or chose the closest activity. Pre-school staff were involved in phases two and three of the training programme.

Adult modelling, social reinforcement and systematic use of instructions were used to establish the behaviours. The children were tested on target behaviours before training and at the completion of each phase.

Results indicate an increase in target behaviours by the end of phase one, which was maintained in subsequent phases of training. Implications and directions for future research are discussed.

INTRODUCTION

In recent years there has been a trend towards the integration of Downs Syndrome children into their local preschools, rather than segregation at special schools for the handicapped. Integration into regular preschool programmes is seen as a beneficial educational alternative, since higher expectations are placed on the child and more opportunities for social interaction and imitation of more mature behaviours are provided (Carlson and Wandschneider, 1979).

However, such educational outcomes are not likely to result for Downs Syndrome children, without specific intervention. Research by Peck, Apolloni, Cooke and Rauer (1978) indicated that peer imitation of more advanced behaviours and social interaction occurred minimally or not at all when the teacher did not structure the situation. There is evidence that Downs Syndrome children can acquire a wide variety of behaviours, but these develop at a slower rate than normal children. The behaviours also need to be systematically taught by breaking the behaviours into small easily learned steps, so that the child's attention is directed to the relevant cues. This step-by-step approach has been shown to be most successful when social learning principles are used (Hanson, 1977).

Since Downs Syndrome children do not learn spontaneously from their interaction with the environment, it follows that many behaviours such as peer imitation, appropriate material usage and making purposeful choices need to be systematically taught. It is necessary to develop these behaviours, so that the child can cope more effectively in his/her environment and benefit from attending an integrated preschool programme. This study focusses on the development of mature choice behaviours in both Downs Syndrome and Normal children. This ability is important, since the three major organisations providing preschool education in New Zealand all stress that self-selection of activities is a

vital feature of their programme.

"In Playcentre a child has a free choice of play. This allows him to find his own level of play and companionship". (Playcentre Federation)

"The Kindergarten programme is a free activity, one which means the children have a free choice of materials". (Free Kindergarten Association)

"There should be equipment and materials freely available to the child for its own use in its own way". (N.Z. Association of Child Care Centres)

This type of preschool programme is based on the developmental theory of Piaget, with the goal that interaction with the environment encourages self-directed learning which is conducive to the child's overall development. As well as enhancing learning, self-selection encourages independence, (Hendrick, 1980) and also develops self-control (Kiernan, Jordan and Saunders, 1978). If such benefits are to occur, it follows that children must develop the skills necessary to make purposeful choices.

For too long it has been assumed that when children are placed in a free-choice preschool environment, they will automatically make choices that will enhance their learning. There are a number of factors that influence a child's choice of activity and not all are conducive to the child's development. For example, when a child's choice is continually dominated by choosing activities that are close to his/her immediate location, then some areas of the preschool environment are not explored at all and thus the child is not benefitting from the wide range of educational activities available. Furthermore with Downs Syndrome children, whose learning of skills is at a slower rate than Normal children, they are likely to develop

a limited repertoire of skills, inadequate for later school integration. Continually choosing activities near the child's immediate location as well as continually repeating the same activity is likely to hinder development as the child encounters a limited range of problem solving situations, thus not extending his/her range of behaviours.

This study developed as a result of a large number of observations, involving both Normal and Downs Syndrome children in free-choice situations. As there was a large number of qualitative differences among the children's choice behaviour, it was decided to identify some of the behaviours that were lacking in the Downs Syndrome children and a comparison group of Normal children, yet evident in another group of Normal children and to develop a training programme to teach these children mature choice behaviours.

The importance of making choices is considered a significant developmental goal despite lack of research concerning its development. Lange (1979) gives advice to preschool teachers on helping exceptional children make choices as preparation for mainstreaming, yet no criteria are established as to what constitutes a purposeful or mature choice. With the absence of this criteria the advice is of little value. For example, one of their strategies is to give children who cannot make choices the opportunity to go first. Going first may not lead to mature choice behaviour if the child had not developed the skill of viewing alternatives prior to making a choice.

Fallen and Mc Govern (1978) also recognise that handicapped children need to be helped in making choices, but again no goals concerning what are desirable choices are specified. Furthermore, being reinforced with the statement "You made a good choice", when the child is confronted with an apple or banana regardless of which

one the child takes is unlikely to develop the child's ability to choose. Firstly, the concept "choice" is abstract and will have little meaning to a young handicapped child who is likely to be at the pre-operational stage of development. Secondly, little discrimination is necessary if the child gets reinforced for whatever item he/she chooses.

Nelson (1975 and 1980) has carried out choice awareness programmes for older children (9 - 10 year olds). These programmes were more abstract and dealt with hypothetical situations rather than toys or play activities as in the case of the present study, yet the basis behind the programme throws light on the present situation - that children can be made aware of the things they can do to control their lives. Nelson's programmes assume that being aware of the vast number of different choices available generally leads to better choices and a greater sense of responsibility. This assumption is equally applicable to the present study.

The making of choices is a complex skill which must be generalised to many new situations. It involves selecting one of several alternatives and participation in the selected activity before making a new choice. This involves considerable self-control. Kiernan et al. (1978) have thrown light on the development of choice behaviours by listing a hierarchy of stages which they applied to the teaching of a young handicapped child. The aim of the programme was to teach the child to control flitting from one activity to another in the preschool environment. The child was placed in an individual teaching room with a teacher. She was given five tasks and when one was chosen, the teacher pushed the remaining out of sight. The procedure changed when the child was able to play consistently with the chosen alternative. Instead of the teacher pushing away the alternatives, the child was required to do so. The third part of the programme involved the child making a choice

and persisting at it with the alternatives still in front of her. The final step involved generalisation of the new behaviour to the classroom. It is not specified how this exactly took place, although the concluding statement indicates that generalisation was only partially successful as the child could not cope with more than one toy on the table.

This study failed to account for two important factors which probably contributed to its partial success. The procedure took place in an individual room and with only one teacher. Both these factors would limit the generalisation of the newly acquired behaviours.

Many mentally handicapped children do not generalise their skills to other settings or in the presence of others if not specifically taught. To overcome this, in the present study, four important methods to promote generalisation were incorporated into the training programme.

- i) use of naturalistic setting
- ii) use of regular preschool staff
- iii) introduction of distracting stimuli
- iv) fading out of continuous reinforcement once desirable choice making behaviours were established.

Few studies have focussed on what happens or how children make choices in the preschool environment. The Cognitively Oriented Curriculum, often referred to as the Ypsilanti Project (Weikart) views the making of decisions and choices as fundamental to development. While the Cognitively Oriented Curriculum includes more structured teacher-directed activities, for example, a specific time is set aside to help children plan their time, the rationale for placing such great emphasis on choice-making is applicable to the New Zealand situation where children make choices incidentally throughout the session. The rationale behind spending considerable time on planning, choosing and decision-making assumes

their activities. They become in control of their environment and can see that they are capable of making things happen to achieve their desired goal. When children are not capable of making mature choices, the environment controls their behaviour and they become passive recipients of their environment which is not conducive to the self-directed learning that takes place through active interaction. The Cognitively Oriented Curriculum has acknowledged the implications of the assumption that when placed in a free-play programme, children automatically choose activities that will enhance their development.

Such a view is a major rationale of the present study. In view of the little research available in the area of developing choice behaviour, this study aimed to develop further understanding by examining the feasibility of a training programme for Downs Syndrome and Normal children with deficient choice behaviour in the naturalistic setting of the free-choice preschool programme.

The researcher attempted to fulfill this aim by carrying out the programme in the context of the normal child/teacher relationship. This was felt to be an essential feature of the programme, since it seemed unlikely that young preschool children would have responded to a stranger.

Furthermore, since it is part of the researcher's work as an itinerant preschool teacher to devise training programmes to facilitate the integration of Down Syndrome children into their local preschools, such a programme could be completed with the minimum of disruption to the existing sessions. Further support concerning the desirability of teachers involved in early childhood education carrying out research is provided by Allen (1980). She states that if the integration of handicapped children is to continue, then research must focus on what is actually happening in the naturalistic preschool environment. Preschool staff are in a suitable position

to carry out such research, without having a negative effect on their teaching effectiveness. The present study supports Allen's plea for greater involvement by early childhood educators to assist in research. All staff members of the three preschools involved helped carry out the training programme.

METHOD.

1. Sample; Three Downs Syndrome and three Normal children who showed similar choice behaviours participated in the training. The Downs Syndrome children were part of an Early Intervention Programme since birth, which aimed to reduce the effects of progressive retardation. An aim of this programme has been to accelerate progress and keep the child within the mainstream of the local community which accounts for their placement in local preschools.

The three Normal children, referred to as the Comparison children were included to see if the same deficits in choice behaviour were evident as in the Downs Syndrome children and also to compare differences between the groups during and after training. Although deficient in mature choice behaviours, they were considered normally developing children. Their use of verbal language, participation in social interaction, sustained dramatic play and appropriate material usage indicated no developmental delays.

A further three Normal children, who demonstrated mature choice behaviours participated in the testing sessions only. (Control group). These children were included so that mature choice behaviours could be identified for the training programme and also to see whether the mature choice behaviours remained stable over time.

The children were identified on the basis of running records in the free-choice play programme. Confirmation of these characteristics was obtained through their performance on the Structured Observational

Measure, which was used to indicate if the behaviours evident in the free-choice programme were also evident in a less complex structured situation, when the child was confronted with the choosing of only two alternatives. Table one indicates the children who took part in the study, their chronological age at the commencement of training. and length of preschool attendance.

Table 1.

Downs Syndrome.			Comparison.			Control.		
Name	Chronological Age	Length of Preschool Attendance	Name	Chronological Age	Length of Preschool Attendance	Name	Chronological Age	Length of Preschool Attendance
Michael	51 months	16 months	Anne	42 months	12 months	Jason	48 months	12 months
Jill	50 months	14 months	Glen	48 months	12 months	Joanne	50 months	14 months
pet	58 months	18 months	Susan	42 months	9 months	Emma	58 months	22 months

Individual case studies concerning the children's choice behaviour in the free-play situation and during the Structured Observational Measure can be found in Appendix A.

2. Setting:

The training and Structured Observational Measure took place in the free-choice play programme in two Free Kindergartens and one Playcentre. One Kindergarten had two staff members and forty children, while the other had three and also forty children.

The playcentre had two staff members and at least two parent helpers present at each session. Twenty five children were on the roll.

The researcher/itinerant teacher was present for three half sessions per week during phase one and the first week of phase two, then one session per week until the termination of the training programme.

The setting varied over the three phases of the study.

Phase one: Training took place at the puzzle table as this was usually a quiet area, free from distractions. Up to three or four peers who were working on puzzles independently were usually present

as well as the researcher and the child who took part in the training programme. A choice of three different activities was offered at any one time. (See Appendix B for list of toys)

Phase two. A structured indoor choice was offered. Three different activities located within $1\frac{1}{2}$ - 2 feet of each other were offered. For example - blocks - drawing - dough.

Phase three. A free choice of activity was offered with the use of phase two procedures if the child failed to make a choice or chose the closest activity.

For phase two, any activity could be offered for self-selection, as long as the child was asked when not engaged in an activity. During the second week of the phase two and all of the phase three procedures, the preschool staff took over the training programme at least two times per week and more if the child attended more frequently. At the same time, the researcher continued the procedure one session each week.

The Structured Observational Measure always took place at the puzzle table.

3. Development of the Training Programme;

The target behaviours were established as the result of deficits observed in the choice behaviour of Downs Syndrome children and a comparison group of Normal children. These behaviours were evident in the further group of Normal children whose choice behaviour was considered mature. Thirty minutes running record observations of Downs Syndrome and Normal children in the free-choice play programme indicated four major deficits which formed the basis of the training.

- (i) Proximity; The children did not scan the alternatives available, but chose the closest activity.

- (ii) Repetition; A task was repeated without indicating the possibility of a new choice.
- (iii) Distraction; Unrelated objects or distractions often interfered with completion of initial choice.
- (iv) Imitation of Non-goal Directed Peer Activity; A child often followed a peer for a short distance, but did not participate in the peer's activity. Consequently, the child then went to the nearest activity.

It was decided to set a criterion written in behavioural terms for each of the above choice-related behaviours in phase one, so that their acquisition could be easily monitored and also so that the child could move through the training programme at his/her own pace.

Phase two followed on from the very structured table situation to a semi-structured situation which required application of all the skills developed in phase one. Phase three involved the use of all the skills in the free-choice situation. Each phase was planned so as to be progressively more difficult than the earlier one, with the terminal goal at the end of phase three being that the children in the training programme developed similar choice behaviours to the Normal children.

4. Structured Observational Measure. (S.O.M.)

The Structured Observational Measure was used not only to compare differences before and after the training programme, but also to indicate progress after each phase. This was important because if no changes in the development of mature behaviours occurred after

phases one or two, a change in procedure would be necessary. The measure was also used to indicate whether the choice behaviours occurring in the free-choice environment were evident in a more structured situation. A further purpose of this measure was to indicate whether the control children's choice behaviour remained stable over time.

The S.O.M. involved observing choice behaviour when a child was confronted with two familiar three-six piece puzzles. All the children were capable of completing them unhesitatingly to avoid the situation where a child did not choose due to lack of competence. Familiarity was also important so as to avoid a novel item influencing choice.

The four major deficits in choice behaviour formed the basis of the S.O.M. as well as a further category, suggestion. An example of the format of the S.O.M. can be found in appendix C.

Proximity. The child was confronted with two puzzles side by side, although one was deliberately placed right in front of the child. It was noted whether the child chose the closest or not. In the second situation, two puzzles were placed one above the other. Again, it was noted whether the child chose the closest one or not. In each situation, the researcher labelled each puzzle for the child as she put them out, and then asked the question. For example, "Here is a duck puzzle. Here is a car puzzle.

Show me which one you would like to do."

The order of labelling varied each time.

Repetition.

During the second instance of the proximity factor, the child was not offered any new puzzles and it was observed whether she repeated the same puzzle immediately after having completed it.

Distraction.

During the completion of a puzzle, the child was presented with an unrelated distraction. For example a peg, piece of string, nesting cup or shape. It was noted whether the child played with the distraction for more than five seconds, regardless of whether the child eventually finished the initial task or not.

Imitation.

Half-way through completing a puzzle a peer who was sitting next to the child was asked to leave in an obvious manner by interrupting the child, then walking away slowly, but not choosing anything to do. It was recorded whether the child left the task or not to follow the peer.

Suggestion.

Although this was not a target behaviour of the training programme, since it required an alteration in the staff's behaviour rather than children, this category was included, to see if any differences occurred in the children's response to a suggestion situation. A suggestion situation occurred when an adult offered only one choice. For example, "Would you like to do a painting?" During the (i) completion of a puzzle (ii) before starting another one (iii) on completion of a puzzle, the researcher pointed to another puzzle on the table and asked if the child wanted to do it. It was noted whether or not the child accepted the adult's suggestion.

Administration of the S.O.M.

The S.O.M. took approximately ten minutes and six different puzzles were used. Since different preschools were used and it was important that the puzzles were familiar, slightly different ones were used in each preschool.

Imitation of non-goal directed peer activity and response to distractions were observed during the completion of a puzzle once it had been noted whether the nearest or non-nearest puzzle had been chosen. Another choice of two puzzles was offered after this and when the child had made a choice, the researcher offered an alternative suggestion. It was recorded whether or not the child accepted the suggestion.

This procedure occurred two more times, so that three instances of each choice-related behaviour was observed, apart from the proximity factor of which six instances were observed.

Apart from asking the child which one she would like to do, each time the child was confronted with the choice of two puzzles, the researcher did not interfere or help the child in any way, unless she failed to make a response and in this case, the puzzles were labelled and the question was asked again. The distractions occurred without verbal comment and the peer was quietly told when it was time for her/him to go.

The S.O.M. was administered four times - before training, and at the completion of each phase of the training programme.

5. Description of the Training Procedures.

The study took place throughout the thirteen weeks of the second term, although the initial running records were taken during the last three weeks of the first term. Ten minutes of play behaviour in free-choice situations were recorded each week, thus a total of thirty minutes was recorded for each child. The S.O.M. was administered during week one and the week following each phase. The final running records were recorded immediately after the last S.O.M. at the end of the training programme. Table two indicates when the training programme and two types of observations took place.

	Term 2.												
	Weeks												
Term 1.	1	2	3	4	5	6	7	8	9	10	11	12	13
30 minutes running record observations on all Children	S.C.M. all Children	Phase one. (structured table situation) 9 sessions Downs Syndrome and Comparison Children			S.O.M. all Children	Phase two. (semi-structured indoor choice) 9-12 sessions 5 choices offered at each session. Downs Syndrome and Comparison Children			S.O.M. all Children	Phase three. (free-choice) 9-12 sessions 5 choices offered at each session. Downs Syndrome and Comparison Children			S.O.M. all Children 30 minutes running record observations on all Children

The training programme was divided into three phases - each phase being a progression from the earlier one. While preschool staff were involved in phase two and three, they were not aware in phase one of the purpose of the procedure or what the training involved. This was to reduce the possibility that they would continue training at a time when the researcher was not present.

To establish the behaviours, systematic use of instructions, adult modelling, combined with techniques such as physical prompting, shaping, fading of cues and social reinforcement were used. A major criticism of many programmes involving acquisition of skills is that the gains are often lost unless the researcher plans for maintenance and generalisation (Reese, 1978). Therefore in designing the programme, an emphasis was placed on using methods to promote generalisation.

Phase one; Phase one consisted of nine, ten-fifteen minutes sessions (three sessions each week). One Comparison child (Anne) received seven sessions due to absence. Phase one involved a structured situation where the child sat beside the researcher and had to make choices concerning the selection of the three different activities in front of her. During this phase there were four criteria to

be reached, at the child's own pace. If a child reached all four criteria before nine sessions had elapsed, the fifteen minutes training time was used to practise the criterion skills. This was done so that all the training children would receive the same amount of interaction with the researcher and also so that the S.O.M. could be administered to all the children in the same week. The child participated in the training when she was not engaged in purposeful activity. The researcher began by establishing eye contact with the child, then modelling as well as verbalising the expected behaviour.

Criterion One. The first criterion involved the skills of scanning (at this stage, this meant pointing to each alternative), taking the desired activity, and pushing away the alternatives. At this point, it did not matter whether the child continually chose the nearest activity or repeated the same one. More specifically the following behaviours were required.

When presented with three activities and asked the question: "Show me what you would like to do". X points briefly to all the alternatives, selects the desired one by placing it in front of her, pushes away the alternatives, completes the desired one, then returns it to its place, three out of four times.

The researcher always placed the activities in a different order after modelling, so as to avoid the child exactly copying what she did. The component skills were listed in behavioural terms, so that the more difficult skills could be given extra attention, and also so that it could easily be seen when the criteria was reached.

For example:

Points to each alternative

Takes activity in front of her

Pushes alternatives away

Completes chosen activity

Puts it away in same position.

The aim of this criterion was to establish the behaviour necessary for subsequent choice behaviour.

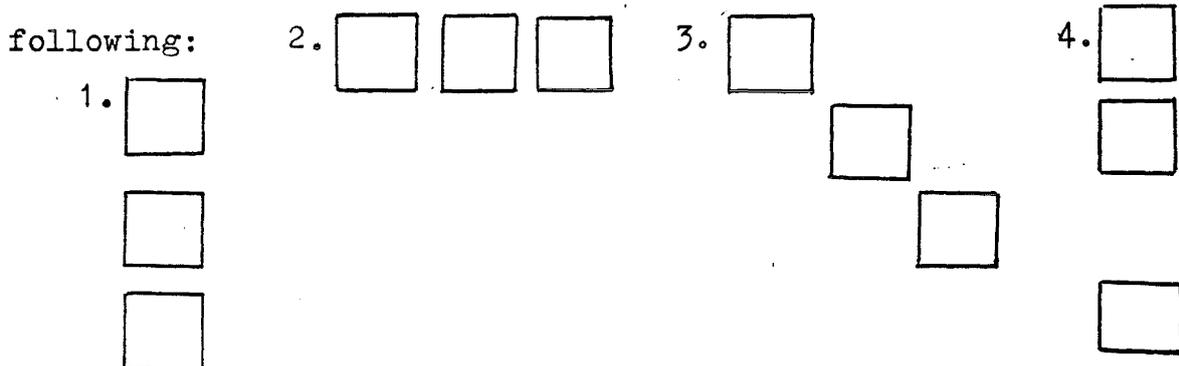
Criterion Two. (Proximity and Repetition)

The training for these factors proved difficult as it was important to avoid becoming too concerned with choosing activities other than the nearest, so as to convey to the child that choosing the nearest activity was never desirable.

To avoid this the researcher began the training by continually modelling the choosing of a non-nearest activity, then once that behaviour was reliably established, the researcher modelled choosing the nearest activity as often as the second or third activity. The following behaviour was required.

X will not always take the nearest activity, nor immediately repeat the same activity, three consecutive times.

The activities were placed in a variety of irregular ways in front of the child. For example, they were laid out in ways such as the following:



After modelling, the child was asked: "Show me which one you would like to do". If the child failed to make a choice, she was physically prompted to briefly point to each alternative, place a non-nearest activity in front of her, push away the alternatives, complete it, return it to its position on the table, then choose an activity not already done.

Continuous social reinforcement was given for each subskill with intermittent reinforcement as the behaviour became more established.

Criterion Three. (Distraction)

To indicate competence at persevering with one's initial choice when unrelated distractions were put forward, the following criterion was required.

When presented with an item unrelated to the chosen activity, X will handle it for no more than five seconds and cast it aside or ignore it, then continue with the initial choice, three out of four times.

The distractions used were different from those used in the S.O.M. These included small plastic animals, blocks, beads, cotton reels, pieces of wood, material and so on. The researcher decided to fade out pointing to each activity at this stage as all the children had demonstrated competence at scanning the alternatives without this prompt. For example: some children started reaching for puzzles at the other end of the table or shelf, without actually pointing to each activity on the table. However, pushing away the undesired alternatives was still included in this part of the training.

After the child had made a choice, the researcher unobtrusively placed the distraction on or near the child's activity, then modelled the desired behaviour, by throwing it off or ignoring it. The child received continuous social reinforcement each time the distraction was placed aside or ignored, and intermittent reinforcement for the subskills listed under criterion two.

Criterion Four. (Imitation of non-goal directed peer activity)

The child was required to fulfill criterion two, then halfway through completing an activity, the researcher asked a peer to leave in an obvious way by making a noise. At the same time, the peer told the training child she/he was going away. Each time the child started

a new activity, she was distracted by a peer leaving. The child was physically prompted to stay and received social reinforcement each time a peer left and the initial activity was completed. To complete this part of the training programme, the following criterion was required.

X will continue his/her initial choice of activity, when a peer leaves the table and engages in a non-goal directed activity three out of four times.

Phase two. Phase two focussed on the generalisation of skills learned in phase one to the wider indoor preschool setting. Instead of focussing on three activities that had a clear beginning and end and were performed in the one place with the child seated, the child was confronted with three different indoor activities, for example, dough, blocks, painting. Thus, the boundaries of when an activity began and finished were less clearly defined. The aim of this phase was to give the child practice at making mature choices - that is, in applying the previously learned skills to a more complex environment.

The behaviour to be established by the end of this phase was that when presented with a choice of three different activities within $1\frac{1}{2}$ - 2 feet of each other, X will demonstrate scanning of alternatives prior to making a choice. In this phase, scanning was defined as looking at the activity as the researcher pointed to it.

Phase two involved the staff of the three preschools. The researcher carried out the training for the first three sessions, so as to establish the behaviours and also to show the staff what was required. All staff then demonstrated the procedure on the third day in front of the researcher, to ensure it was being correctly undertaken. In the two kindergartens all staff members took turns at carrying out the training, while in the playcentre one member took on this responsibility. Each preschool was given a notebook to list the choices

offered, which member of staff undertook the procedure and which activity the child chose.

The initial three days training involved considerable adult modelling. For example, the researcher would point out and verbally label three activities next to each other from a position where all three could be clearly seen. She would then point to the chosen one, walk past the two alternatives and verbally reject them, then participate in the initial choice. On another occasion, she would demonstrate walking past a distraction such as a doll's pram to get to the chosen activity. Social reinforcement was given for pointing or verbally indicating the chosen activity, or walking straight to it, when asked the standard question. If the child refused the three alternatives offered and chose an alternative activity, this was accepted, as it was considered a mature behaviour.

Staff were not expected to model behaviour, nor stay and participate with the child in the chosen activity, but they were to ensure the child participated in the activity for at least a minute. It was possible to tell from the staff notebook whether training was carried out in the researcher's absence and also to see whether further modelling of mature choice behaviours were required. If a child continually chose the last activity or repeated one continually, then modelling of more desirable behaviours were necessary. Staff were required to offer the child five semi-structured choices during each session the child was present ~~except~~ on the day the researcher carried out the training. Phase one procedures were maintained informally by the researcher throughout phase two when the child chose an activity such as puzzles, paints or books, where it seemed appropriate to reinforce their use.

Phase Three. Preliminary data indicated that the children applied the skills established in phase one to the wider setting. Since mature behaviours were evident in the semi-structured phase two situation, it seemed appropriate to extend these behaviours to

the free-choice setting.

However, if a child failed to make a choice by not verbally indicating, pointing or moving immediately towards the activity, or chose the nearest activity without scanning alternatives, the semi-structured phase two procedure was used. The preschool staff continued to carry out phase three, with the exception of one session a week, when the researcher carried out the training. The standard question was asked. It was noted which activity the child chose and the location where the child was asked to make a choice. Staff were also asked to ensure the child carried out her choice. For example, if a child pointed to the swing and a trolley was in front of it which distracted the child, the teacher reminded the child of her initial choice and the child was shown how to push the distraction aside to achieve the initial goal.

Five free choices were offered during each session when the child was not engaged in purposeful activity. No adult modelling took place during this phase. The aim of this phase was to practise applying the skills established in phases one and two to the free-choice preschool programme.

RESULTS.

The most important finding of this study was that both Downs Syndrome and the Comparison group of Normal children had developed mature choice behaviours by the end of the training programme. Although the Downs Syndrome children took longer to reach the criteria than the Comparison children (see Table three), the data for the three groups after phase one closely resembles each other. This finding indicates that it is possible to teach Downs Syndrome and children with deficits in choice behaviours, to consider alternatives before making a choice, thus making a more purposeful and mature choice.

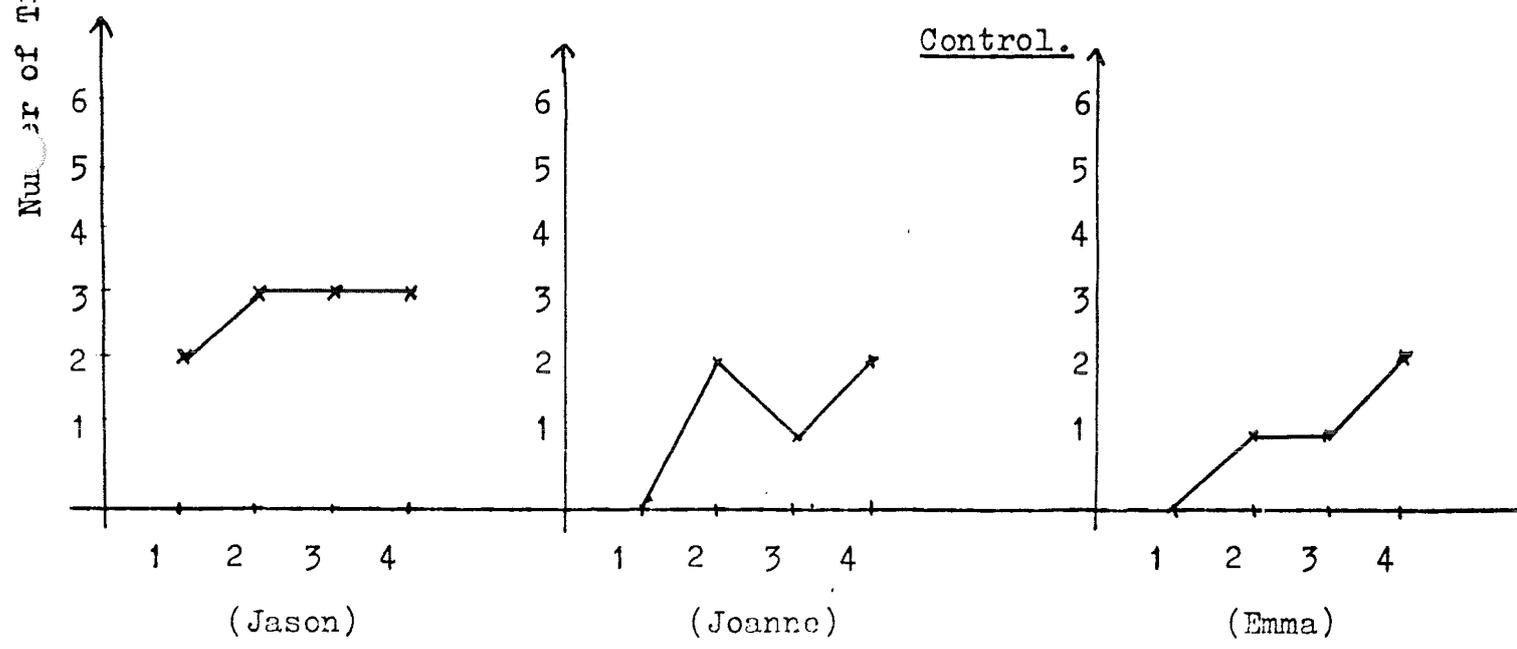
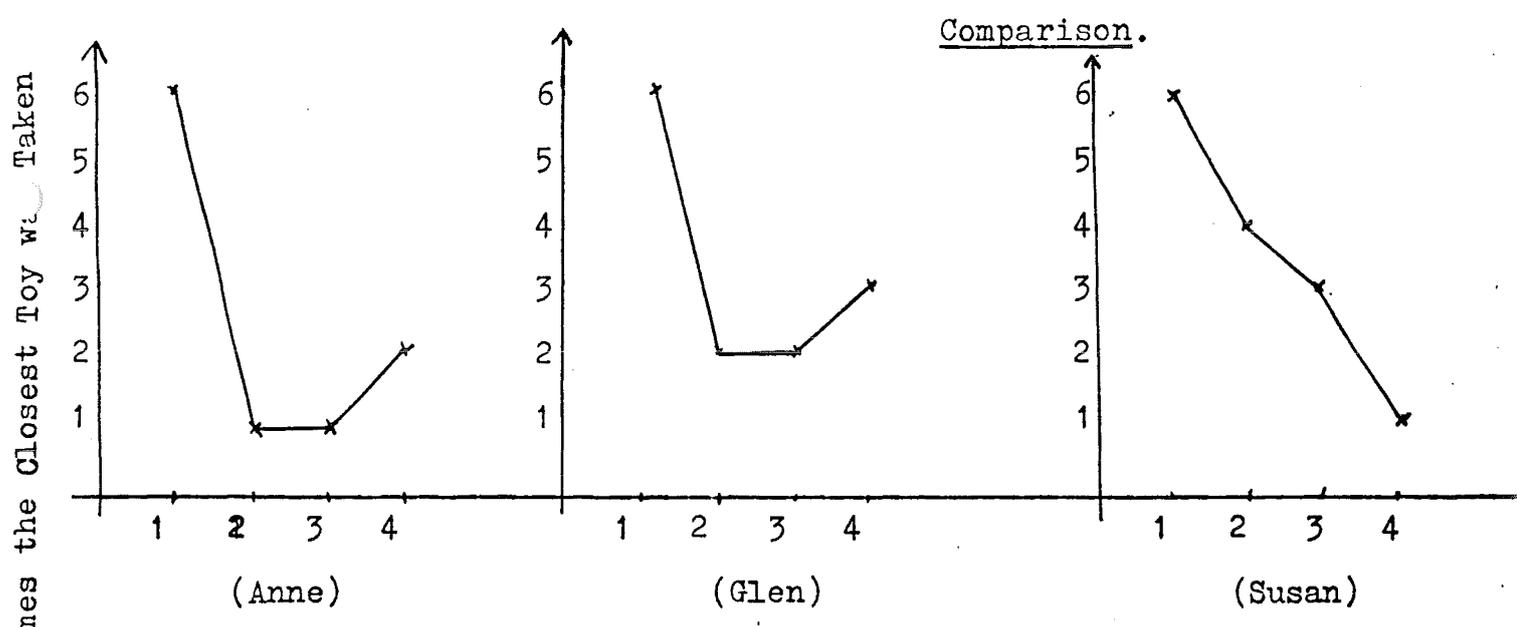
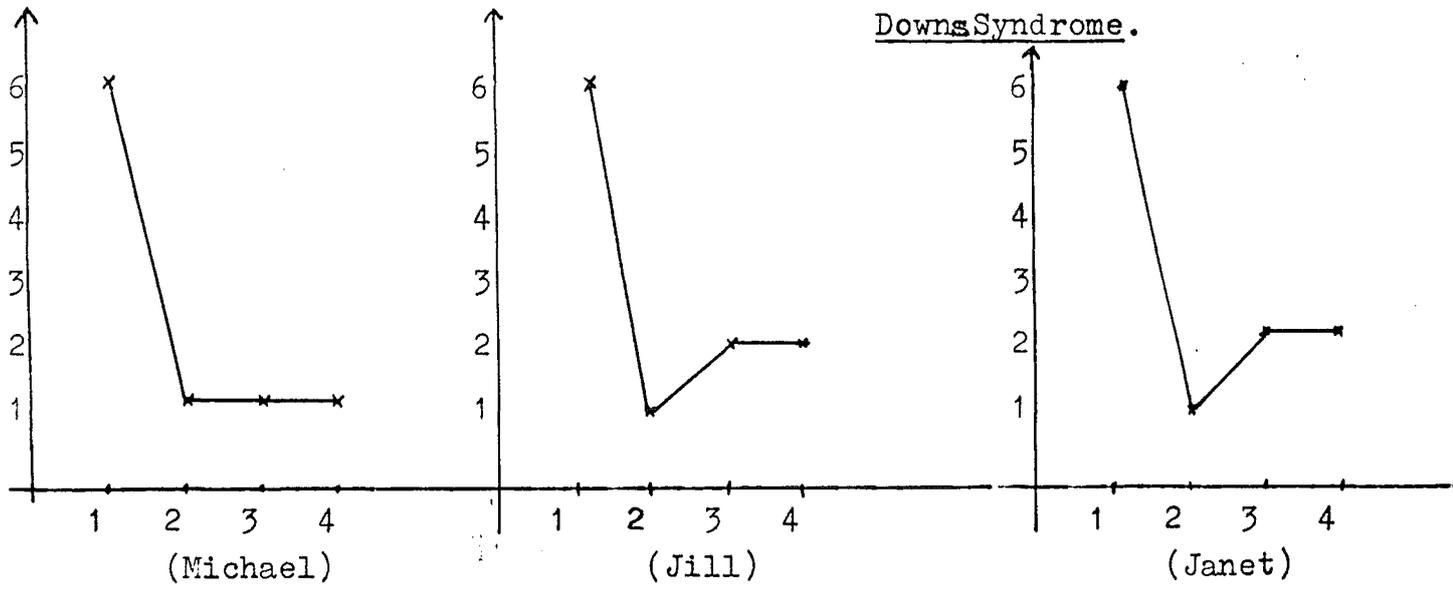
Table 3.

Number of Days taken to reach the Four Criteria in Phase One.

	Subject	Total	Scanning, choosing completing, putting away	Proximity, Repetition	Distraction	Non-goal directed peer activity
Downs Syndr- ome	Michael	7	4	4	5	7
	Jill	7	5	5	6	7
	Janet	7	3	5	6	7
Compa- rison	Anne	4	1	2	3	4
	Glen	4	1	2	3	4
	Susan	4	1	2	3	4

Thus, even though the Downs Syndrome children took longer to learn the choice-related behaviours, they performed as competently as the comparison and control children by the end of phase one. Such a result supports Hanson's (1977) research, who also found that Downs Syndrome children can learn age-appropriate behaviours, but at a slower rate, and through systematic teaching.

There was a marked difference in choice behaviour on all criteria by the training children after phase one. The decrease in the number of times the nearest activity was chosen by the Downs Syndrome and Comparison children can be seen in figure one.



Number of Administration of the Structured Observational Measure.
 Number of Times the Closest Toy was Taken During the
 Administration of each Structured Observational Measure.

While all the training children chose the nearest activity on all six occasions a choice was offered during the first S.O.M., there was a considerable decrease after phase one and it remained at a stable level until the end of phase three. In most instances, the children rejected both alternatives during the S.O.M. after phase one and leaned over the table to take an alternative puzzle or went to the shelf to choose another puzzle. This behaviour was recorded as choosing a non-nearest puzzle and accounts for the fact that the closest puzzle was only taken one or two times out of the possible six. Thus, it was not that they took the non-nearest puzzle the remaining four or five times, but completely different ones were taken from the shelves or other end of the table. Selecting from the shelves was also characteristic of the control group children and it was interesting to note that all training children developed this skill.

Table Four indicates that during the first S.O.M. when all the training children, except one Downs Syndrome child, repeated the same activity immediately after completing it, in up to three times, this behaviour was not encountered again during any subsequent administration of the S.O.M.

Table 4.

Number of Times Child Repeated Same Activity Immediately After Having Completed It.

Downs Syndrome	S.O.M. 1	S.O.M. 2	S.O.M. 3	S.O.M. 4.
Michael	3	0	0	0
Jill	2	0	0	0
Janet	0	0	0	0
<u>Comparison.</u>				
Anne	1	0	0	0
Glen	2	0	0	0
Susan	3	0	0	0
<u>Control.</u>				
Jason	0	0	0	0
Joanne	0	0	2	0
Paula	0	0	0	0

The final running records of the training children in free-choice situations supported the data obtained in the S.O.M. There were few instances of aimless repetitive activity in the final observations in the free-choice setting.

The data on imitation on non-goal directed peer activity presents a similar picture. Although all training children followed a peer when she/he left the puzzle table from one to three times on the first S.O.M. such aimless imitation did not occur on any subsequent measure after phase one, with the exception of one comparison child who did so on the final S.O.M. Table Five indicates the number of times the children followed the non-goal directed activity of peers, during the Structured Observational Measures.

Table 5.

Number Of Times Children Imitated Non-goal Directed Peer Activity.

Downs Syndrome	S.O.M.1	S.O.M.2	S.O.M.3	S.O.M.4
Michael	3	0	0	0
Jill	1	0	0	0
Janet	2	0	0	0
<u>Comparison.</u>				
Anne	2	0	0	0
Glen	2	0	0	0
Susan	2	0	0	1
<u>Control.</u>				
Jason	0	0	0	0
Joanne	0	0	0	0
Emma	0	0	0	0

None of the control children followed the non-goal directed behaviour of peers.

Apart from one instance of a child playing with an unrelated object during the S.O.M. after phase one, all children resisted all distractions presented during subsequent S.O.M. This was a sharp decrease from the initial S.O.M. where all but one of the training

children were distracted from completing their initial choice from up to three times, that is, on each instance a distraction was presented. Distractions did not interfere with completion of initial choice at any stage in the control group. Table six indicates the number of times the children played with the distractions for more than five seconds. This often prevented them from finishing their initial task.

Table 6.

Number of Times Children played with Unrelated Distractions for more than 5 Sec.

Downs Syndrome	S.O.M.1	S.O.M.2	S.O.M.3	S.O.M.4
Michael	3	0	0	0
Jill	3	0	0	0
Janet	3	1	0	0
<u>Comparison.</u>				
Anne	2	0	0	0
Glen	0	0	0	0
Susan	3	0	0	0
<u>Control.</u>				
Jason	0	0	0	0
Joanne	0	0	0	0
Emma	1	0	0	0

Furthermore, there was a change in the training children's acceptance of adult's suggestions. Initially, all training children accepted all suggestions made half way through or just on task completion. A decrease in acceptance of these suggestions occurred after phase one, when most training children pushed away the offers made and continued with the initial choice or chose another alternative. As can be seen in Table Seven, the training children's acceptance of suggestions continued to decrease on subsequent administrations of the S.O.M., with the final S.O.M. indicating that only two training children accepted one suggestion each out of a possible three, and

the remainder did not accept any at all. The data for two of the Normal children (Jason and Joanne) are variable and difficult to interpret. However, for Emma it remained at a stable low level. Table seven indicates the number of times the children accepted the researcher's suggestion made half way through or just on task completion.

Table 7.

Number Of Times Children Accepted Adult's Suggestion.

Downs Syndrome	S.O.M. 1	S.O.M. 2	S.O.M. 3	S.O.M. 4
Michael	3	1	0	0
Jill	3	2	1	1
Janet	3	1	0	0
<u>Comparison</u>				
Anne	2	0	1	1
Glen	3	2	1	0
Susan	3	3	1	0
<u>Normal</u>				
Jason	0	2	1	2
Joanne	3	2	1	3
Emma	1	1	0	1

At the transition from phase one to phase two procedures, it was anticipated that the children would have difficulty choosing from activities less close together and with no clear beginning or end as in phase one. It was also thought that the children would inevitably choose the first or last activity, more often than the second or choosing something else. This did not occur as can be seen in Table eight. Except for Glen who chose the first **activity** more often than the alternatives. The other children chose the activities fairly equally. Glen did scan the alternatives prior to making a choice, so it can only be said that he must have genuinely preferred the first activity.

Table 8.

Phase 2 - Number of Times * Each Alternative Was Selected.

	1st.Acti- vity	2nd.Acti- vity	3rd.Acti- vity	Chose Different Activity	Total Choices Offered.	
Downs Syndrome	Michael	13(27%)	11(23%)	13(27%)	11(27%)	48(100%)
	Jill	11(21%)	20(38%)	12(24%)	9(17%)	52(100%)
	Janet	13(29.5%)	13(29.5%)	6(14%)	12(27%)	44(100%)
	Anne	11(29%)	12(32%)	11(29%)	4(10%)	38(100%)
Compara- son	Glen	22(53%)	9(21%)	10(24%)	1(2%)	42(100%)
	Susan	6(16%)	12(31.5%)	9(23.5%)	11(29%)	38(100%)

* Proportion of total number of choices is included in brackets.

It was also anticipated that the transition between phases two and three procedures was large and the children may have had difficulty coping with a free-choice after the structured indoor choice.

For example, the children had been given no structured choices in the outdoor environment which is generally full of distractions such as doll's prams, buckets, spades, trolleys and so forth. However, this did not pose the problems anticipated. When given the free-choice, the children frequently used the scanning procedure by pointing to the alternatives, used speech to indicate choice, or sometimes without pointing, they immediately went to an activity, quite a considerable distance from where the choice was offered. Thus phase two procedures were seldom necessary as can be seen from Table nine.

Table 9.

Number of Times Phase Two Procedures Were Used During Phase Three.

	Number of Times	Total Number of Choices offered.
Michael	1	50
Jill	7	27 *
Janet	4	40
Ann	3	40
Glen	5	50
Susan	0	44

* Absent during half of Phase three.

Individual Results: Running records of Children's choice behaviour in the free-choice situation after the completion of the thirteen weeks training programme substantiate the data from the S.O.M. Individual descriptions of the children's choice behaviour in the free-choice preschool setting are found in Appendix D.

Issues Suggested by Data.

Generalisation: Generalisation of skills acquired in phase one occurred very quickly with Downs Syndrome and Comparison children, to the free-play environment. Examples of generalisation are:

Michael (day 3) pushed away a hammer offered by a peer and took an apron from the hooks for waterplay instead.

Jill (day 3) pushed away another child's play lunch in front of her on the table, then went to the shelf to get her own.

Janet (day 4) scanned the box of sandpit toys and threw out the ones she did not want.

Ann (day 3) scanned painting cups before selection.

Glen (day 6) already indicated a choice before the researcher got the activities ready for the training programme.

"I want to play with the rings on stick."

Susan (day 2) started to scan the shelf for puzzles she preferred to the ones offered. (pushed them away).

Second-order Effects: Since the training programme took place during the free-choice environment, other peers frequently watched what took place. It must have been perceived as an enjoyable game as later it was incorporated into their play. One peer stated: "Let's go with Janet, we want to play too". Another group of peers went to the puzzle table and imitated the training programme.

"Let's play the game Christine plays with Janet".

One of the Downs Syndrome children imitated the training session

with her doll. On day 9, when the training session was due to begin, Jill picked up her doll, placed it next to her at the puzzle table, then went to the shelf and put two puzzles in front of the doll.

At another preschool, the Downs Syndrome child received considerable social interaction through the training. As soon as the researcher arrived, the peer group organised the child to sit at the table, which they immediately cleared. They pulled up a chair for the researcher, then watched the training programme (phase one) enthusiastically, cheering as Michael pointed to the three activities, chose one and pushed the others away. The preschool staff reported that his peers imitated the training programme during the researcher's absence. It is interesting to note that the Comparison child did not receive such attention.

Differences between the Downs Syndrome and Comparison Children.

Apart from the Downs Syndrome children requiring more time than the Comparison children to acquire the basis skills in phase one, only one further difference emerged between the two groups. The Comparison group began to use language instead of pointing to indicate choices.

Transfer of Training to Staff (Phases two and three).

The transfer of the training procedure to the preschool staff resulted in a continuation of the mature choice behaviours, established by the end of phase one. It was anticipated that if staff failed to ensure that the children scan all alternatives prior to making a choice, the child would inevitably go to the first or last activity, during phase two, and so the skills acquired in phase one would not be maintained. However, the S.O.M. after phase two and three as well as the final running records indicated no regression of mature choice behaviours, once staff participated in the training programme.

Even though Glen chose the first activity more often than the alternatives (see Table 8), it can hardly be said that the staff in his preschool failed to ensure scanning took place. Michael, whose choice behaviour was not affected by order, attended the same preschool, and if staff had not ensured that scanning took place, then Michael's choice would have indicated a similar pattern to Glen's.

Awareness of Staff Interaction.

During phase three procedures, when some children were not engaged in an activity and they saw a staff member approaching, before the staff could ask them what they would like to do, they would quickly indicate their choice, by stating it verbally or pointing. For example, Anne had just finished her painting and was walking slowly down the passageway to the front door with her thumb in her mouth. A staff member who was standing near the front door, got out her notebook and pen and was about to make contact with Anne by asking her what she would like to do. As soon as Anne saw the adult approaching she immediately said: " I want to have a story now". It was interesting that when this occurred, the child did not merely choose the closest activity to avoid the question being asked, but either stated or pointed to an alternative activity.

DISCUSSION.

The increase in target behaviours by the end of phase one was maintained in subsequent phases of training, thus indicating that mature choice behaviours can be established in Downs Syndrome and Normal children. This mature choice behaviour not only took place in the presence of the researcher or in structured situations such as the puzzle table, but generalised to the free-choice setting which included both indoor and outdoor activities, and in the presence of the regular preschool staff.

The findings raise several questions concerning the role of adult intervention in the free-choice programme. The issue of repetition posed considerable problems in this study and eventually subjective criteria had to be used. In establishing these criteria, the view that play must contribute to development was held. From this perspective, if play is to contribute to cognitive growth and development, then simply allowing the child to play in a repetitive manner, thus not having to make new choices, solve new problems or use new materials is undesirable.

The Cognitively Oriented Curriculum also emphasises that children who make the same choices each session must be helped to make new choices, thus encountering a wider variety of problems which will extend the child's development.

Consequently, in the present study an activity that the child appeared to perform unhesitatingly and then repeated immediately afterwards in exactly the same manner was classed as non-functional repetition, while an activity that the child needed external help with, hesitated about or performed differently, was seen as functional. While all play during the S.O.M. and free-choice activities did fall into the two categories, there is obviously a need to develop clearer categories, since no allowance was made for repetition of activities because the child simply enjoyed them. Few would deny that children should be able to fulfill their recreational as well as intellectual needs at preschool and therefore repeating an activity cannot always be viewed as undesirable.

Similarly, there was the problem of defining non-goal directed peer activity. This was especially difficult for the Downs Syndrome children, as they had participated in a peer imitation programme earlier in the year, and the aim was not to extinguish all forms of peer imitation, but only instances where a peer left or wandered by, without conveying a choice of activity to the training child.

It was predicted that as a result of the training which emphasised persistence regardless of distractions and peers leaving, that the training children's play would become very goal-directed rather than social. If such behaviour resulted then the children would miss out on social interaction, which is equally important for their development. However, this did not occur. The training children usually completed their task before leaving, if a peer asked them to participate in some other activity. Thus, task persistence was enhanced without extinguishing peer interaction.

One difficulty that arose with the transfer of training to the preschool staff was that of time to carry out the training. With the present low staffing ratios in kindergartens, staff reported that they had difficulty managing to carry out the training programme five times for each child during any one session. There were times when staff were only able to carry out the training programme two, three or four times, but this did not appear to affect the children's ability to make mature choices at the end of phases two and three. It was not that the training procedures involved a large proportion of the staff's time, but staff had to carry out the procedure when the child was not engaged in purposeful activities. They therefore had to keep a close watch on the training child throughout the entire session, which some reported prevented them from getting very involved with their other duties.

Furthermore, in phase one, there arose the difficulty of other children wanting to take part in the training programme and wanting the particular toys used. This frequently distracted the training children and so these peers were told to find something else to do. This raised an ethical question concerning the free-choice programme. On the one hand, some children were taught how to exercise their free-choice and on the other hand, the children who did freely choose, were told to select other activities as their initial choices were not available just now.

Since the researcher was familiar to all the children in the three preschools, in her role as an itinerant teacher of Downs Syndrome children, this presented difficulties when half-hour uninterrupted observations were required. The children frequently interrupted and although all interactions are recorded, it is difficult to know how much the training children's behaviour occurred to 'please' the researcher. However, ^{1, 2} from the final S.O.M. and running records which were recorded by the researcher, both preschool staff and parents reported their observations of improvement in the training children's ability to make choices.

Despite the implications, the present study throws light on the scarce amount of research on how children make choices. Some of the behaviours that constitute mature choice behaviours have been identified and a training programme, where the component skills were taught in small sequential steps has been successful in helping Downs Syndrome and Normal children with deficits in choice behaviour develop purposeful mature choices. However, in view of the fact that the Normal children acquired the skills so easily, it would seem that the structured situation may not have been necessary for them, but they would have learned the skills incidentally through the free-choice programme. It also happened that the Comparison children were slightly younger chronologically and had attended preschool for less time than the Downs Syndrome children. It is not known to what extent the training programme or maturation have influenced the data. The fact that the Control group's choice behaviour remained stable over the entire training programme could indicate that with these children, a ceiling effect was operating with the criterion behaviours. Running records which indicate no change in the Control children's choice behaviours support this view. Alternatively, the stability of the Normal Children's choice behaviours over the relatively short training period of thirteen weeks could also indicate that

maturational factors were not substantially influencing the Comparison children's behaviour, and that the improvement was a function of the training programme.

A limitation of the present training programme was that it did not allow for further development of choice behaviours, once the criteria had been developed. For example, in phases two and three, once a choice of activity was made, no further choices during that activity were required. If a child chose blocks, he/she was not required to make a further choice as to what equipment he/she would need, such as cars, farm animals, trains and so on. Requiring children to make such choices could help them think through their ideas and so enhance their play at the chosen activity.

Preschool staff could have an important role in helping all children make choices throughout the day, whenever the occasion arises. For children who have difficulty deciding what to do, staff may need to offer a small range of choices to begin with. Staff could become more aware of the choice behaviours evident in the children in their preschool, and respond appropriately. For example, a child doing the same thing repeatedly - pushing a doll's pram around the same track, may need to develop alternative choices. The child who flits from one activity to another may need to develop persistence at the initial choice before selection of another. A step by step approach such as that used in phase one of the present study could be useful. Not only when such deficits in choice behaviour are present should the staff intervene. Staff could also help children extend their choices or plans. If a child indicates that he/she wants to participate in a carpentry activity, staff could help the child think through ideas such as what materials he/she would require, how he/she is going to use them and so forth.

A second limitation of the study concerns the place of free-choice activities in the preschool education of Downs Syndrome children. While mature choice behaviours are required, as these

are likely to enhance the child's self-directed learning, self-control, independence and intellectual growth, and help integrate the child into the preschool programme, there are some problems associated with allowing the child to freely choose all the time. Downs Syndrome children must also learn to follow instructions about activities such as morning tea time, handwashing, collecting one's notes and paintings at mat time, and rejecting these sorts of adult suggestions could inhibit integration, as both adults and peers could develop negative feelings towards such a child. Furthermore, the Downs Syndrome children are involved in a multi-disciplinary parent education early intervention programme where the parents are told and shown which developmental activities are appropriate for their child. If the child chooses not to participate in these activities, then some important preacademic skills will not be developed and opportunities for further school integration reduced. Since the research on the learning of Downs Syndrome children indicates that they do not learn new skills spontaneously, then it follows that a free-choice programme alone does not cater optimally for their needs. (Harris, 1977).

Hendrick (1980) sums up this point aptly.

" It would be ideal of course if all activities were attractive enough that the child would want to choose them spontaneously, but there are times when youngsters should participate in learning activities that will enhance their growth if they are not particularly attracted to them." (page eight)

Therefore preschool staff need to strike a balance between self-selection and adult-selected activities. A certain level of competence may be necessary before a child can make a mature choice, and teaching appropriate material usage for a number of activities may be a prerequisite before teaching mature choice behaviour. On the other hand where choices are available, parent-helpers as well as staff must be aware of encouraging children to make their own. During the initial observations a large number of adults did

not offer a choice where choices were available, but presented suggestions. For example, "Come and have a story". Almost all the children conformed to such suggestions, including children who showed mature choice behaviours in other aspects.

As one of the main features of the New Zealand preschool programme is self-selection of activities, as mentioned earlier, then the adults working in the preschool must offer opportunities for making such choices.

While many questions are still left unanswered, such as the long-term effects of the programme, for example, will the training children continue to avoid all repetition even if they enjoy the activity, this study indicates that it is possible to systematically teach mature choice behaviours to Downs Syndrome and Normal children in the naturalistic setting of the free-choice preschool programme in collaboration with the regular preschool staff.

Finally, the study suggests that further research on the development of choice behaviours is necessary. For example, the Normal children's choice behaviours were not extended in any way, nor were the training children once the criteria had been reached. If the features that characterise the next stage of making mature choice behaviours were known, then it would be possible to extend the existing training programme.

The role of language in the choice-making process has also not been explored. While the Downs Syndrome children were able to reach all the criteria without the use of language, further development of choice behaviour may not be possible. In the Cognitively Oriented Curriculum, the ideas offered to extend and develop children's plans and ideas are all based on adult/child verbal interaction.

Further research could also identify other deficits in choice behaviours, not evident in this small sample of children in the present study, and other strategies to develop mature choice behaviours

could also be developed.

While the present study has fulfilled its aim by developing further understanding in the development of making of choices in free-choice preschool programmes, it is only by further research that such understanding can be extended.

APPENDIX A.(Summary of Initial Running Records and S.O.M.)

Michael; Running records in the free-choice programme indicated a major deficit of failure to scan alternatives prior to making a choice. This resulted in Michael choosing the activity or toy nearest him each time he selected activities. There was also evidence of 1) repeating the same activity - activities which he had already mastered well, 2) distractions interfering with task completion and 3) imitation of non-goal directed peers who happened to walk by. The Structured Observational Measure (S.O.M.) confirmed the three initial observations. Not only were these behaviours present in the free-choice situation, but also when Michael was confronted with a more structured, but less complex situation - choosing between two puzzles.

Jill; Observations prior to training indicated that both distractions and choosing the nearest activity interfered with completion of initial choice and the making of a mature choice. These two factors were interrelated. For example, when Jill was pushing her doll's pram she ran into a larger pram which distracted her from following through her initial choice. She immediately left her doll's pram with doll and proceeded to push the larger pram, despite the fact it did not have a doll in it. The presence of the larger pram was both a distraction to the completion of her initial choice and also an incident where the nearest activity in sight was chosen. The S.O.M. indicated similar choice behaviours. Jill chose the nearest puzzle in each choice situation and each time an unrelated item was placed on the chosen activity, Jill played with this and did not return to the initial choice. Repetition also occurred during the S.O.M. It was difficult to note whether the doll play which took up

a large proportion of the time, was repetitive or not as taking a doll for a ride in a pram is an activity which does not have a clear cut beginning and end, such as the completion of a puzzle.

Janet; Observations in the free-choice environment indicated that Janet's choice behaviour consistently involved choosing the closest activity, or being distracted from task completion by other activities. There was also imitation of non-goal directed behaviour of peers. Most of the observations occurred outside and large transient toys such as pedal cars, doll's prams and barrells caused Janet to stop what she was doing and continue playing with these transient toys. For example, on returning from showing the researcher a bottle that she had filled with water from the water trough, a pedal car had been placed between where the researcher was sitting and the water trough. Instead of returning the bottle to the water trough, Janet put the bottle beside the pedal car and continued to play with this toy. Her initial choice of playing with the water was not completed

Janet's choice behaviour during the S.O.M. also resembled that of the free-choice situation. She chose the closest activity on each of the six situations, a choice was offered and she was also distracted by the unrelated items on all three instances. There was no evidence of any repetitive behaviour.

Anne; Choosing activities close to her immediate location without viewing alternatives, following non-goal directed behaviour of peers, and failure to make a choice were characteristic of Anne's choice behaviour during initial observations. Two instances were recorded when Anne wandered around the activities inside, but did not choose any, and on two further occasions she did not reply or indicate a choice to the free-choice offered by an adult.

The S.O.M. did not indicate a failure to make a choice, but did

indicate a failure to scan alternatives hence choosing the closest puzzle on each occasion.

Although Anne did not allow distractions to interfere with task completion during the free-play session, distractions did interfere during the S.O.M. There was no repetition of activities, immediately after task completion in either observation, although following the non-goal directed behaviours of peers occurred in both occasions.

Glen; Running record observations indicated a balance between mature and immature choice behaviours, although deficits were evident in the S.O.M. This was possibly because Glen's choice behaviour in the free-play setting was largely determined by what a favourite peer chose to do. Glen spent most of the time seeking him out, thus did not choose the nearest activity at any stage. However, when placed in a more structured situation without peers, as in the S.O.M., Glen did not demonstrate the same choice behaviour. For example, Glen did not scan the available puzzles before making a choice, although he did scan the preschool environment when looking for his favourite peer. During the S.O.M., Glen chose the nearest puzzle on all six occasions. He also repeated the same puzzle on two out of the three opportunities he had for doing so. This repetitive behaviour was also not evident during prior observations, possibly because the peer kept engaging in different activities. Both types of observations indicated instances of imitating the non-goal directed behaviour of peers. However, at no stage, did Glen let unrelated distractions interfere with task completion. Glen's mature choice behaviour was also evident. He used speech to convey choice and sometimes scanned the outdoor area before selecting an activity. It was evident though, that when Glen was not with his favourite peer, his choice behaviour indicated deficits which prevented him from making mature choices in most situations.

Susan; Both running record observations and the S.O.M. indicated that Susan's choice of activity was determined by what was immediately in front of her. Repetition of the same activity occurred in both observations. In the running record observations distractions frequently interfered with completion of initial choice. For example, when a transient trolley was present at the bottom of the fireman's pole, Susan started playing with this before returning to her initial choice of climbing. It was interesting to note that none of the other peers who were partaking in this climbing activity were distracted by the trolley's presence. Unrelated distractions also interfered with completion of initial choice during the S.O.M. Following non-goal directed peers occurred only in the S.O.M. situation. There was some indecision during the free-choice situation, when Susan looked over the area, but did not choose an activity. She then stood back and watched until an adult saw her and offered a suggestion. Susan accepted the suggestion.

Jason; Jason's choice behaviour in both the free-choice and S.O.M. involved mainly the use of speech, and/or pointing to an activity before participation in it. For example, when Jason and a peer were sitting on a box, Jason said, "Let's go," as he pointed to a two-seater rocker. Distractions did not interfere with task completion in either the free-choice or S.O.M., nor were activities repeated immediately after Jason had completed or participated in them. Following a peer was goal-directed rather than non-goal directed. The use of speech, scanning available alternatives before selection, pointing, then actual participation despite distractions and aimless repetition, indicated mature choice behaviours.

Joanne; The use of speech, plus pointing to indicate choice, ignoring distractions, scanning available alternatives, persisting

despite counter-suggestions made by peers and adults, lack of repetitive activity were characteristic of Joanne's choice behaviour during the free-choice and S.O.M. situations. During the S.O.M. Joanne frequently rejected both puzzles presented and went to the shelf to choose a desirable alternative. These behaviours were considered to be mature choice behaviours.

Emma; Emma used speech and scanned available alternatives before making choices. Before participation in an activity, she scanned the places necessary to find the appropriate equipment. In one situation when Emma decided to do a pasting, she went to the shelf and sorted through the various pieces of paper before selecting one she wanted. In another situation at the dough table, Emma wanted a particular item for dough play. She looked in the likely places, then got up and asked an adult who was at another activity. Distractions did not interfere with completion of her initial goal, nor did the non-goal directed activity of peers. These mature behaviours were also evident during the S.O.M., where Emma always scanned alternatives prior to selection, never repeated activities immediately after having completed them, did not let unrelated distractions nor non-goal directed behaviour of peers interfere with task completion.

APPENDIX B.List of Toys used during Phase One Training Procedures.

Day 1. Car puzzle	Crayon and paper	Book (Playing Together)
Day 2. Duck puzzle	6 nesting cups	Book (At Home)
Day 3. Boat puzzle	6 Lotto cards	4 Tupperware shapes and ball
Day 4. 4 Tupperware shapes and ball	Train puzzle	Book (My Clothes)
Day 5. Car puzzle	6 nesting cups	Book (Playing at Home)
Day 6. Crayon and paper	Rings on stick	Posting box
Day 7. Train puzzle	Threading 6 beads	6 Lotto cards
Day 8. 4 Tupperware shapes and ball	6 Lotto cards	Book (Bathtime)
Day 9. Duck puzzle	scissors and paper	Threading 6 beads

APPENDIX C.Name:Preschool:Date:Choice-related Behaviours.

	1	2	3
	yes/no	yes/no	yes/no
1) <u>Proximity.</u>			
Chooses closest puzzle when confronted with two puzzles side by side. <input type="checkbox"/> <input type="checkbox"/> *child			
Chooses closest puzzle when confronted with two puzzles one on top of the other. <input type="checkbox"/> <input type="checkbox"/> *child			
2) <u>Repetition.</u>			
Repeats same puzzle, instead of choosing new one.			
3) <u>Imitation.</u>			
Stops task when an adult or peer leaves - follows adult or peer.			
4) <u>Distraction.</u>			
When presented with unrelated object, stops task to play with it for more than five seconds.			
5) <u>Suggestion.</u>			
Stops task and follows adult's suggestion when adult suggests alternative task half way through the initial one.			

APPENDIX D.(Summary of Final Running Records and S.O.M.)

Michael: Final observations in the free-choice preschool environment indicated that Michael's choice behaviour was characterised by scanning alternatives before making a choice, lack of repetitive activity, except in an instance where the toy was new and so had novel value, avoidance of distractions interfering with initial choice, and no imitation of non-goal-directed peer activity. Although Michael no longer pointed to activities to indicate scanning, it was obvious that scanning was evident as Michael frequently chose activities, distant from the previous choice. These mature choice behaviours were also evident during the final S.O.M. All these skills were lacking during the initial free-choice observation and S.O.M. apart from lack of speech to indicate choices, Michael's choice behaviour became similar to that of his preschool peers.

Jill: Free-choice observations indicated that Jill scanned alternatives prior to selection of an activity. However, on two occasions, the nearest activity was chosen, but this was hardly surprising as a large group of children were present with an adult enjoying a novel game. Infact, it was encouraging to see that the training programme did, therefore, not discourage Jill from taking the nearest activity. Jill consistently resisted distractions that could have prevented her from completing her initial choice. These were either ignored or pushed away. For example, when Jill got off the trampoline, she walked past a transient trolley to get to the foot of the ladder onto the climbing boxes. Her choice behaviour involved continually choosing 'new' equipment and activities, thus Jill was encountering a greater variety of problem-solving activities than she would have

done if her initial persistent repetitive activities had not been modified. When Jill stayed at the puzzle table after the final S.O.M., she continually chose different puzzles. There were no instances of following a non-goal directed peer.

Major changes in choice behaviours have occurred since the initial observations. One interesting change has been the emergence of speech or vocalisations to convey choice. For example, when an adult suggested that Jill should play inside as it was cold outside, Jill replied: "no, no, no", and ran away from the adult, past several transient doll's prams to get a trolley. Although some of the training programme phase one procedures occurred occasionally, for example, Jill offered the researcher three books, placed them in front of her, one above the other, pointed at them individually, then chose one and offered it to the researcher, it is unlikely that this behaviour will remain as such obvious scanning procedures have decreased in the self-selection of most other activities.

Janet; Janet's choice behaviour in the free-choice setting after the training programme involved scanning the alternatives before self-selection. An example of this occurred when Janet rummaged through the box of water play equipment before taking a plastic bottle to play with. Other instances occurred when Janet was near an activity such as the sandpit and she stopped to look at the children playing in it. She did not choose this nearest activity but selected an alternative. There were no instances where Janet walked to the nearest activity without viewing alternatives, nor when she chose the closest equipment, except at the dough table. However, this can hardly be viewed negatively, since all the rolling pins, dough cutters and lumps of dough were very much the same and there was no advantage in choosing anything other than the nearest.

Furthermore, Janet rejected distractions, even the transient ones outside, which prior to training interfered with her initial choice each time a choice was made. While pushing a doll's pram and when at the dough table, peers frequently walked by or left, but Janet did not follow their non-goal directed activities.

Rejecting distractions, resisting the following of non-goal directed peers, demonstration of scanning alternatives prior to making choices and rejection of adult suggestions were clearly new behaviours, not evident during the initial running records or S.O.M.

Anne; Final observations in the free-choice preschool environment indicated that Anne's choice behaviour most commonly involved the use of speech to indicate choices and to help her persist at her initial choice. For example, after asking a peer for a puzzle she wished to do, Anne asked an adult to help her complete it. In each case Anne was involved in making a choice, she either scanned the alternatives available or immediately walked over to the desired activity, avoiding the distractions on the way or the non-goal directed activity of peers. Her choice behaviour lacked repetition, as a wide variety of activities were participated in, and these were located in different areas of the preschool environment. Thus proximity did not influence choice. The S.O.M. confirmed these findings.

Anne's major deficit in the initial observations were failure to making choices and participation in activities close to each other. These deficits were not evident on the final S.O.M. or free-choice observations.

Glen; Glen's choice of activity was indicated most commonly by the use of speech, either to others or himself. When Glen was scanning the puzzle shelves alone one day, he stated, "Me like this one", as he found

the one he wished to do. Because Glen viewed alternatives prior to selection, such as looking through the bin of wood before taking a piece for carpentry, looking around the outdoor area before selecting equipment to play with, he seldom chose the closest activity to him. Glen also rejected peer and adult suggestions. This can be seen when a peer and parent helper suggest that Glen does a pasting with them. Glen immediately stated: "Me not want to do a pasting. Me going to do a painting". Glen resisted distractions which could have interfered with completion of initial choice. When he placed his carpentry in his locker, he had to walk past most of the indoor activities, yet these did not distract him from getting to his locker, and then going back outside again. Glen's choice behaviour lacked aimless repetition of any activity in which he immediately had participated.

It is difficult to compare Glen's behaviour with that of the initial running record observations, since initially Glen's choices were dominated by those of a favourite peer. It is interesting to note that after the training programme Glen indicated ability to make mature choices without a favourite peer's influence. Comparison of the initial and final S.O.M. reflects a marked decrease in immature choice behaviour.

Susan; The use of speech, avoidance of distractions and selection of preferred activities regardless of proximity, lack of imitation of non-goal directed peers, and lack of repetitive play, characterised Susan's choice behaviour.

These behaviours were not evident during the initial observations. Some of the skills established during training were evident in Susan's choice behaviour in the free-play setting. For example, she pushed away a puzzle that someone offered and chose to eat her morning tea instead. While there were some instances of failure to make a choice in the initial observations, this did not occur during the final

Initially, Susan's choice of activity changed frequently depending on what was in front of her, such as the following sequence of events. When Susan got to the bottom of the slide there was a Humpty Dumpty which she picked up and put in a transient doll's pram nearby. She then pushed the doll's pram a short distance, before participation in waterplay.

Her choice behaviour at end of the training involved making a choice, then participation in that activity for at least one minute.

Choice behaviour on the final S.O.M. also indicated that more mature choice behaviours were present than on the initial S.O.M.

Jason; Jason's behaviour involved choosing activities that were situated at opposite ends of the indoor area and at the far end of the outdoor area. This indicated that Jason was not influenced by the proximity of activities, nor did alternatives distract him from his initial choice. His method of indicating choice was most commonly through the use of speech. For example, "I want a story".

Sometimes speech was accompanied by pointing to the chosen activity.

There was lack of aimless repetition as could be seen when Jason continually chose different books or puzzles. Jason reviewed the suggestions made by peers before acceptance or rejection.

For example, as Angela walked by, Jason did not merely follow her. Infact he ignored her until she asked him whether he would like to play with her in the block corner.

Jason's choice behaviour in the free-choice setting, remained very stable before and after the training programme. Observations on all four S.O.M. confirmed that Jason's mature choice behaviour was also evident in the more structured table situation.

Joanne; Joanne's choices covered a wide variety of activities which were not influenced by proximity. Most of the time Joanne used speech to indicate choice or else she would look around the area before

choosing an activity. She resisted all the distractions on the way to the chose activity, and although the same activity was repeated occasionally, it was not aimlessly repeated. For example, Joanne used the slide in a variety of ways, thus extending the skills she already had. On all four administrations of the S.O.M. Joanne's choice behaviour was very similar. Such similarity was also observed in both the initial and final running record observations, thus confirming evidence of Joanne's mature and purposeful choice behaviour.

Emma; Emma's choices are conveyed by use of language. Emma persisted at carrying out her choices and used speech as well as problem-solving skills. An example illustrates this. Emma wanted to make a puppet, so she scanned the shelves for necessary materials which included a paperbag and felt pens. Since the felt pens were not there, she walked past all the activities outside, to the storage shed where a staff member was. She used speech to convey her choice of felt pens. The staff member was busy, so Emma waited for at least five minutes until she was ready. Emma then walked past all the distractions on the way back to the cupboard inside where the felt pens were kept. She then proceeded to take them to the collage table for using to illustrate her puppet. Distractions, non-goal directed peer activity, nor proximity of other activities prevented Emma from carrying out her initial choices. There was no aimless repetition of activities.

Emma's choice behaviours have remained stable throughout the time of the training programme. The S.O.M. on all four occasions revealed a marked similarity in choice behaviours to those occurring in the free-choice environment.

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