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ABSTRACT

The study compared the adjustment to regular classes (in New Zealand) of eight 6- and 7-year-old children with Down Syndrome (DS) with that of 24 children rated by their eight teachers as being the "three least competent children in the class." The study evaluated teacher attitudes, social participation on the playground, and developmental progress. The study found teachers still uncertain about the value of integrating such children into regular classes after 1 year though their beliefs were not always supported by the data comparing the DS children with the contrast children in the areas of time on-task/disruptions, interactions with the teacher, compliance, social interaction, and affectionate behavior and mimicry. There was no support for the commonly held belief that DS children are socially isolated during unstructured time with some DS children showing a greater range of abilities when interacting with peers in unstructured situations than in the classroom. All of the DS children maintained or surpassed their previous rate of progress after 1 year although teachers gave them much more attention than contrast children. Results suggested that integration of these children can be effective but that the services of an itinerant teacher are valuable and the use of novelty encourages more peer interaction in all children. (DB)

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# Adjusting to School

## Eight Children with Down's Syndrome



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# Adjusting to School

## Eight Children with Down's Syndrome

INTEGRATION IS PROMOTED BECAUSE (1) evaluation studies show no educational benefit for segregating the handicapped and significant benefits for integrating them; (2) there is a growing awareness of human rights, including the rights of the retarded to a 'normal' environment; (3) a trend-setting law in the USA requires all children with handicaps to be educated in the 'least restrictive environment'; and (4) early intervention programmes which alleviate the effects of progressive retardation (by providing children who have developmental delays with structured teaching in language, cognitive, physical and social skills) enable them to profit from regular school attendance. The Down's Syndrome children in the present study had taken part in an early intervention programme since birth. They possessed skills which resembled those of their non-retarded peers during infancy and preschool, therefore it seemed likely that they should derive greater benefit from placement in regular classes than in special classes.

## Subjects and Setting

THERE WERE FIVE GIRLS and three boys in the sample. Five children attended their local state school, two children were attending Catholic schools and one child was attending a state school where he was integrated into a regular class one day a week and placed in a special class with older children for the remaining four days. All children were aged between 6 and 7 years and six had been at school for approximately one year.

Twenty-four contrast children, three in each classroom, were also observed. These children were not selected at random. Instead, the teacher was asked to nominate the 'three least competent' children in the class.

## Measures

*Teacher Attitudes:* A written questionnaire asked teachers, principals and junior school teachers to indicate the extent of their agreement or disagreement with the placement of a child with D.S. in the class.

*Classroom Behaviour:* Each child was observed six times during the study. Two types of observation procedure were used during each classroom visit:

**(a)** A 10-seconds-observe 5-seconds-record interval recording procedure was used for 30 minutes during each visit to obtain six samples of the behaviour of the child with D.S. and the three contrast children in each of the eight classrooms.

This procedure was used to record the following kinds of classroom behaviour:

(i) the type of interaction the child was engaged in,
(ii) whether the child was on-task, off-task or disrupting others,
(iii) the teacher's use of praise and reprimands, and
(iv) the type of instructions given and the proportion of those complied with.

**(b)** In addition to the structured observations, six 15-minute running records of the child with D.S. and one contrast child were collected in each classroom. These were used to collect as much information as possible about what the child did, and language used, the teacher's behaviour, materials used, involvement with peers, and type of activity engaged in.

*Social Participation in the Playground:* This was observed and recorded using six categories which included unoccupied behaviour, solitary play, parallel play, associative play and co-operative play. A further category, inappropriate play was added as it seemed important to investigate whether the children with Down's Syndrome engaged in significantly higher proportions of this type of play which would make them unpopular and rejected by their peers. This type of play was defined as the use of physical aggression by pushing, shoving, tripping, scratching, biting, hair pulling, kicking, pulling clothes, using inappropriate communication such as swearing, name calling, getting in the way of other children, interfering in a group activity.

*Developmental Progress:* The children's rate of progress was measured. The list of 40 developmental skills was drawn from the 84 cognitive, language, fine-motor and self-help skills listed at Levels 4 and 5 of the Down's Syndrome Performance Inventory. Items were selected which children could be expected to acquire prior to school entry, during the first year of school and after a year's attendance.

The majority of skills could be observed in the classroom situation while the interval and running records were being undertaken. Where certain skills were not observed, children were assessed directly in the home or the classroom teacher was asked whether or not the child could perform the task.

## Teacher Attitudes

IT WAS CLEAR that even after a year of having a D.S. child in their classes these teachers were still uncertain about the value of integrating children with D.S. into regular classes. They were undecided about whether children with D.S. would develop skills more rapidly in a special or regular class and whether children with D.S. should be integrated once they passed the junior classes.

There were a number of discrepancies between teacher's beliefs about the D.S. child's behaviour and the child's actual behaviour. One child's teacher agreed that 'During play and lunchtime, the D.S. child tends to be socially isolated from his/her classmates.' However, this belief is inconsistent with the data which shows that far from being socially isolated, he spent two-thirds of his time engaging in social play.

## Time On-Task and Disruptions

HALF OF ALL THE TEACHERS agreed that children with D.S. are more disruptive in the classroom than their same-age peers. As can be seen from Table 1, the disruptive behaviour recorded was similar for both the children with D.S. and the contrast children. Two of the children had teachers who agreed with the statement, yet neither child displayed any disruptive behaviour at all, whereas the contrast children did. Another child's regular class teacher strongly agreed with the same statement, yet there was no evidence of disruptive behaviour. It is also interesting to note that the teachers of two disagreed with the statement, even though these children engaged in more disruptive behaviour than the contrast children in these classes.

The data also indicated that, with the exception of one child, the children with D.S. were at least as attentive as the contrast children. Half the teachers thought D.S. children are less attentive to what they are supposed to be doing. While the exceptional child was considerably less attentive than the contrast children in her class and another was somewhat less attentive, the rest spent a similar percentage of time on-task to that spent by the other children.

Table 1:
*Percentage of Time On-Task and Disruptive Behaviour Per Hour*

| | Percentage Time On-Task | Number of Disruptive Behaviours |
|---|---|---|
| Subject 1 | 81 | 0 |
| Contrast Mean | 81 | 3 |
| Subject 2 | 83 | 1 |
| Contrast Mean | 84 | 1 |
| Subject 3 | 94 | 4 |
| Contrast Mean | 91 | 3 |
| Subject 4 | 71 | 4 |
| Contrast Mean | 80 | 4 |
| Subject 5 | 84 | 0 |
| Contrast Mean | 77 | 5 |
| Subject 6 | 91 | 2 |
| Contrast Mean | 89 | 3 |
| Subject 7 | 80 | 6 |
| Contrast Mean | 83 | 2 |
| Subject 8 | 59 | 9 |
| Contrast Mean | 84 | 2 |
| D.S. Group Mean | 80% | 3 |
| Standard Deviation | 10.39 | 2.94 |
| Contrast Group Mean | 84% | 3 |
| Standard Deviation | 4.29 | 1.16 |

## Interactions with the Teacher

THE CHILDREN WITH D.S. received four times as many positive statements concerning appropriate behaviour as the contrast children and they received slightly fewer reprimands. It is interesting to note that one child with D.S. received no reprimands at all whereas the contrast children received reprimands at the rate of 23 per hour.

The children with D.S. also had more questions directed to them than the contrast children. They received approximately three times as many questions as the contrast children. This trend was also evident in the running records.

While the children with D.S. as a group received slightly more group instructions than the contrast children, they received four times as many individual instructions as the contrast children. Again, this trend was evident in the running records.

## Compliance

THE CHILDREN WITH D.S. as a group complied with 10% fewer instructions than the contrast children. This occurred with both instructions directed to the whole class and with instructions directed to them individually. However, considering that the children with D.S. received three times as many instructions as the contrast children, the actual number followed is still high.

While the children with D.S. were usually compliant, they did not always follow group academic content-related instructions correctly. For example, in one episode, the teacher said, 'Pick up five rods', and the child with D.S. complied with the instruction but picked up four rods instead of the five requested. These types of episodes occurred frequently with the D.S. children, but not with the contrast children. However, when academic instructions were directed to the children with D S. individually, they complied with them 100% of the time and followed two-thirds of them correctly.

## Social Interaction

IT IS COMMONLY BELIEVED that D.S. children will be isolated in ordinary classes and seldom approached by the other children. On the whole this is not true. During the observations only one child was never approached and four of the eight were approached more often than others in the class.

The children with D.S. generally initiated fewer interactions with their peers than the contrast children but the running records have revealed that there is great variety and considerable depth in these interactions. It was very worthwhile examining the social processes taking place and the excellent progress the children with D.S. made. Because peer interaction is very significant for development it is important for those involved in mainstreaming to give as much time to this social process as to the more easily measured 'skills' such as tying shoe laces, using scissors or naming colours. Here are some of the findings:

One girl initiated 30 interactions with peers, while one of the boys initiated only 8. However, of the girl's tries nearly half were negative and nonverbal and only half of them got any response. The interactions initiated by the boy were more complex and positive and all but one got a positive response. They were in face of a type that enabled him to extend his knowledge and understanding as well as develop and maintain positive relationships.

Overall I found that the children with D.S. used as wide a range of skills to interact with their peers as the contrast children. At six to seven years, they are capable of using language to control the behaviour of others, respond positively to peers, seek out information, contribute to conversations, make their needs known and describe what they are doing. They did not, however, use these skills as often.

The children with D.S. spent more time babbling and in negative nonverbal behaviour such as fiddling with peer's clothes or possessions, pushing, or taking property, while the contrast children engaged in more whispering, making neutral comments, asking questions and making positive self-statements.

The main difference, was that the children with D.S. asked *fewer questions* and made *fewer neutral comments* about their tasks, play and ownership of property. They may be gaining less knowledge, information or ideas from their peers than the contrast children, as well as initiating fewer interactions.

Although the length of statements made by the children with D.S. was shorter, the actual messages conveyed by the statements were very similar. The following are examples of direct instructions/controlling comments:

*Children with D.S.*

Stop. (To peer playing an instrument too loudly.)
Give it to me.
Don't, you'll break it.
Shsh, keep quiet.
Come on.

*Contrast children*

Move that building over to that side.
Leave them, I'm tidying them up.
Get out, I can't see.
Come around this way.

Some of the more advanced skills, those requiring more abstract thought, non-egocentric thinking and more complex language, were beginning to emerge in some of the children with D.S. For example, when one was standing in line to have his work marked, he whispered to the peer next to him. This suggests he has developed an understanding of the *effect* of his behaviour on others. In this case it was appropriate to say something quietly to a particular person and not necessarily aloud to the whole group and/or teacher. Another was able to see things from another child's viewpoint when he tried to comfort a peer who had fallen over. He was aware that she was hurt and used appropriate language and actions to respond to her.

The children with D.S. and the contrast children spent exactly the same percentage of time (17%) engaged in positive nonverbal behaviour such as smiling, laughing, giving, comforting/cuddling and anticipating peer's needs.

Both spent a similar percentage of time engaged in positive verbal comments. For example:

*Children with D.S.*

You can have it. (Offering a book to a peer.)
Hello. (Greeting a new peer in the book corner.)

*Contrast children*

Come over here. (Invites peer to join in.)
Here. (Shows peer the correct place for box.)

The children with D.S were no more negative in their talk with peers than the contrast children. Both groups of children engaged in these comments for virtually the same percentage of time.

*Children with D.S.*

You took the felts.
Naughty girl.
I've got two, Ha, Ha.

*Contrast children*

You're a naughty boy.
That's not good. It's not nice.
Don't be so smart about it.

## *Affectionate Behaviour and Mimicry*

ARE DOWN'S SYNDROME CHILDREN '. . . affectionate and characteristically cheerful . . .'? Two of our D.S. children were seldom affectionate and cheerful. The others showed the same percentage of positive and negative behaviour as the contrast children. One child with D.S. initiated inappropriate affectionate cuddling on one occasion when she was on the mat with her classmates listening to a story. However, a contrast child displayed exactly the same behaviour on two occasions. This highlights the importance of observing non-retarded peers before making conclusions about the behaviour of children with easily identifiable handicaps.

Children with D.S. are also frequently referred to as 'good mimics'. I found the children with D.S. could generate a large number of creative responses when interacting with peers. There was no evidence of any inappropriate mimicry. In fact, during one lunchtime, one child *initiated* a game involving stamping feet and smiling with peers in which eventually the entire row of children sitting on the bench joined in. It is not necessarily only children with obvious handicaps who have difficulty in eliciting responses from peers. One contrast child who seemed to make clear requests and statements when showing things and had no obvious disability, had difficulty in gaining responses from peers. Peers responded to his interactions only 57% of the time, which was the lowest response rate of all.

## *Social Play at Lunchtime*

ON THE WHOLE, the data provides no support for the commonly held myth that children with D.S. are socially isolated during unstructured time. Time spent in inappropriate play was virtually non-existent for all the D.S. and contrast children.

It is interesting to note that all the children with D.S except one initiated more interactions during the school lunch period than in the classroom. It is likely that this setting allows the children to interact more freely without teacher demands or specific tasks to be performed.

This did not apply to the contrast children who on the whole initiated either the same amount as in the classroom or less.

The children with D.S. on the whole were more nonverbal than verbal when interacting but one child used language in all but two interactions. She showed evidence of lengthy conversations not observed in the classroom. An example follows:

*D.S. Child* Where's your puppet?
*Peer* At home.
*D.S.C.* Oh.
*Peer* I've finished that. (Lunch.)
Can I have some? (Pointing to D.S.C.'s chips )
*D.S.C.* Yes.
*Peer* Have you got some left?
*D.S.C.* Not much.
Peer takes some chips.
*D S.C.* That's all.
*D S.C.* No more, O.K.?
Peer smiles at D.S.C.

This conversation shows the ability to share/give, ask questions, answer questions and make controlling comments.

Some children used a greater range of abilities when interacting with peers during the school lunch break than in the classroom. On child with D.S. who initiated few verbal interactions with peers in the classroom showed a *greater range* of abilities, and some others not used in the classroom: asking questions, showing, and neutral comments. Another child with D.S. engaged in *longer* conversations at lunchtime, using a wide range of appropriate skills, which were responded to ever time. These findings highlight the importance of observing children in different settings to gain a total picture of the child's abilities.

## *Developmental Progress*

ALL 7 CHILDREN (for whom complete data are available) maintained or surpassed their rate of progress after one year's school attendance. In other words, each child continued to develop new academic and social skills whilst attending their local schools.

## *Discussion*

### *Myths*

THERE WERE A NUMBER of discrepancies between teachers' beliefs and the children's performance in the classroom. On the whole the children with D.S. spent as much time on-task as the contrast children, they were socially integrated at lunchtime, they were no more disruptive than the contrast children and although they initiated fewer interactions to peers, they received as many interactions from peers as did the contrast children. Even though they did not always follow instructions correctly and they followed aproximately 10% fewer instructions than the contrast children, they were compliant, especially considering that they received three times as many instructions as the contrast children. These discrepancies between teachers' perceptions of the D.S. child's behaviour and the child's actual behaviour would suggest that teachers have difficulty in isolating the child's behaviour from that of the handicapping condition. I hope this research will help.

### *Attention*

That the children with D.S. received three times as much positive attention and three times as many questions from their teachers is consistent with previous research. The results suggest three major factors operating simultaneously.

(1) A lot of the observations took place during group activities with the D.S. children usually required to sit at the front of the group – the contrast children frequently chose to sit near the back. The closer they sat to the teacher, the more likely they were to be involved in interaction with the teacher.

(2) The use of frequent questions, instructions and positive attention for appropriate behaviour may have developed as the teachers' strategy for maintaining attention-to-task.

(3) The teachers were well aware that the child with D.S. was the main focus of the study.

This high rate of teacher-initiated interaction could in part account for the lower number of D.S. children's interactions with peers. Since, in many situations, initiating conversations with peers is incompatible with the on-task behaviour, following instructions and listening to the teacher, this did not leave the D.S. with as many opportunities for initiating interaction with peers.

### *Instructions*

The children with D.S. received three times as many instructions as the contrast children. Some of these instructions were used as a strategy to keep the children on-task and to direct them back when off-task, but this was not always the result. The running records revealed that a large number of these instructions may in fact reward the child for being off-task. The following example from the running records illustrates this:

*Teacher:* Come on Susan, get cracking. You've got a new book, there, so get cracking.
Susan copies the next letter in her printing book, then stares into space.
Teacher leaves her desk and comes to Susan's desk.
*Teacher:* Come on Susan, you've got work to do. Do your best printing.
Teacher goes back to her desk to hear a child's reading.
Susan watches the teacher.
*Teacher calls out to Susan:* Come on Susan.
Susan copies the next letter, then looks around the room.
Teacher: Susan, wakey, wakey.
Susan copies the next letter, then stares into space.

This example illustrates two main points. First, it would appear that the child is rewarded, by attention, for engaging in off-task behaviour. Secondly, the example also suggests that the child was compliant, but that she was slower and often did not keep going, as evidenced by Susan actually following the instruction (copying the next letter) then staring into space. As a result, the child with D.S. is less likely to complete the required task.

A more appropriate strategy might have been to praise on-task behaviour and avoid attention to off-task behaviour by eliminating the instructions while the child is off-task. It is likely that more specific instructions would also aid the child with D.S. For example, instead of saying, 'Come on, Susan, you've got work to do. Do your best printing', the teacher could say, while demonstrating what was required, 'Print a line of O's from here to here like this.'

*Time-on-task*

Most of the children spent as much time on-task as the contrast group. However, the present data would indicate that it is not the amount of time on-task that is the crucial factor, but the actual content of the curriculum. Perhaps we should be asking whether the children are actually learning from the task as opposed to merely engaging in it to comply with the teacher's instruction. The running records indicated qualitative differences in the type of experiences and activities the subjects received in their various classrooms. For example, one child engaged in approximately the same percentage of time on-task as another, yet the only cognitive activity for the first was printing whereas the second regularly engaged in reading, mathematics, printing and group games such as lotto and colour matching.

*Progress*

While all the children continued to make progress in developmental skills during their first year of school, the running records revealed a lack of progress in some areas of the curriculum. For example, one child had left the Early Intervention Programme (pre-school) with a sight vocabularly of 6 words, the ability to select 4 colours on cue and to print the numbers 1 and 2, yet no further progress had been made in these areas after a year at school. On the other hand, another child who had a sight vocabulary of 20 words when leaving the Early Intervention Programme was fluently reading the green books of the Ready to Read series a year after starting school. Generally it was evident that there was little continuity between the kinds of skills the children with D.S. were developing at the Early Intervention Programme and what they were working towards at school.

While one would expect different goals and objectives once a child starts school, it seemed clear from the observations and teacher's reports that they were uncertain about planning an appropriate programme and desired more help with programme planning.

Teachers and teacher aides reported using the Portage Guide to Early Education as a basis for the child's individualized programme, even though the skills were not necessarily related to what the other children in the class were doing. Caution must be exercised when using such a developmental programme with school-aged slow learning children, such as the subjects from the present study. When skills from such a programme form the basis of the child's individualized education programme and the skills are not directly related to those needed for regular class participation, then age-inappropriate behaviour is likely to develop. Slow-learning children such as the subjects of the present study could still be stacking blocks at adolescence if they are not challenged with more age-appropriate activities.

A more appropriate approach would be one where essential skills for continued integration are identified, observations of the child in his/her environment are made and a remedial programme based on these skills and observations implemented. Some of the skills the children with D.S. lacked included library skills – scanning a shelf and choosing an appropriate book, finishing a task, such as a row of printing, staying with a specified group/task at physical education. These types of skills are not usually found on ready-make checklists, yet their acquisition would facilitate the child's integration into his/her classroom.

*Extra help*

These results suggest that there is a need for an itinerant teacher to work regularly with each child, classroom teacher and teacher aide. An itinerant teacher visiting each child at least once a week could provide regular feedback concerning the behaviour of the child with a view to programme planning, provide a link between home and school so that both can work together and to assist the child to participate in classroom activities, particularly those of a more academic nature. For children such as the three subjects who engaged in low levels of social play in the playground, the itinerant teacher could develop a peer tutoring programme to increase the rates of social play among the children with D.S. and nonretarded peers.

*Range of Abilities*

One of the most encouraging findings of this study is the large range of skills the D.S. children possessed when interacting with their peers. This is particularly so, since, traditionally, children with D.S. have been thought to lack age-appropriate skills, especially communications skills and many older texts have described their mental development never going beyond that of a 6- or 7-year old. Many of the subjects in the present study already had communication skills appropriate to their age and there is no reason to believe that these skills would not continue to develop.

*Ability to De-center*

The running record data provide educators with some insight into the social processes the child is using and this is useful information for curriculum planning. Consider the following situation where a peer has fallen over and is crying:

> He goes over to the crying child and smiles at her.
> He pats her head and asks, 'Is it sore?' She continues crying.
> He says, 'Poor Kelly'. He puts his arm around her and asks, 'All better?

The interaction would indicate that his language is no longer egocentric. He is able to see the situation from another child's point of view and he uses appropriate language and actions to convey this. In this respect, this 6-year-old with D.S. is moving towards the period of concrete operational thought described by Piaget.

Translated into practical terms, a child displaying this level of thought can be further extended and challenged with activities that require taking another person's perspective. Examples include role-playing in puppetry or drama, team/group games such as marbles, hopscotch, tag and so forth. We need to be equally concerned about helping the child develop qualitative shifts in his/her mental structures as well as teaching specific skills. The ability to decenter one's perceptions and therefore view from the perspective of another is an important reasoning process which develops during the concrete operational period (7-11 years). This ability enables the child to develop empathy and form deeper relationships as well as providing the child with a more solid foundation for problem-solving and facilitating cognitive and language development. It is probably not necessary to teach sharing and caring in isolation: once the child has moved to a more mature level of cognitive functioning, then such behaviour becomes possible with the newly acquired level of functioning.

We can capitalise on situations which occur naturally at school to help children with D.S. who are not yet able to take the perspective of another to develop this ability. Highlight the main features of each situation using clear concrete language to help the D.S. child attend to the salient cues, use situations such as helping a child with a broken arm open his/her lunchbox or schoolbag, comforting a hurt child or helping a child carry something heavy.

Furthermore, these situations should be extended into 'second-order' experiences to allow for generalisation, for example, tell stories about how children feel in different situations and how peers respond socially to their feelings. Add colouring-in pictures and making collages around these types of situations. Imaginative play also needs to include the recreating of real-life situations using either the children in different roles or inanimate characters such as dolls, with the children taking turns in both roles. For example, in the block corner, the child could build a high bridge, place a wooden doll on the bridge, discuss how the doll was feeling and why, then following on from this, discuss and role-play solutions, such as taking the doll down from the bridge or placing another grown-up doll to hold the little doll's hand.

Children with D.S. do not readily learn spontaneously from their environment and their learning is at a slower rate. Therefore, structure and practice is necessary for the child to make progressions in his/her qualitative thinking. The content of the curriculum should provide opportunities for practising and discovering activities and experiences which will lead to the next level. If a child with D.S. is moving towards the concrete operational period of thought, then content needs to be biased towards that level rather than the sensorimotor level. Observe the child interacting in all settings to judge his/her level of functioning.

*Peer Responses*

My research also suggests that we need to teach our 'normal' pupils how to respond appropriately to handicapped classmates. Peers frequently replied negatively or not at all to the D.S. children's negative nonverbal interactions. For example, when one D.S. child fiddled with a peer's sock and shoes, while listening to a group story, the peer said, 'Stop that' and physically stopped her. It may have been helpful if the peer had shown her a more appropriate response such as folding her arms. Children with D.S. do not learn spontaneously which cues to attend to. They need to be specifically directed to them, therefore, it would be a useful strategy to teach peers how to show children with D.S. what is expected of them in given situations, such as sitting on the mat, standing in a line and so forth.

It is also clear from the data that peers should respond to babbling with verbal statements. They should not just smile or ignore. In mainstreamed classes we may need to teach peers how to respond to preverbal children's attempts at initiating interactions.

*Suggestions for Increasing Initiations of Interactions*

There is evidence that children are more likely to initiate interactions where there is novelty, disruption or change in the environment. My study also supports this. Considerable interaction occurred when a D.S. child had fish and chips for lunch while her classmates mostly had the usual sandwiches. Another who asked no questions in the classroom, asked a peer who had a novel thermos flask, 'What's that?' Another, when asked to tidy the cuisennaire rods with a peer was amused to see a 'house' someone had built from the rods left undestroyed on a desk. She said excitedly. 'Look, a house'. New books were out in the book corner during one of the days another D.S. child was observed. On this occasion she initiated most of her verbal interactions.

It would seem that introducing novelty, changes and disruptions to usual routines could be a simple, effective and cheap method of encouraging more peer interaction in all children, but have particular benefits for children with D.S. who because of their lower level of arousal tend to need more stimulation to do something new or to interact. To introduce novelty and change, with minimal effort, scissors can be cellotaped together, broken pencils given out, pictures displayed upside down, insufficient materials for an activity handed out. These situations stimulate children to ask questions, seek help, give instructions, describe the incongruity, provide suggestions, make comments, and so forth.

Creating novelty and change can also be applied to lunches. Caregivers of all young children could introduce novel-shaped sandwiches, wrapping small items such as biscuits, packets of raisins in Christmas paper, using novel containers and highly-rated foods, such as fish and chips. Since children with D.S. ask questions considerably less frequently than Contrast children, this may arouse their curiosity and motivation to seek out information.

The other category the D.S. children engaged in less was making neutral comments about what they were doing. We know very little about how to help children acquire this component of social interaction. It is clearly important since it extends and maintains mutually satisfying encounters. We may need to highlight this subtle aspect since it may not readily be acquired by children who generally have greater difficulty learning spontaneously from their environment.

*Peer Interaction and Unstructured Time*

These are vital aspects of the learning process. For these children with D.S. the unstructured aspect needs to be monitored and guided if the children are to benefit optimally from it. But it is involvement with nonretarded peers that enables the children with D.S. to continue developing new skills, particularly in the social, cognitive and language areas.

The importance of spending time alone with peers was particularly evident at lunchtime when there were no competing classroom demands for their attention. Almost all of the children with D.S. initiated more interactions during this time. Where children are constantly having demands made on them by adults or tasks, little opportunity is presented for them to initiate interactions with peers. The data does not support the desirability of special individualised teacher-directed programmes which operate for a large part of the school day. There is great value in unstructured time, in which the children can initiate and develop their own understanding of how to influence their environment. That is more beneficial than being a passive recipient of a teacher-directed curriculum.

To ensure that each child leaving the Early Intervention Programme continues to have some continuity in his/her educational programme and to pass on all relevant information concerning the child to the child's school, a case conference involving the Early Intervention staff, child's teacher, parents, adviser of the handicapped and psychologist is now compulsory for all children leaving the Intervention Programme. Information concerning the child's skills and what goals he/she is working towards is passed on and a further case conference is held one term later to review the child's placement and programme.

In summary, it is encouraging that these eight children with D.S. are still integrated within the regular school system and continue to make progress at their own rate a year after their entry to school. While the data show few differences between the child with D.S. and the contrast children in behaviour, it is in the area of appropriate programme planning within the integrated setting that further research is needed.

## Notes

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The trend to integration or mainstreaming is prompted by the four factors listed at the start of this item Research backing up these factors can be found as follows

1(a). **No educational benefit from segregating**

Blatt, B. and Garfunkel, F. (1973) Teaching the Mentally Retarded. In P. Travers, (Ed.), *Second Handbook on Teaching* Chicago: Rand McNally.

Budoff, M. and Gottlieb, J (1976) Special-Class EMR Children mainstreamed. A Study of an Aptitude (Learning Potential) X Treatment Interaction. *American Journal of Mental Deficiency*, Vol. 81, pp. 365-374.

1(b). **Significant benefits from integrating**

Macy, D.J. and Carter, J.L. (1978) Comparison of a Mainstream and Self-Contained Special Education Program. *Journal of Special Education*, Vol. 12, pp 303-313.

Espiner, D., Wilton, M.M. and Glynn, E.L. (1985) Social Interaction and Acceptance of Mildly Retarded Children in a Mainstream Special Educational Setting. *Australian Journal of Special Education*, Vol. 9, pp 8-15.

2. **Human rights**

Wolfensberger, W. (1972) *The Principle of Normalisation in Human Services*, Toronto, Canada: National Institute on Mental Retardation

Perrin, B. and Nirje, B. (1985) Setting the Record Straight A Critique of Some Frequent Misconceptions of the Normalisation Principle. *Australia and New Zealand Journal of Developmental Disabilities*, Vol. 11, pp 69-74.

3 **USA's trend setting law**

Public Law 94-142, (1975). Education for All Handicapped Children Act, Washington, D.C

4. **Early intervention programmes**

Champion, P.R. (1982) An Investigation of the Sensorimotor Development of Down's Syndrome Infants Involved in an Ecologically Based Early Invervention Programme. Christchurch University of Canterbury, Unpublished Ph.D Thesis

Gibbons, J.A. (1985) The Social Interaction of Down's Syndrome and Other Children in Mainstreamed Preschool Settings. Christchurch: University of Canterbury, Unpublished M.A. Thesis

**The Measures:** The questionnaire for teachers was devised by the researchers, the observation schedules were devised by the researchers (these are available from the author), social participation was recorded using a modified version of

Parten, M B (1932) Social Participation Among Preschool Children. *Journal of Abnormal and Social Psychology*, Vol. 27, pp 243-269.

**Developmental progress was measured using selected parts of**

Hayden, A.H. and Dmitriev, V. (1971) *Down's Syndrome Performance Inventory.* Seattle, Washington: University of Washington (Experimental Education Unit, Child Development Center).

**That D.S. children usually get more positive attention from teachers was discovered previously and written up in**

Hudson, A. and Cluniés-Ross, G.A. (1984) A Study of the Integration of Children with Intellectual Handicaps into Regular Schools. *Australia and New Zealand Journal of Developmental Disabilities*, Vol. 10, pp. 165-177.

**Are D.S. children 'affectionate and characteristically cheerful'? The quotation comes from**

Heaton-Ward, W.A. and Wiley, Y (1984) *Mental Handicap* (5th Edition). Bristol: Wright.

**Are D.S. children good mimics?**

See Heaton-Ward above and Gibson, D. (1978) *Down's Syndrome: The Psychology of Mongolism.* Cambridge: University Press

**That teachers interact more with children who sit near the front is folk-law and confirmed by**

Moore, D.W. and Glynn, E.L. (1984) Variation in Question Rate as a Function of Position in the Classroom *Educational Psychology*, Vol 1, pp. 233-248.

**Rewarding children unconsciously with attention for off-task behaviour is also described in**

Madsen. C.H., Becker, W C., Thomas, D.R. Koser, L. and Plager, E. (1968) An Analysis of the Reinforcing Function of 'Sit Down' Commands. In R.K. Parker, (Ed.), *Readings in Educational Psychology.* Boston: Allyn and Bacon.

**Most of the D.S. children spent as much time on-task as the contrast children. This finding is similar to that of**

Bray, D.A. and Wilton, K.M. (1975) Classroom Behaviour of Intellectually Handicapped Children and their Teachers. *Australian Journal of Mental Retardation*, Vol. 3 pp 154-161.

and

Forness, S R , Guthrie, D. and MacMillan, D.L. (1981) Classroom Behaviour of Mentally Retarded Children Across Different Classroom Settings *Journal of Special Education*, Vol. 15, pp. 497-509.

**That children with D.S. do not learn spontaneously which clues to attend to and therefore need to be directed to them is discussed in**

Cunningham, C C and Sloper, P. (1978) *Helping Your Handicapped Baby* London. Souvenir Press

**The evidence that children are more likely to initiate interactions when there is novelty can be found in**

Holdgrafer, G. (1987) 'Getting Children to Talk'. *Canadian Journal for Exceptional Children*, Vol 3, No 3

**An interesting account of an itinerant teacher working regularly with D.S. children who have been integrated is**

Pieterse, M. and Center, Y (1984) The Intergration of Eight Down's Syndrome Children into Regular Schools *Australia and New Zealand Journal of Developmental Disabilities*, Vol. 10, pp. 11-20.