An Eight Year Old at The Hamlet

Perceptual training for Gavin, a mentally handicapped, hemiplegic South African boy, is described by Jeanette Gillibrand, speech therapist, and Lucy Rubin, teacher, at The Hamlet in Johannesburg

EACH mentally handicapped child is unique, with an individual scatter of abilities. This scatter must be thoroughly explored, his potential estimated and then exploited to the full in the classroom situation.

At The Hamlet, an all-age school for the mentally handicapped, and the largest day school of its kind in South Africa, we are continually trying to introduce new techniques and approaches with our English- and Afrikaans-speaking pupils. We hope that these innovations, made with the framework of a structured environment and a curriculum designed to meet individual needs, will help the child to respond positively to the learning situation and aid his social adjustment.

Before new methods and techniques can be carried out effectively, however, the difficulties of the children need to be diagnosed. Tests such as the South African Individual Scale of Intelligence, The Marianne Frostig Developmental Test of Visual Perception and the Gesell Developmental Schedule suggest that their major difficulties are the following:

(a) Perceptual difficulties which include visual, auditory and kinaesthetic perception and which constitute the greatest difficulties of our children (perception being defined here as the child's identification of what he sees, hears, touches, handles and smells);

(b) number concepts which depend on the above;

(c) gross coordination which lays the basis for hopping, running, jumping and walking up and down stairs;

(d) fine coordination of the small muscles which is required for handicrafts and pencil control;

(e) socialization which not only involves the children's communication with other people but also their ability to adapt to their environment on concrete, abstract and interpersonal levels.

Perceptual difficulties affect our school population more than any others listed above. In this article we shall describe some approaches to perceptual training which have been developed, with special reference to Gavin, an eight year old boy at the school. This training is planned to increase the child's awareness and understanding of his environment so that, as it becomes more meaningful to him, he can progress towards a more formal learning situation and a programme designed specifically to meet his needs.

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The Profile of Gavin

Gavin is a child in a class of children with I.Q.s from 34 to 53, whose inadequate intellectual, psychological and social relationships are conspicuous both in the classroom and the speech therapy situation. Because of Gavin's gross inadequacies in perception, motor coordination and concentration span, his intelligence cannot be satisfactorily measured by means of formal tests. However, on the S.A.I.S. he reflects an I.Q. score of 49 while on the Merrill Palmer performance test his score is 38.

Gavin is a left hemiplegic and also manifests the Treacher Collins syndrome. This is mainly familial and involves an anti-mongolian slant of the eyes and other abnormalities of the iris, megancephaly, other abnormalities of the skull and mild retardation. (Gavin's severe retardation may be associated with an earlier operation when he was thought to be hydrocephalic.) He is the younger brother of two children, the elder sister showing no abnormalities, and he presents the following profile.

Gross and fine coordination are very poor and fine coordination is further hampered by poor eye movements.

Verbal ability, on first meeting, appears good because he tends to be garrulous but closer observation reveals that he has poor comprehension of language, a limited vocabulary and a number of difficulties in his speech concept. He forms no fixed relationships but is a sociable, friendly child.

Visual perception is very poor and he finds it difficult to follow moving objects with his eyes. Gavin operates only on a concrete level. He is able to differentiate but not name or associate colours. He can discriminate shapes and has shape synthesis—that is, he is able to put shapes

together to form an object and see an object as a combination of shapes.

Body awareness is poor, possibly due to the spasticity. Because he has difficulties over spatial relationships, Gavin is unable to appreciate number concepts. He is able to position concrete objects in space, however, and can grade objects according to size, length, height and so on. He is unable to combine and relate information received from different perceptual fields.

Auditory perception is not good. Gavin is able to imitate but not differentiate auditory stimuli. Auditory memory span is poor.

Kinaesthetic perception is not yet established — Gavin is unable to identify objects by touch and neither can he appreciate such related concepts as hard, soft, silky, prickly.

General Plan of the Programme

As with all other training it is essential that work in perception is concrete, motivating and verbalised. The programme is designed to follow normal development from sensory-motor organization to cognitive functioning. Both body schema and body image are prime requisites for the self-awareness which the child needs to develop before he can manipulate his environment.

The programme consists of auditory, visual, kinaesthetic and tactile training and the school day is organized in such a way that one particular aspect of the programme is continually reinforced in all the activities of that day. Although one aspect is emphasized each day all other aspects are, of course, incidentally included. Practical application of the training planned for the day is encouraged during the singing and free play period and at cocoa and meal times.

Auditory Training

An auditory programme concentrates on:

(1) extensive sound stimulation;
(2) differentiating between two chosen sounds;
(3) memory of sound;
(4) synthesis of sounds into words;
(5) synthesis of words into sentences;
(6) synthesis of sentences having related ideas.

Gavin's particular needs are differentiation of sounds, a build-up of vocabulary and synthesis of sentences having related ideas.

These can be met in the classroom through a project, such as a farm environment. Gavin finds suitable pictures, cuts them out, pastes them on individual sheets and learns to recognize the animals by their noises. In the music lesson the singing of *Old McDonald had a Farm* is a continuation of the same theme; alternatively he and other children can run round the room taking turns to make the noises of different chosen animals.

During speech therapy the same farm project can be used. Gavin will close his eyes and listen very carefully to identify which animals are on the farm. He then names the animals. When difficulty or confusion is shown Gavin is bombarded with sound stimulation so he learns to recognize the right from the wrong.

The game 'I hear with my ears' trains the children to listen to the first sound in the word and Gavin learns to differentiate sounds and avoid sound substitutions. To help sound differentiation further he can wind a ball of string while the therapist whispers a sound down a cylinder which leads to his ear. He must stop winding as soon as he hears the wrong sound in his ear. Pictures and various objects, such as dolls' house furniture, are used extensively to build vocabulary while the re-telling of stories makes it easier for Gavin to produce a series of related sentences.

Visual Training

Visual training invloves training in:

(1) body image;
(2) body schema;
(3) relationship and position of body in space;
(4) colour;
(5) shape;
(6) shape synthesis;
(7) shape relationship and shape constancy;
(8) directionality;
(9) position and relationship of objects in space;
(10) figure-ground discrimination, from basic to fine differences;
(11) associated memory.

Gavin needs training in all these areas. If he is to understand his visual environment he must establish a relationship between himself and concrete objects. Shape, colour, size, direction and position in space must be appreciated in relation to his own body before he can apply such concepts first to animate objects and then to inanimate objects.

In all these areas verbalization and language are very important. At Gavin's level ,an activity to build up body image would be verbalizing the putting on of clothes, washing and various motor activities. This training can be further reinforced with activity songs performed in front of a mirror. Games such 'Do this, do that' foster laterality. Obstacles such as little chairs and

tables can be suitably placed so that Gavin has to manipulate his body through and around such obstacles. Play on outdoor equipment like slides, swings and barrels enables Gavin to appreciate the movement of his body in space.

We found that, although Gavin was able to construct the figure of a man from clay and other building equipment, he did not realise that this was a reflection of his own body. We therefore stood him against a large sheet of paper, traced his body and filled in the features with wool (hair), buttons (nose) and silver paper (finger nails). This gave Gavin a pictorial representation of his own body as an integrated unit.

Unestablished laterality often shows itself in a difficulty with balance, which we try to improve by using the Kephart walking plank and balance board. Once some improvement has been made the activities seen in pictures can be translated.

Speech therapy can be done in front of the mirror so that body awareness is automatically reinforced. Puppet play and action stories can be used. Games such as Picture Lotto are very useful in building up language and are beneficial in training perception. Gavin will be asked to act out what he sees in the picture and copy the exact poses of the people. In this way he learns to interpret what he sees.

Colour and shape training is done through association. For instance, a particular object is red like a tomato, red like the traffic light that says stop; round like a ball or a plate. In shape training the child feels the shape on sandpaper or makes it in the sand. In the same way shape synthesis is developed by association — a combination of a square and triangle will form a house, a circle and an oblong will form a tree.

Constant verbalization — describing the environment in terms of shape, colour and position— helps the child to establish a shape and colour constancy and a shape relationship. The analysis of details is difficult for the retarded child and we therefore begin with large simple aspects of the environment. Memory, too, is built up by constant verbalization and by encouraging the child to relate his experiences.

Kinaesthetic and Tactile Training

Aspects of this training are closely related to other parts of the programme and include:

(1) movement;
(2) direction;
(3) balance;
(4) discrimination;
(5) classification;
(6) body schema.

Gavin again needs all aspects of training in order to acquire a kinaesthetic appreciation. A retarded child reacts reflexly to many kinaesthetic stimuli although the intensity of the stimulus has to be increased to produce the reaction.

The main aspect of training is to allow Gavin to experiment with various materials and objects and relate these experiments to experiences such as temperature, movement and tactile appreciation. Shape can be translated into the actual position of the limbs such as lying dead straight —a straight line; rolling over and over—a round ball; standing with the legs apart—a triangle. As has been mentioned before, shape can also be felt by using sandpaper shapes or drawing the figures in the sand or with finger paints. Modelling with doughs of different consistencies enables the child to appreciate the difference between hard and soft. He can be allowed to play with different materials such as foam rubber, rubber, wood, cotton wool, silk, sandpaper and shiny paper until he is able to recognize these textures blindfold. Likewise hot and cold must be taught through experience.

Therapy must be active; the concepts talked about must be experienced until the child has an internal appreciation and awareness of them.

Integration of the Programme into the Daily Routine

In all these aspects of training there are several activities which lend themselves to stimulation of the whole child through motor, sensory and emotional experiences. A visit to the zoo offers unlimited opportunity to stress colour, size, number, position in space and distance.

There is also opportunity for tactile stimulation at the farmyard section of the zoo, since the animals can be handled. Visual or aural stimulation can be emphasized on other visits and Gavin can, for instance, see the colours of the animals and the colours of their homes; note and grade the size of the animals; listen to and imitate their noises; observe the type and shape of their enclosures.

However, it is not only on special outings that opportunities are found. At mealtimes the colours of the utensils, meats, fruits and vegetables can be taught. Coordination is exercised in pouring from the heavy jug and serving the meal; the temperature and quantity of the food are appreciated. Learning to set the table at mealtimes reinforces part of the programme's training.

Our school is situated on a busy thoroughfare and half an hour standing at the fence can also prove very stimulating. Competitive games can be played while watching the cars pass by. The

children identify the colours of the cars, the shapes of the cars, the fast cars, the slow cars, direction of cars, cars driven by women, cars driven by men — the opportunities are limitless but it is necessary for all these aspects to be drawn to the attention of the children.

Conclusion

Through experience with mentally handicapped children like Gavin we realize that they are unable to draw unaided from everyday experiences because, for them, the world is a chaotic conglomeration of sights, sounds, smells, tastes, textures and movements. By being helped to organize the environment into meaningful stimuli they can orientate themselves to their surroundings, draw from previous experience and develop simple concepts necessary for formal learning and purposeful activity.

During Gavin's training his gross and fine motor coordination have greatly improved and balance is no longer a problem.

A marked improvement has been noticed in Gavin's body image, body schema and position of body in space. Directionality is also better and Gavin has also learnt to appreciate the kinaesthetic sensation of, for instance, hard, soft and rough.

He has improved in his sentence construction with associated meaning although not to the point of being able to construct a meaningful paragraph spontaneously.

Although in this article we have differentiated the various perceptual aspects, training is not given in isolation. Each concept is presented in all possibilities for reinforcement and transfer and we always work from the easy to the difficult and from the concrete to the abstract.

Summary

Our programme is based on the surmise that children need specific abilities before they can be presented with any abstract learning situation. As our children have I.Q.s of under 50, they have not developed to the normal six year old level at which such abilities usually show themselves. When, therefore, their environment is made comprehensible to them, their perception is organised and their activities are made meaningful — with constant possibilities for reinforcement and transfer — many of these aspects of learning readiness can be trained.

In our article we have given the profile of a typical child in the class and shown how his needs are met in our programme.