

IMPROVISATION IN ORTHOPTICS—THE ROLE OF AN ORTHOPTIST IN THE ASSESSMENT OF THE MULTIHANDICAPPED, VISUALLY IMPAIRED CHILD

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Abstract

This paper describes the orthoptist's role in the assessment of visual problems in the multihandicapped, blind child.

This role has included modifications of standard testing procedures as well as tests specifically designed for multihandicapped children. The importance of the orthoptist in group discussions and planning programmes is emphasised.

Key words: *modifications, group discussions, programmes, vision tests, innovative methods.*

The Royal N.S.W. Institute for Deaf and Blind Children has employed an orthoptist in the Special School for Multihandicapped Blind Children since January, 1984.

The special school has one hundred and seven (107) students. All of the children have some form of visual impairment; some have physical and/or hearing impairment and they all have an intellectual impairment. The children have a teaching ratio of one teacher or teacher's aide to two students. There are also physiotherapists, welfare workers, a speech pathologist, speech teacher, psychologist, occupational therapists, music teacher, physical education teacher, orientation and mobility instructor and an orthoptist.

The role of an orthoptist includes assessment of visual function, research and documentation of the children's disabilities, arranging a quarterly clinic for the visiting honorary ophthalmologist, applying for blind persons' travel permits and taking some children for outside ophthalmological appointments and to

OPSM for filling of spectacles. This role has been extended even further to include specific programmes for the young children with cortical blindness, hoping to train them to use the vision they have for orientation and mobility purposes.

Advice is given regarding classroom lighting and placement of desks, stressing that children's desks should be facing away from windows. Advice is also given as to size and colour of teaching material, stressing that objects with high contrast should be used. Explanations are provided concerning the benefit of compensatory head postures.

The Institute has an inservice training course and the orthoptist lectures on structure and function of the eye and basic abnormalities, the effects of blindness on development, and the role of an orthoptist and testing methods used.

Every week all members of the health team assess two children who are reviewed in a one-hour meeting. At the meeting everybody, including the classroom teacher, parents and

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Figure 1: Adapted Sheridan Gardiner board.

house parent, gives an input on the child's progress, problem areas, etc., and these are then discussed and solutions hopefully offered.

Visual acuity is the test of most interest to staff and this is then related to classroom activities. Results therefore have to relate to a teaching situation, so tests are aimed at visual functioning rather than a specific measure of visual acuity. If it is possible, a visual acuity reading is given, otherwise this is interpreted to describe the colour, size, shape of objects seen, at what distance and how this affects the method of teaching. The presence of a squint, pupil reactions and ocular movements are noted. Occasionally, response to convergence is tested, or with the more co-operative children, Lang's pen test is used.

In order to begin testing visual acuity, it is necessary to gain some idea of the standard reached in school work and the skills acquired and this is then adapted to a visual acuity test.

With deaf children of normal intelligence it is possible to use the Snellen's chart and the child uses the manual alphabet. It is necessary to learn the manual alphabet and some basic signs in order to communicate with the deaf children. Frequently it is necessary to test visual acuity at three metres or less.

The most widely used test with the higher functioning multihandicapped children is the Sheridan Gardiner with various modifications. Considering the gross arm movements some of the children have, thus making pointing difficult, a board was successfully devised (Figure 1) with individual compartments for the letters. The number is often limited to three or four, instead of seven letters.

Some children, especially the rubella children, were unable to understand a distance vision test, so this was adapted for use at near. Two or three single letter books are placed on the table and the child is handed the letters to be matched, i.e.,



Figure 2: The use of wooden blocks for vision assessment.

they place the letter on top of the single letter book. The size of letters to be matched is then reduced giving a measure of visual acuity for near. This is utilizing a skill of matching objects or pictures that the children learn.

Pigassou single pictures have proven to be useful either by a verbal response or by matching. A number of the children have either no speech or speech problems and are difficult to understand, so an interpreter is needed, the teacher. Osterrberg's pictures were used originally, however the drawings were too abstract for these children and items such as an aeroplane were beyond their experience. With the Pigassou pictures, the boy, flower and car are the most successful. The tree and house are not easily recognizable to these children.

Tests such as the Catford Drum, which require the child to fixate for longer than a few seconds, have proven to be almost impossible at North Rocks. Most of the children seem to have a real

aversion to fixing on anything but lights, and there is also the factor of nystagmus, often quite marked. Also with the deaf, aphakic, multi-handicapped child it is difficult, even impossible to explain with their limited vocabulary and intelligence, "watch the spot".

If none of the above methods of testing visual acuity have been successful, more unorthodox methods have to be tried. These are for the children with no speech, poor co-operation, poor understanding and minimal attention spans. Part of the academic programme for these children involves teaching such skills as picking up and releasing objects. This skill can be adapted to act as a vision test. Using a set of wooden blocks ranging from 5 cm to 1 cm, the child is requested to pick up the block (Figure 2). Some can transfer them into a container, others hand them to the teacher, throw them or mouth them. The size and position of the block is noted and also accuracy in selecting the block. Large blocks with

an high contrast, e.g. blue on white, are used first then both size and contrast are reduced. The final block is 1 cm white on white.

Even the blocks have proven to be inadequate for some children. They do not understand or totally disregard the instructions and the blocks. It is obvious that these children can see, they are quite mobile and will locate any desired object easily; the question is how to measure their vision. Food is the next test used, ranging from smarties on a high contrast background to a low contrast background, to half a smartie, to a quarter. Sultanas on a brown table and 100s and 1000s are also used. The latter, however, present a problem in that they require good fine motor skills from the child and also they are not a familiar object and therefore are not interesting.

Reaction to occlusion is sometimes utilized. However, it is rarely needed because most of the children are noticeably monocular, either through buphthalmos, cataracts or corneal scarring.

Distance tests remains a problem. The following test originally used by Chris Ruby, orthoptist in the Child Development Unit at the Royal Blind Society, has been used with the children with more severe mental retardation, i.e. recognition of familiar people at various distances by the child running towards the person they know, and then having two people change jumpers and seeing at what distance the child recognizes this change.

There is still the problem of how to test the non-verbal, intellectually handicapped child confined to a wheelchair. There are still children at North Rocks who do not respond to any of the above mentioned tests. These are the children with poor fixation. These children need to be

taught how to respond to a vision test before any degree of accuracy can be attempted. Training begins by teaching the children to fix on faces and objects and extending this to smooth pursuit and saccadic movements. Sound is also used in that the child responds by turning his/her head in the direction of a sound and fixates at the same time. From here, the child is encouraged to reach for desired objects and once he/she is reaching fairly accurately, some form of visual acuity can be established. The aim with these children is to develop their visual functioning in order to give them some form of independence. Hopefully, they will be able to use their vision for orientation and mobility purposes and daily living skills, i.e. finding the door, picking up a cup, etc.

CONCLUSION

Every child at North Rocks provides his own particular challenge and innovative methods must be adopted. No child is classified as too difficult to test; if necessary he is seen regularly over an extended period, firstly to gain his confidence and then to teach him how to do a vision test.

Although working with these children can sometimes be frustrating, it is far outweighed by the obvious benefit the multihandicapped child gains from the combined health team approach.

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