Learning together

A creative approach to learning for children with multiple disabilities and a visual impairment

Mary Lee and Lindi MacWilliam

Second edition

RNIB supporting blind and partially sighted people

The Royal Blind School

Contents

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We would be pleased if you would visit our website at www.royalblind.org/school. We are keen to hear from those of you who are using these ideas and also the Canaan Barrie signs. Do you have ideas for further signs? Let us know!

The Royal Blind School is a day and residential special school, grant aided by the Scottish Government as a national resource.

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Preface

Children with visual impairment and multiple disabilities

The development and integration of the use of vision takes place at such an early stage in infancy and becomes so instinctive, that sighted people are generally unaware of its complexity and central role in daily life. The fundamental part it plays in our development should always be remembered. Vision has been characterised as the "driving force" in the early years of life. This is the period when key skills that govern our development are laid down. The use of vision within our early years governs the way, and often the rate, at which we acquire most of these skills.

Early intervention programmes always emphasise the importance of making children with visual impairment aware of their immediate physical and social environment. With little or no sight the infant may lose his drive, become introverted and increasingly lag behind in many developmental milestones. This is particularly so for the baby's social and emotional development, where early interaction can be severely disrupted when eye contact is restricted.

Leonardo da Vinci clearly illustrated in his maxim sapere vedere – "understand how to see" – that vision is more than just seeing, it is looking – using the eye and the brain together. When a young child sees a new object, he is immediately inquisitive. Does it make a sound if I shake it or drop it? Is it heavy to hold? Can I put it inside this box? Does it fit? Will it stand up? Does it move if I push it? What does it taste like? Is it satisfying to chew? He then sets about testing his hypotheses.

The development of a child with visual impairment whose progress has been additionally affected by a learning disability, is likely to be significantly delayed in this learning process. The greater the range of learning disability and other impairments the child is combating, the more cumulative will be the effect upon development. It is harder work for him to interpret what is happening in his immediate environment – he can only vaguely know who is in the room, what possibilities there are for play and what is happening in his surroundings.

Many of his early attempts to explore can be lost. If, for example, the child fails to make contact with an object by a millimetre, it is the same as missing by a mile. The object has "gone" when he tries to find it again, even though he has only missed it by a fraction. He may, in addition, contact objects and surfaces that hurt through heat, cold, sharpness and so on. A negative pattern of reinforcement may develop, whilst all the time his sighted peers are learning about their immediate world at a cumulative rate. Discouraged by his experiences from further development, he begins to experience frustration, fear and withdrawal from the world.

The statutory curricular and cultural contexts of an educational programme are inevitably always evolving and changing, but the systems for delivery of these programmes are often more stable and can cross boundaries imposed by culture and legislation. Learning Together is a case in point. Since the first edition was published in 2002, further development and a wide geographic spread of the use of the system, has taken place. Nearly three decades of work with children and young people is the foundation of this present edition, which aims to provide practical guidance on how to help children develop their skills, by ensuring consistency and opportunities for them to make and reinforce vital connections with their environment.

The world of the child with visual impairment and multiple disabilities is almost always a socially complex one. At the centre is the family, who have a myriad of support from educators and therapists of many professional hues. The challenge for the professionals is to work together as a team. Consistency is the key. Children, whatever their range of talents, are remarkably resilient. They seem to be able to cope with situations where there are differing levels of support, for example, during school holiday breaks. However, in situations where they are receiving differing signals, from a variety of people, they may become frustrated and confused.

Our role is to support these children and young adults in the development of their talents and skills and help them to gain greater self-confidence, a sense of exploration and an ability to communicate. In so doing, we as professionals need to be aware of the central importance of communicating between ourselves and of developing effective and consistent approaches. In all our developmental and educational programmes we need to work alongside parents to support children's development by setting appropriate learning conditions that offer our young learners the security and motivation they need to develop their learning.

Iain Prain, Vice Principal
Royal Blind School, Canaan Lane Campus

NB It is purely for the sake of clarity that the child is called "he" and the adult "she". Throughout the book we have real children in mind who may have a combination of disabilities including visual impairment, physical disability, hearing impairment, complex learning difficulties, autistic spectrum disorders and degenerative conditions, all of which combine and can affect the children's ability to access their world.

Introduction

"Communication is a dynamic process not a static situation so we should never 'arrive' at a definitive programme for a child." (Brown D in Wyman R, 1996)

This second edition of Learning Together reflects a growing recognition of and demand for an educational approach that is both creative and responsive to the needs and abilities of the individual child. It takes the child, rather than the curriculum as a starting point. It recognises that children operating at an early developmental level have a particular way of learning. We have found that both professionals and parents are in accord with this way of working and that the approach and the ideas set out in the book are increasingly being used in a wide variety of settings, both in this country and overseas. The book is complemented by our video/DVD "Movement, Gesture and Sign", which illustrates some of the ideas in action.

Our philosophy remains unchanged. Communication takes place all the time and is never separated from other key areas of learning. It underpins all areas of learning. The approach most suited to the needs of children with visual impairment and multiple disabilities must be interactive, child centred and adapted to take account of their visual impairment. Three basic principles underpin our work. It is:

- **Interactive** – Young children learn through interaction with other people and through active experimentation with objects. This learning style does not benefit from attempts to direct it towards specific goals. Indeed a young child cannot take instruction from others until he is aware of what he, himself, is capable of doing. Interaction, of course, implies that we must respond to whatever the child offers us, just as much as we expect him to respond to us.
- **Child centred** – We believe that in order to help children to make sense of the often confusing world around them, we must first attempt to enter their world and to see things from their point of view. In other words we must try to "make sense of their world". This immediately shifts the burden of responsibility on to the adult and we stress the importance of the adult role in observing, reflecting and responding to the activities of the child.
- **Adapted for visually impaired children** – Children with a visual impairment will have different ways of understanding their surroundings from their sighted peers. Our adaptations and our methods reflect this. The adaptations include ensuring that the whole environment – the physical surroundings, the people in that environment and the language they use – are always as accessible as possible from the children's point of view. We consider the significance of the multi-sensory experiences available to each child.

In order to promote active learning on the part of the child we present ideas which are essentially practical and based on our first hand experiences with children over the past twenty years. We have found that the interactive approach has always met with an enthusiastic response when we talk to other practitioners in the field. Gradually it is becoming the accepted way of working with developmentally young children.

Children want to learn. They have, from birth, an inbuilt need to progress and to develop. Our job is to ensure that the conditions are right to encourage this natural process for all our children.

We must maintain a holistic approach enabling the children to learn in the way that they need to. At the same time, we must provide challenges so that, whatever the children's developmental level they are encouraged to fulfil their own potential.

We need to put aside our preconceived notions of what we "ought" to be doing as educators, look at the child in front of us, and allow him to lead us towards his next steps.

Mary Lee
Lindi MacWilliam

June 2008

Chapter 1

Theoretical background to the programme

"Blind infants need caregivers who can act like visual interpreters of the world... are capable of establishing a positive emotional bond... are able to read the 'sign language' of a blind baby." (Preisler 1995)

Mother-child interaction

In order to understand the process of learning we must consider how vision and communication develop. Many of the children we are concerned with function at a very early developmental level, although chronologically they may be much older. Others, although more advanced, may have failed to pick up certain specific, but crucial communication skills. With each individual, we take the pattern of child development as our guide. Research since the mid 1970s has focused on the "dynamic process of social interaction" taking place between parent and child that begins at birth. Theorists suggest that children are born with a sensitivity to reciprocal human interaction. That is, they possess an inborn, natural ability to communicate. Nonetheless, from the moment of birth they are dependent on the instinctive ability of significant adults to interpret and respond to their early communicative behaviour.

A young baby actively strives to make social contact and as a result of the consistent responses of others to his behaviour, he learns that his smiles, gestures, movements and vocalisations produce particular effects. Complex patterns of communicative behaviour are formed between parent and baby. Research has shown that mothers are highly adaptive in their own behaviour and respond in a way which is related to the level of understanding of the baby. The mother constantly supports and facilitates her child's attempts to communicate, encouraging him to continue and to expand his activities. She takes on the

subordinate role and responds to whatever the child may offer, feeding it back in the form of a non-verbal conversation.

Rhythm is all important in these exchanges and mother and baby can synchronise their movements with each other with amazing precision. In time the baby is able to anticipate that others will respond to his overtures in certain specific ways. This leads on to the ability to initiate social interactions and bring the "conversation" to a close. Gradually, as the baby develops his skills, the interactions become reciprocal in nature and mother and baby become more equal partners in the communicative process. (Burns 1986, Trevarthen 1979) These interactive skills are basic to all communication.

A major part of any verbal exchange is conveyed through non-verbal channels. When people have a conversation their gestures coordinate with the same precision that can be seen between mother and baby. This coordination of movements is fundamental to further understanding within the exchange. Indeed, the better the synchronisation between two people the more successful is the communication.

Trevarthen (1997) speaks of the "innate musicality" of mother-infant behaviour and points out that babies leave phrase length pauses in their interactions, without any support from the adult. This suggests an inborn awareness of others.

Recent studies have shown that even children with the most complex learning difficulties do not lose their instinctive ability to communicate. Some use their abilities with great skill and build rich patterns of communication with adults. For others, however, the reciprocal interaction has broken down because of the immense difficulties the disability has caused. These children will need skilled intervention to enable them to develop and enrich their interpersonal skills and communicative ability. (Burford 1989)

Once a sighted child has developed an awareness of his own role in interaction, emphasis shifts from the early, fairly exclusive, mutual attention between parent and baby, to an interest in objects. These begin to become part of the communication routine.
The process becomes more of a three-way interaction between child, adult and object. The infant may use an object by "showing" it to gain the adult's attention or, alternatively, he may use the adult to obtain an object, by conveying his intention through gesture or eye pointing (looking with a fixed gaze at an object to communicate interest in it). This is known as the stage of "joint reference" or "shared attention".
As his skills diversify further, the child begins to use an ever-widening range of intentions or functions within his daily routine.

It is out of early interaction that the child develops the skills required to be able to use language (spoken or signed). What the child does with these skills is embodied in the functions or use of language. These give structure to what the child is expressing; he may be keeping in contact, making a request, demanding, rejecting, expressing pleasure, giving vent to feelings or making conversation. If a child never develops speech or formal sign, he may still use a variety of the functions of language at a basic level through movement or gesture.

Implications of severe visual impairment on the development of communication

By considering the implication of a visual impairment at different stages in children's early development, we begin to understand some of the difficulties they will face when it comes to language acquisition. Children who have significant additional physical and cognitive disabilities, are going to be disadvantaged, as their various disabilities interact and influence their ability to understand.

The earliest interactions that take place between a mother and her baby rely almost exclusively on vision, and centre on mutual regard, and the infant's fixation on the mother's face. This has a powerful effect on the mother and has been likened to the baby "wooing the mother with his eyes". This early shared interaction is of great importance in establishing emotional bonding, and mothers have described it as eliciting their first real feelings of love. For a mother whose baby does not give eye contact the effect can be profound, especially as she may already be struggling with feelings of hurt, anxiety and guilt at having given birth to a child who is disabled. (Fraiberg 1977)

Fraiberg observed that babies who are blind do not respond socially with a smile as frequently or as early as sighted babies. She attributed this to the fact that it is the visual stimulus of the human face that evokes an automatic smile from a sighted child with a high degree of regularity. Smiling, like eye contact, is vital to the establishment of successful adult-child interaction.

From the start, parents and their infants with visual impairment are likely to encounter difficulties, but research has demonstrated how skilled parents are at finding ways round these. Preisler (1988) talks of the rich repertoire of a blind baby's facial expression and body movements that are effective in eliciting communicative behaviour from parents. She noted how skilled some parents become in picking up these tiny signals such as raising eyebrows or opening the mouth, and in detecting small but meaningful changes of position. They dramatise these to make sure the infants realise that their movements have been noticed. She also found that parents used sound a great deal to sustain interactions, by for example laughing to their baby's smile, making their response "visible". As well as using sound, mothers often feel they need to use more physical contact to compensate for the child's visual loss. Fraiberg talks about mothers using bouncing, tickling and nuzzling games as dependable strategies for eliciting a smile. There is no doubt that, despite the mother's skill, blind infants are likely to take longer to understand their part in the interactive process, and that it may be harder for their mothers to interpret their signals and respond meaningfully. In the absence of a visual focus these kinds of more explicit strategies will help parent and child to attain mutual understanding.

"Parents and their infants are likely to encounter difficulties, but research has demonstrated how skilled parents are at finding ways round these"

When sighted children begin to be stimulated by objects and sounds in the environment, they will develop ways of communicating this interest by visual and gestural means, notably through pointing. This important stage of "joint reference" can be difficult for blind infants to master. Without vision they may remain unaware of the exciting possibilities around them, and the conventional referential gestures do not develop (Urwin 1983). Rowland (1984) has suggested that children with visual impairment do not easily complete what she terms the "communicative circuit".

One of the reasons for this concerns the difficulty they have in recognising reciprocity, and the children's tendency to rely on significant adults as both initiator and interpreter, rather than offering their own initiations within an interaction. Preisler observed very few instances of give and take play routines within interactions between blind babies and their caregivers, an observation reinforced by Rowland's studies.

Rowland drew attention to the importance of silence within these interactions. She noted that mothers in her study provided almost constant verbal stimulation, probably in an attempt to provoke a response from their child. However, the result was an unnatural conversational pattern, and meant that the infants were not given time to process auditory information and then give a response. By filling in natural and necessary pauses, the mother was in danger of adding to her child's passivity simply by talking too much.

Many infants with visual impairment may also have significant delay in their locomotor skills. Sighted children can observe the objects in their environment, even at a distance, and quickly learn to move towards them. An infant with visual impairment is only aware of objects close to him and will rely on having playthings brought to him. When these are taken away they "cease to exist". This means that it takes longer to establish the concept of object permanence and also the understanding of where self ends and the object begins. (Rowland 1983, 1984) Some babies, therefore, spend more time in interactions with people and their interest in objects can be delayed.

"An infant with visual impairment is only aware of objects close to him and will rely on having playthings brought to him"

Once these babies do show an interest in objects, they may have their own ways of signalling this. These signals may be difficult to detect, as they are very different from those of a sighted child. Instead of turning or pointing to something they tend to "still", showing interest by concentration on a sound, or they may perhaps slightly incline their bodies towards the object or sound.

Fraiberg has referred to "hand language" describing how she and her staff became skilled at watching and recognising tiny hand movements that denoted interest, anticipation and request. Adelson (1983) refers to the seemingly irrational hand waving gesture of an eleven-month-old blind child, and how it subsequently became apparent that this was a request gesture, which had developed from a movement the child used to make when searching for lost bottles or pacifiers in her cot.

Studies carried out into the language development of children who are blind, with no other disabilities, have come to broadly the same conclusion. They find that, although there are significant obstacles that both infant and caregiver have to overcome, the absence of vision does not hinder the eventual acquisition of good communication and language ability. (Preisler 1988, Urwin 1983)

This successful acquisition is significantly dependent on the skill and perceptive awareness of the mother or primary caregiver and the child's latent abilities. Parents have a vital role in recognising and interpreting the intention behind their infant's behaviour, and in being able to respond and adapt their techniques appropriately.

The theory of movement practice

Early last century, Rudolf Laban developed a form of movement analysis which has been influential with practitioners ever since. "Laban movement" has been used in theatre, dance, education and industry. In movement interaction we use it in a highly simplified form to give us a structure to develop the child's movement ideas and movement potential.

"The absence of vision does not hinder the eventual acquisition of good communication and language ability"

Laban describes movement in terms of "Effort" qualities. The quality of Effort is the way in which energy is released. The components which make up these Effort qualities are Weight, Space, Time and Flow. How we move is the result of our inner attitude, conscious or unconscious, towards all these qualities. (Laban 1988, Newlove 1993)

- **Weight** – strong, firm and heavy or light and fine (these will depend on how much energy is put into the action).
- **Space** – flexible or direct (pathway using space freely or in a straight line).
- **Time** – sudden and quick or sustained and slow (short, sharp action or continuous action).
- **Flow** – free or bound (cannot be stopped/controlled easily or can be controlled/stopped at will).

Some children with physical disabilities find it very difficult to express their intentions because they lack control over their movements. By observing their movements in terms of Weight, Space, Time and Flow we can detect intention behind the movement and the difficulties the child encounters in trying to express this. Once we have built up a picture over time of the child's movements, we become more in tune with what the child is trying to express.

Rhythm and timing

Rhythm and timing form an important part of early communication. The timing of intervention is as important, if not more so, than the form of it. "Mirroring" or imitation is an essential part of the technique described in this text. Mirroring suggests a visual activity, but in a communicative context it means more than just following a movement in space. It takes cognisance of many other factors, including touch, rhythm, speed, spatial form and intensity of feeling. Games played by parents and infants, such as "peek-a-boo", rely on the skilful use of timing.

Theories of interactive education owe much to the analysis of both movement and music. Hauge and Hallan Tønsberg (1996) urge fellow music therapists to look not so much at musical content, expression and interpretation when working with children at an early developmental level, but rather to focus on "timing mechanisms", which form the underlying structure of social interaction. They stress the term "improvisation" in its musical sense, and suggest that it accurately describes what is happening in a successful interaction where both partners co-regulate events.

Human beings have a biological time base which has been found to be cross-cultural. Many nursery rhymes from around the world are based on these biological rhythm patterns. The use of music and rhythm appears to serve basic emotional needs in children which are reflected in these early songs.

Burford (1988), in her research with children with complex disabilities, found that the movements or "action cycles" (rhythmic groups of repetitive movements eg wiggling fingers, hand or tongue, tapping, rocking, clapping etc) used in non-verbal interactive exchanges, fell into five categories of rate. The timing of each category is constant and measured in milliseconds.

- **Rapid actions** – used to get communication going, to stimulate and to keep the action going. Also used to reassure (ie patting child's back). Children use it to express enjoyment.
- **Moderated** – still boisterous, as above, but not as intense, it keeps the level of excitement moderate and controlled.
- **Playful** – lots of action, rocking etc (like a dance between two participants).
- **Slowed** – stroking. This may be stimulating when the child is tense or anxious. Used to make contact with a child who is timid about social contact.
- **Soothing** – used to express care and warmth, to relax and reassure.

The same actions will appear in one or more categories eg stroking can appear in rapid, moderated, slow and soothing.

"The child was not looking at his caregiver but they managed to achieve a remarkable closeness in their rates, ensuring that they unerringly made contact on each pat... This was a quiet withdrawn child who rarely looked at others and appeared not to be aware of their action or presence, yet he was capable of initiating and maintaining his participation in a mutual communicative act...

One child... responded to his caregiver's waving a squeaky toy as if he was dancing to music, moving his limbs and body in a side to side motion as he lay on his back. His movements looked awkward and jerky, yet the cycles of action revealed very regular rates within the Playful category." (Burford, 1989)

Burford found that the "rates" at which each communicative pair were interacting, were taking place during fractions of a second and showed a sensitivity in caregivers and children to each other's actions which was based on timing.

Chapter 2

Movement interaction

"If the interaction has the highest possible quality, then this quality will of itself create the possibility for subsequent interaction to become more complex and sophisticated... the interaction acts as the catalyst [for] the development of the child."
(Nafstad and Rodbroe 1999)

The starting point for the movement interaction approach is always the child's own movement. Through individual movement sessions the adult focuses on the communicative aspect of the child's personal movement patterns. The aim is not to precisely replicate mother-infant behaviour. Instead, it is this same style and method of communication that is developed and which can provide emotional satisfaction for the child.

Movement sessions

The aim of an interactive movement session is to approach the child on his own terms, focusing on what he can do, rather than on what we want him to do, or perhaps what we feel he should be doing. It is necessary to find a quiet place where adult and child can concentrate solely on each other throughout the session. The adult may then engage the child in simple and natural movement play. The aim is to form a bond of mutual trust from which the child can develop an understanding of himself as an individual and of his role as an active participant within the session.

Early communication stages that a child experiences are:

- **Awareness and response** – basic awareness of and response to what is happening within the interaction.
- **Anticipation** – the feeling of excitement engendered when the child is able to predict what is about to happen.

- **Intentionality** – an action made by the child to produce a specific reaction from another person.
- **Reciprocity** – sequences of imitation and turn-taking; the basis of all shared communication.

It is important to begin a movement session with an "open mind". In the sessions, the adult responds to whatever movements the child may make, observing movement qualities and reflecting them back to the child by imitation. This shows the child that the adult has some understanding of what he is doing. The adult's response is intuitive and quite natural but informed by knowledge of the child's likely sequence of development.

In the beginning the child will respond to what is happening in the here and now, but he begins to learn that through his actions, he influences another person and that he can initiate a game or interaction. For example, the child taps his face – his partner does it too – gradually he becomes aware that when he does it, something happens. He does it again, pauses, full of anticipation to see if he was right – will his partner do it again? Sure enough, she does.

When the child begins deliberately to make movements, gestures or sounds in order to gain the adult's response, he is able to initiate interactions or "games". Gradually the child may begin to develop specific signals that have particular meanings for himself and his partner. Put together these can make up a rich vocabulary of shared interactions. These are the activities and pleasurable experiences that form the bond or personal relationship between adult and child.

As adult and child get to know each other the communication may become more reciprocal with adult and child responding to each other more equally. This will often take the form of a "conversation" using vocalisations or movement, for example, a gentle rocking back and forth, with each initiating the activity in turn.

It is important to keep these early communication stages in mind. However, it is the process of participating in a shared activity that is important. Rather than working with planned goals in mind, our open-ended responses within the sessions will, over time, naturally further the child's development.

Some principles to keep in mind

Tune in

Our aim is to "tune in" to the child. The session will have no preordained outcome. The achievement will be the mutual enjoyment of each other's company. The session, however, is not a "free for all". There is a structure to the session that is imposed by the adult on herself. First of all, we arm ourselves with knowledge of children's early communicative development. This is our structure, but keeping this to the back of our minds, we simply react to what the child is offering us at that moment, building it into a communicative exchange.

Watch

Watching involves acute observational skills that are developed through experience. Many of the signals given by the child with visual impairment will be quite unconventional. We need to read his signals and interpret what the child is trying to convey. These signals may often be difficult to pick up. The child's self-expression is more "inward" than "outward". The adult has to show him that he is understood and "draw him out" into a social world.

Do not force a successful session to continue if the child has had enough. Remember the child's right to say "no". To say "no" is just as successful an achievement as to say "yes" in terms of communication.

"Do not force a successful session to continue if the child has had enough. Remember the child's right to say 'no' "

Wait

Give the child plenty of time. He requires longer to respond than would feel natural to us in a spoken conversation. Do not be tempted too early to "make things happen". This can lead to the adult dominating the activities. The child, given the time he needs, gradually gains in confidence and begins to realise that he can have an influence on what happens. Bit by bit, adult and child begin to understand each other and the movement interaction becomes like a shared conversation.

Follow

It is up to us to show the child that he can initiate an action and that it will be responded to. To do this, we have to make ourselves almost like a "sponge". We have to respond to the child, reflecting back what he is doing, without, at least in the early stages, imposing our own personalities on what is happening. This requires a lot of self-awareness. In order to achieve it, we need to emphasise in our own minds the need to keep our "selves" out of the interaction until the child is confident of his own ability to take control.

Responses should be made in movement and sound. Too much chat can lead to the adult dominating the situation. She may be working with a child who cannot use speech. By using what the child himself uses, adult and child are equal.

Technique and skills required

Mirroring

The first indication that a child is aware of, or recognises someone else, may take the form of stilling, attentiveness, smiling, increased activity or vocalisation. This can be encouraged by imitation or mirroring. In so doing, we assign meaning to the child's behaviour and adult and child exchange expressions and feelings of mutual enjoyment.

For example:

- The adult imitates the child's breathing, exaggerating the sound, or blowing gently on his face as she does this.
- The adult imitates the child's vocalisations or mouth sounds.
- The child's hand is resting on or in the adult's. The adult feeds back to the child his tiny movements.

Imitating a movement is not only a matter of following the form of the movement, ie what it looks like. It is also reflecting back the quality of the child's movements, taking account of whether they are heavy or light, controlled or free. This can be done by matching the adult's movements to the child's through visual imitation (if the child can see this) or more often, through direct physical contact, if this is acceptable to the child. Mirroring may be done by reflecting back the rhythm and tempo of the movement through touch and vocalisation. Children without sight will thus be made aware that it is their actions that are being followed.

The adult may use her voice, adding sounds to the child's movements – if he likes the sounds he will be motivated to try again. She must be attentive and aware of the child's facial expressions and vocalisations. If these, for example, express surprise or pleasure they can be reflected back to him through voice, so he knows that he has been understood. The adult must stay responsive to whatever the child is doing. If he is enjoying himself, he will extend his own movements and sounds and try out different ideas for himself.

- The child pushes back, and the adult develops this into a rock backwards, adding a vocalisation as she does so. The child picks up on this and joins in the vocalisation while pushing back to rock again.

Rhythm and timing

Rhythm is an important element in communication. The adult may consciously use timing and repetition as a means of attunement. For some children with a visual impairment, the use of rhythm and timing within an interaction can be particularly motivating. It can offer even the child with complex disabilities the opportunity to direct and control within an interaction. The adult should pick up on the pace of the child's movements and on the rhythm of each action. The speed and flow of a child's movements will be a good indicator as to mood and will convey much of the emotional content of the interaction. It can be done by patting, tapping, clapping, vocalisation or through the action of the movement itself eg lifting arms up and down.

- The child and adult clap together, with the child's hands on top. The adult pauses, holding her arms outward. The child pushes the adult's hands back with some effort. The adult varies her speed to match the effort of the child. The game gets faster.
- The child is standing in front of the kneeling adult, the adult supporting with her hands under the child's hands. The child starts to rock slightly from side to side, and the adult, feeling the pressure on her hands, joins in. The child changes the speed and length of the rock, and at the end of one long slow rock, pauses before initiating a short, fast flurry of rocking activity.
- The child is lying on his back on the floor. The adult's hand is resting gently in his hand. The child throws the adult's hand up in the air. She reacts to the force of his throw and brings her hand back down with a heavy thud. The child laughs and begins to experiment with heavy and light throws, which in turn alter the rhythm and timing of the action.

Building anticipation

The build up of dramatic tension is fun and can motivate the child to attend and concentrate. Create a situation whereby the child is full of anticipation, waiting for the next move. Build this up to a climax, perhaps through vocalisation or exaggeration of movement or facial expression, till finally – action!

- The child lifts his arms up in the air. The adult moves with him and slightly exaggerates the extent of the lift, adding a rising vocalisation and pausing at the top. The child giggles and pulls the adult's hands down.

Turn-taking

At the outset, the adult moves in unison with the child in order for him to become aware of what his partner is doing. Turn-taking, which involves action then reaction, follows on from this awareness. Through mirroring activities, the adult creates a turn-taking situation and the

experience of communicating at a fundamental level – the feeling of a flow of "conversation". Turn-taking takes many forms involving movement, sounds and vocalisation. Rhythm and timing are clearly important skills for the adult to use during these activities.

- The child kicks his feet on the ground. The adult lying beside the child kicks her own feet. The child kicks again and finds himself answered again. This builds into a happy, noisy non-verbal conversation with changes in volume, speed and rhythm.

Pauses

Pauses play an important part in early non-verbal conversations. These follow a pattern involving a burst of interactive activity followed by a pause, until the activity is repeated again. Within our movement interaction sessions this behaviour is evident in the turn-taking routines that are set up between the child and his adult partner. Typically a burst of turn-taking activity builds to a kind of climax; there is a pause while the child has time to reflect on what has happened, before again initiating another burst of activity. The aware adult allows pauses to occur, never pushing the activity along too soon for the child.

Pauses within interactions are vital if we are to develop the child's understanding of communication and encourage active participation. The pause is filled with expectancy which sends the message – "your turn". It is essential to wait long enough for the response. If not, then the child will not realise his own role within the conversation.

- Child and adult sit together with the child leaning against the adult. The pair rock together. The adult pauses midway and waits. The child waits too, clearly wondering what happens next. When nothing appears to happen, he tries to continue the rocking action with a push of his shoulder, as if to say, "I like this, let's go on." The adult continues and he smiles.

The child's communicative strategies can be developed by leaving gradually lengthening pauses, so that the child has to be much clearer in his intentions. This should be done with care. The child whose self-awareness is only just emerging will require immediate feedback from his actions. A child more confident in his abilities to express himself can be gently encouraged to be more precise. It is very important to be aware of the communication level at which the child is working so that the pause strategies are right for that individual.

Positioning

How the adult positions herself relative to the child will be based on the way that best suits him, taking into account his visual and emotional needs and his physical capabilities. As a general rule she should remain close to the child, taking care her back is supported when working on the floor.

Sometimes within a session, it is advantageous for the adult to change her position in relation to the child eg moving from beside to in front. This results in her focusing differently on the child and enables the child to expand the repertoire of activities that he is able to initiate. For example, touching or holding a foot or leg, can encourage the child to make a new movement with this part of his body. This must be done with care, always ensuring first that the change of position is acceptable to the child.

When working with children who tend to go into spasm or extension, it will be necessary to seek advice from a physiotherapist about positions whereby this can be lessened or inhibited.

Some suggestions for different positions:

- The child facing the adult, either sitting on her lap or sitting supported on the floor (taking care with children who have physical disabilities to check with the relevant therapists).

This is a good position for close face-to-face interactions, blowing, vocalising, mouth movements, eye contact, and movement activities.

- The child seated on the adult's lap, or in front on the floor, with his back against the adult.

For a child who tends to go into extension, this can be a good position, as legs are kept well flexed, and the adult's body acts as a stabilising support. It is a good position for movement activities, as the adult can pick up the child's tiny responses through her body, and for following hand and arm movements.

- The child lying on the floor on his back, with head supported, if necessary.

This can be a good position for all kinds of close face-to-face interactions. It is a useful position for reacting to the child's leg movements and for activities such as side-to-side rolling. This is a position that can be used with older or heavier children.

- Older children.

As children grow older it is less appropriate to have close physical contact. However, by using wedges, physiotherapy balls or physiotherapy rolls and by carefully positioning the young person, it is possible to interact and turn-take naturally and to provide varied movement experiences.

Developing intentional movements

Intentionality is the knowledge that a movement or action elicits a reaction. Intentionality develops naturally from the activities previously described. The child gradually learns that he can be in charge of situations and make things happen. Conversations now begin to be about the activities and not simply an exchange of feelings.

At first, the adult may be interpreting the child's unintentional movement and taking it as a request for something she thinks he would like, such as an arm movement for a lift or a bounce. It is important that the child's "requesting" movement is made part of the activity, for example, if a child raises his hand for a rocking game, the adult should continue to raise his arm as she rocks him. Vocalisations and voiced sounds can be used in the same way, with the adult interpreting these as requests. The adult imitates the sound the child makes while rocking him. Through the experience of having his actions interpreted in this way, the child begins to make these movements and sounds purposefully.

The child's initiations may at first be extremely small movements such as a tensing of the muscles, apparent only to the alert adult who is in close contact. However, the child can be motivated to make more definite body movements, through his enjoyment of the activities.

Another form of intentionality emerges when the child takes the adult's hand and puts it back to the same place to request a repeat of a favoured activity. This sometimes comes before more deliberate gestures or "signs" which symbolise the activity requested.

Developing signals or signs

Gradually adult and child will begin to build up a repertoire of known and remembered activities that the child particularly enjoys. As his awareness grows, in particular his ability to anticipate and to make his intentions known, the child will begin to develop gestures or body movements to ask for what he wants. This is quite a big step as it is the beginning of understanding that these are symbolic and may "stand for" particular activities.

Within a movement session, once the child feels that he is in charge and has begun to initiate requests, we can start to look for specific signs or signals for particular activities. It is important that we do not rush into this stage. Some children may only have a limited range of movement to call upon to make their requests. In this case it is possible that the child may use the same gesture to request a number of different activities. The adult, depending on the context in which the request is being made and the position of the child, can understand which activity is being requested. At the same time, the adult should, in order to extend the child's vocabulary of signs and signals, keep on building up his movement repertoire as far as she can within his physical capabilities.

At this stage it is important to be careful to keep the sessions interactive. There are various pitfalls that are only too easily encountered. When the child uses a sign/gesture to make a request it is very easy to say "Good boy!" This immediately puts the adult in a dominant position and is not what would happen in ordinary conversation. If someone asks you for something you would not normally praise him for asking, before responding to his request.

Another common pitfall occurs when the adult says "Would you like a swing? Come on show me your sign". In this case the adult is not giving the child a choice, but telling the child what to do!

Developing reciprocity

Reciprocity involves the ability, on the part of the child, to pick up on and imitate the actions of the adult. It involves an awareness of the two-way nature of communication and an ability to understand another's point of view. Once the child has gained an awareness of being able to make things happen, the adult can begin to put more of "herself" into the activity. Within a repetitive sequence, familiar to the child, the adult can add changes of rhythm and speed or make suggestions of her own. Suggestions will invariably be based on the adult's knowledge of the child's preferences.

"Within a movement session, once the child feels that he is in charge and has begun to initiate requests, we can start to look for specific signs or signals for particular activities. It is important that we do not rush into this stage"

Sessions do not have to consist of non-stop activity. The intensity of the communication will come and go. The skill of the adult is to avoid pushing on from one activity to another, but rather to remain available and to quietly signal this. The adult may rest a hand close to the child's dominant hand so that he knows his partner is still there. This gives the child the opportunity to take the adult's hand to signal that he wants to continue.
Many children may not develop true reciprocity, however, they can participate in rich communication with their partners through a wide variety of interactive experiences.

Awareness of adult approach

One of the most important skills required in movement sessions is the ability to observe the child with an open mind. The adult must be able to "read" the child's gestures and react in a similar fashion without, in the initial stages, imposing her own movement preferences on the interaction. That is, the adult must become aware of her own movement behaviour and how this may affect the child. We all have our own preferred ways of moving which have been developed over years, depending on our characters and our life experiences. Mostly we are unaware of them and would be surprised if anyone brought them to our attention. The intuitive communication skills that come so readily to us all in our everyday interactions, without even thinking, must be brought into our conscious awareness.

"One of the most important skills required in movement sessions is the ability to observe the child with an open mind"

These are some ideas to keep in mind when working with a child. By knowing yourself you begin to know the child.

Proximity
What effect does your presence have on the child? Alter the distance between yourself and the child and observe any changes in the child's behaviour. Your near presence can encourage reaching movements from the child. Be aware of the child's visual field and place yourself in the optimum position for the child to use any residual vision.

Voice
How are you using your voice to speak to the child? Do you use much inflexion? If the child is totally blind, observing the way he reacts when he hears your voice can tell you about his relationship with you.

Touch
Observe your own actions – is your touch heavy or light? Have you altered your customary approach in response to a perceived need in the child? Does the child recognise your touch?

Approach
Think about your approach in terms of space and time:

- Are you moving in a direct or in a more circumspect manner? Are you moving towards the child from behind/the side/in front or from above/below/the same level? Are you aware of the child's visual field?
- Do you approach quickly or slowly? Direct and fast can be more threatening than indirect and slow for some children or vice versa.

Partially support body weight
For example, child leaning against adult. Observe your own movements. Are they adapted to the movements of the child?

Wholly support weight
Have you established trust? Children should not be fully supported until trust has been established. Be sensitive to passive acceptance on the part of the child and try to guard against it. (Always follow manual handling guidelines.)

Case study: Sadia

Sadia is a three year old with visual impairment. She has quadriplegic cerebral palsy and severely limited intentional movement. She also has a hearing impairment. She enjoys close physical contact, but remains tactile defensive, not liking to touch with her hands.

The session starts with Sadia seated sideways on the adult's lap. Gradually the adult picks up on Sadia's breathing, imitating it in an exaggerated way close to her ear. Sadia becomes aware of this, and her breathing gets louder, until she is vocalising, and a turn-taking exchange with the adult ensues. After a pause, Sadia makes a small backward movement with her head, and the adult rocks her back into the position she knows Sadia enjoys. There is another longish pause, then Sadia vocalises. The adult imitates the vocalisation, gently swinging Sadia from side to side, thus interpreting the vocalisation as having a definite message. Sadia enjoys this, and vocalises again this time with a small head movement. This sequence is repeated several times.

The adult changes position, so Sadia is facing her. Again Sadia makes a small but definite backward movement with her head, and the adult moves so that Sadia can rock back. She is now lying back over the adult's legs. The adult very sensitively slips her fingers under Sadia's fingers, so she is able to follow her arm movements. Sadia lifts her arm, and the adult follows. When the adult detects a slight downward pressure on her hand, she allows both their hands to bang down on the floor close to Sadia's head. Sadia smiles at the noise, and repeats the movement again. This turns into a sustained routine, with Sadia changing the speed and strength of the bangs, by altering the amount of pressure she exerts and the timing of her arm movements. Sadia is pleased and excited, appearing to know that she is initiating and controlling, and she is smiling broadly.

Particular areas of difficulty

Ideas and suggestions

There are some children who can be particularly hard to reach, and for whom interaction with another person seems to represent a threat or holds little intrinsic reward. They actively reject any physical contact apart from very basic lifting and handling, and this rejection can take various forms. Some merely reject by turning or moving away, and others can become aggressive or very upset at any intrusion into their space and privacy. These children can at first appear more difficult to work with, but the authors have never worked with a child who has not responded to and enjoyed movement interaction sessions.

Children who do not want to interact

The key points are:

- patience
- flexibility
- start with the child's interests
- put no pressure on the child
- establish trust
- allow time.

At first the session may have to consist of the adult and child just being in the room together. When physical contact is attempted it should be very gentle and non-intrusive, and at all times the child's reactions should be very carefully monitored.

The following suggestions have been found to work well in different situations, and with different children:

- Have the child in a partially enclosed area, for example, a large open-ended cardboard box. Use sound and rhythm, such as tapping and scratching on the surface of the box, to attract the child's attention. Once the child starts responding from the security of his box, he may gradually become willing to accept more direct physical contact.
- The adult can lie beside the child, and make her presence felt through gently tapping, clapping or moving. When the child shows interest, by for example turning to the adult, a further gentle approach can be made. In one case a child slightly extended her fingers, and allowed the adult to approach her hand and eventually to make contact with it.
- The child is in his wheelchair or buggy as security. The adult can attempt to interact in front of the child, for example, gently moving the chair to encourage a response from the child.
- Objects may present less of a threat to a child, and can be used in different ways both to attract and maintain the child's interest, such as moving an attractive object across his line of vision, allowing the child to touch it if he wants to, or tapping a drum gently, close to him.
- Using rhythm and timing can be excellent ways of interesting and motivating a child. Touch can be kept to a minimum and the child is fully in control. This can be used in connection with rhymes and songs, where children can have control over the speed at which favourite songs are performed.

It is worth stressing that children who are noticeably aggressive in many circumstances, rarely show aggression within these sessions since they have the experience of being in control in an appropriate way. This is evidence that a mutual bond of trust has been established between adult and child.

Children with "stereotypical" movements

Stereotypical movement can be a feature of the play and behaviour of many children who have built up a pattern of repetitive movements and ways of using objects that do not vary or change, and appear to have little creative or communicative function. In many cases this appears to be used for the purpose of blocking out interactions, and these children can become isolated and seem to be "in their own world". It is worth looking carefully at their movements and ways of behaving, as although they are often described as "non-communicative", they will have developed for a purpose, and can give clues to a child's emotional state.

Movement interaction sessions offer very good opportunities in which to use these movements to make contact with the child.

The key principles are the same as for children who do not want to interact (see above).

Where possible treat the child's stereotypical movements as meaningful, and demonstrate this to the child within an interaction. Try to turn these movements into a movement game that the child enjoys.

Some examples:

Children who constantly turn their head or rock their body

- if the child is in a chair, turn the chair in time to his head turns
- lightly tap the child's shoulder every time he rocks to one particular side
- ring a bell or tap a drum at the side of the child at each twist of the body
- lightly place your head against the child's to mirror his movements.

Children who bang, shake or tap repetitively

- tap or bang against the same surface or object as the child
- join in with the child, tapping another object in an exaggerated way so he is aware of this
- tap against the child's body in the same rhythm
- keep the child's basic rhythm, but add to it slightly.

Children who keep hold of an object

- use a similar object (or another favourite one), and play close in front of the child to attract attention. Try to turn this into a give-and-take game, exchanging objects without forcing.

The child is likely to be using movement and objects as blocking strategies. In this case sessions are best carried out in a room with as little distraction as possible.

Children who are constantly on the move and avoid interaction

- follow the child, imitating the rhythm of his footsteps or other movements in an exaggerated way to get awareness and attention
- use a kind of "peek-a-boo" technique, going round the child to create surprise in a fun way.

Older children

The whole question of the appropriateness of movement interaction sessions that depend on close physical contact has to be considered for young people approaching adulthood. Teenagers and young adults although physically well developed may often still be developmentally very young. They are likely to be emotionally dependent, and many still need the security and comfort of being close to another person. If they are denied this contact, then we may be denying them their most important means of communication. We must therefore work out a carefully planned, age appropriate way to provide sessions for these young people.

By keeping touch within age appropriate boundaries and using other strategies to let the young person know that he is important and special, we can develop his interactive skills. Some of these young people may have developed challenging behaviour, and these sessions can offer a way of releasing tension, and allow them to experience the benefits of positive interaction. It is also worth bearing in mind that for the more able, many leisure, sports and creative activities, particularly those based on dance and movement, involve physical contact that is socially acceptable.

The following ideas and suggestions may prove useful in situations where it is felt appropriate to continue the one-to-one sessions with older children and young adults who are developmentally young.

Activities and routines based on movement activities

- seated on the floor, hands held rocking at different speeds and in different directions
- seated side by side, rocking as above
- partners seated back to back rocking as above
- back to back, taking turns to push and move the other across the room.

Using rhythm and timing, in turn-taking routines

- turn-taking routines involving clapping, stamping, footsteps round the room
- using drums and other sound making instruments
- reflecting vocalisations of adult and young person.

Using objects

- large objects eg physiotherapy balls and wedges can provide the basis of movement activities
- smaller objects eg a vibrotube, can be the basis of turn-taking play. Aim to keep this interactive rather than directive
- hoops and ropes can provide activities that do not involve touch, but are co-operative and interactive.

Case study: Laura

Laura joined the nursery as an introverted little girl, with poor interactive skills, who showed little need or desire to be with other people. However, when she was introduced to movement activities, she gradually began to develop an interest in interacting and communicating with her partner. She liked, for example, to be picked up by her partner, holding out her arms to request this, and, sitting legs astride her partner's waist, she would use her head to indicate that she wanted to be twirled around. Then she would bounce up and down in her partner's arms to show she wanted to be lowered to the ground. Laura was learning that interaction is fun, and that she could take charge of a sequence of events.

This new-found ability to control and direct activities, developed over the next 18 months, and her sessions began to include long sequences of interaction in which Laura would manipulate her partner through various movement patterns. Her limited residual vision is particularly stimulated by movement, and one of her favourite routines was to push her partner's arm up in the air and wait for it to fall. By altering the height to which she pushed the arm, she could control the speed and timing of this routine, and the knowledge that she was in charge gave her great pleasure.

"Her limited residual vision is particularly stimulated by movement, and one of her favourite routines was to push her partner's arm up in the air and wait for it to fall"

The next stage for Laura was to learn to take the lead sometimes and give it up at others, and to "listen" to her partner. This was not an easy lesson for her. However, through gentle, playful interaction she learned to take turns. For example, she would initiate a game involving pushing her partner from behind so that she ran forwards then stopped. Her partner then turned and did the same to Laura.

Now Laura is eleven and she is beginning to take much more interest in what her adult partner can do. Often she will sit close opposite her partner and watch her very carefully. Sometimes they will copy each other, tossing their hair from side to side, or shaking a hand in the air. Other times they will vocalise, each copying the other in turn. So long as the adult keeps her own suggestions within Laura's range of interests, Laura will happily follow her. The session often ends in giggles!

Recording a movement interaction session

In order to provide consistency, movement interaction sessions should be recorded as fully as possible, especially where more than one adult is likely to be working with the child. It is difficult to describe movement in words, as there are so many layers of activity to observe as well as facial expression, vocalisation etc. The quality of movement is more difficult to describe than the action but it is important to note. It may be the best clue as to how the child is feeling at the time of the session.

In recording a session, train yourself to be analytical and try to give an accurate description of:

- **What happened?**
  What did the child do? What did you do? Was there a repeated pattern of movement? Any movements not seen before?
- **Why did it happen?**
  For example, the child flapped his hand. Was this in response to something you did, or was it a new activity/an habitual gesture? Was it an expression of feelings? A request?
- **How did the child move?**
  Were his movements deliberate or uncontrolled? Gentle or strong? Brisk or relaxed? What use of space did he make?
- **When did he move?**
  Describe also periods of non-activity. These are important to the overall communication.

Have you learnt anything about the child or about yourself within the session? (Be objective.)

Record of movement interaction session

Name of child: Date:

Staff member:

Description of session:

Any new activities today?

How do you feel about the session?

Chapter 3

Developing natural gesture

"By treating the learner as social and communicative, she/he gradually becomes so. We show the child through our actions that what she/he does has meaning to us. We treat the behaviour as meaningful... In this way the learner begins to understand that a behaviour can have a shared meaning." (Hewett and Nind 1993)

As the child develops an increasing ability to understand and eventually to control interactions, attention may shift from the close relationship between adult and child, to include a greater interest in objects and the environment. We may have to intervene to compensate for a lack of visual information, and structure the child's environment to take this into account.

The child with visual impairment has ways of expressing his interests and needs which are very personal and may appear unusual, for example, he may move his fingers slightly if he hears the sound of an object he likes and lower his head to listen more intently. It is important that these gestures are carefully observed and understood. It can be difficult for the adult to know what it is that the child is referring to because of the child's unconventional means of self-expression. If a mis-match in interaction continues over time, there is the danger that the child gives up trying to get his message across and retreats within himself.

Observing the child

It is necessary to observe the child's repertoire of gestures, movements and vocalisations, and the context in which they are used. The earliest of these tend to be very basic, eg a mouth movement to express hunger or thirst, an arm movement to express like or dislike. These gestures can be picked up by the adult and reflected back to the child. That is, they can be used by the adult when talking to the child to show him that he has been

understood. Gradually the child realises that these particular movements and gestures elicit a consistent reaction from the adult, and thus he becomes aware that what he does affects those around him and that these gestures carry meaning.

The importance of the adult role within everyday interactions must always be stressed. The adult has to carefully observe and interpret what the child is doing. She has to be able to respond and adjust her behaviour appropriately to suit the child. All the time she is monitoring the situation, following the child's lead, so that he is experiencing what it is to be in control.

This way of observing and interacting with the child should be carried on, not only within the movement interaction sessions, but also in the routines and activities of the class day. This is much more difficult in an everyday context. There are the usual constraints of a busy school timetable, specialist teachers and therapists coming in, mealtimes, toileting and curriculum goals to be met! All these can put pressure on staff, so that children tend to be rushed through activities to be on time. We need to take a step back and think "What are we trying to achieve? Is this timetable really in the child's best interests?" The most important thing we can give our children and ourselves is time. Time for them to express themselves, time for ourselves to be watchful.

"The most important thing we can give our children and ourselves is time. Time for them to express themselves, time for ourselves to be watchful"

All children have ways of communicating, through facial expression, crying, laughing, personal vocalisations and movements. There is often a tendency to underestimate what a child is communicating, particularly if they have severe physical difficulties. There may not be eye contact that sends the message "I am talking to you!" We have to be particularly watchful as to whether the child is attempting to communicate or not, as they are less aware of the listener or the listener's needs. Time for observation is therefore one of the most important elements of a busy schedule. Opportunities should be made to share these observations with other members of the team and with the family. Good teamwork will ensure consistency of approach through discussion and consensus.

At the same time as observing closely what the child is actually doing in the everyday environment, we are looking for ways of extending and developing his communicative abilities.

Bringing objects into a movement session

The beginning stages of shared attention (see section entitled "Mother-child interaction") can be addressed by bringing favoured objects into the movement interaction session. This has to be done with care. Children with visual impairment may be more interested in people than objects, and resent their inclusion in the secure, established relationship.

However, at the right stage and in the right way, in order to widen their experiences, children should be encouraged to take an interest in objects.

To begin with, the object should be a part of the interaction itself:

- Tom and Jane, his teacher, are sitting opposite each other, clapping rhythms in a turn-taking exchange. Jane picks up a ball and holds it between herself and Tom, and she begins to tap Tom's rhythms on the ball. Tom picks up the ball and holds it to his head, Jane presses her head to the ball and shakes her head from side to side. Tom laughs and throws the ball backwards over his head.

In the above example, the ball is secondary to the interaction between adult and child. However, gradually through games such as these the child begins to accept and share objects with another person. In time the properties of the object itself take on more significance and the communication becomes more about the object.

- Laura and Pat, her carer, are building a tower with large beanbags. They lift the heavy beanbags together, one on either side. Laura reaches for the next beanbag and Pat holds back a little, waiting to see if Laura will ask for help. Laura realises that the beanbag is too heavy for her and holds it out to Pat to ask for her help. Pat takes the other end and together they lift the beanbag.

Giving and receiving communication

One of the more difficult concepts for children with visual impairment to grasp, is that communication is a two-way process. It may be that they do not yet see themselves as separate individuals and therefore have a poor understanding of reciprocity and the need to alter their response to take account of their partner. They may be able to send a message and initiate interaction but still have only a vague understanding of how that message is received by another. How can they understand that a sighted person can see their gesture?

Many children may be seen to be using symbolic gesture eg tapping the table to indicate the keyboard, but they may not be aware of having to convey that message by gaining the attention of the adult first. The situation is still dependent on the adult interpreting the behaviour as meaningful. This unevenness in communicative development is not uncommon. It is vital to provide continuing experience of movement interaction as well as opportunities in the everyday environment in which children can learn to draw attention to themselves by indicating "I" or "me".

- Laura was sitting in morning circle when Joan, her teacher, said, "Who would like to be first this morning?" Laura began to rock vigorously in her chair. Joan tapped Laura on the chest and said, "Oh, Laura says 'Me, I want to be first!'"
- James went to the computer, where Joan, his teacher was sitting, and began to tap on the keyboard, wanting the computer to be switched on. Joan did not immediately respond, waiting for him to convey his request to her more directly. After a while he turned and tapped her on the arm insistently. Joan turned the computer on saying, "Right James, you want me to turn the computer on."

Adult referenced gestures

One of the earliest gestures some children use in order to draw attention to themselves, is to pull the adult towards them or to put the adult's hand on the thing that they want. These can be very effective means of communication and act as precursors to more symbolic natural gestures. If we analyse the message that these gestures give, they mean "Come here" and "I want this" respectively. In order to move the children forward, we must analyse very carefully exactly what each gesture means and respond accordingly.

- Mary was sitting playing on the swing. Linda, her helper, was pushing the swing for her. The swing came to a stop. When the swing had stopped, Mary hesitated, then pulled at Linda's dress. Linda knew what Mary wanted, but she went and stood quietly behind her, interpreting her gesture as meaning "Come here". Mary thought for a while, waiting for Linda to start pushing the swing, but nothing happened. So Mary began to rock her body up and down, as if to say, "I want to swing". Linda responded by saying, "Swing, swing", and pushed the swing again.

In the above example the adult is beginning to be more proactive. This must be done with care, ensuring that the child is ready. If he is just beginning to realise that he can influence another by tugging at them, then that signal must be responded to immediately and reinforced. Any delay in responding could result in the child withdrawing, feeling that he has not been understood. If the child is well aware of his abilities to get what he wants, then it is perhaps time to gently encourage him to be more precise and to use more symbolic gesture.

Linking objects and natural gestures

Once this awareness is established, we can begin to extend the child's communication skills through adult intervention. An object or activity can be chosen that is known to be motivating to the child and this can then be linked to one of his own natural gestures or body movements. This must be done with sensitivity and observation will be crucial.

"An object or activity can be chosen that is known to be motivating to the child"

By observing closely, we need to establish the child's:

- favourite activities and playthings
- gestures used, if any, to request these
- gestures used while playing with objects
- range of natural movements and gestures.

Once we know what a child likes to play with, and have a good idea of his range of movements, the adult can intervene to link an object or activity to one of the child's natural gestures which seems to relate well to the chosen activity. Sometimes this will be a body movement that the child makes while playing with the object.

Although the adult may have helped with the link, at this early stage it is important not to impose (ie manipulate the child's hand into an unfamiliar hand shape) any sign on the child if it is not already a part of his natural repertoire. By using familiar movement patterns he will already be aware of how the gesture is made, and will only have to learn the symbolic aspect – what it stands for. Thus, it is easier for the child to understand and eventually to use the gesture as a sign.

- Jason, a totally blind child, used many tapping gestures on his face and head. He also loved snack time! One of his gestures, a tap with his index finger against his cheek, was chosen as his sign for biscuit. This was established relatively easily since it was a known movement for him and motivation was high.

Examples of ways that natural gesture has been used with some children are:

- Music – kick a leg
- Fan – wave both hands
- Electric massager – rub hands together
- Guitar – scratch the table
- Light – wave hand near face.

This symbolic understanding can take a long time to develop, and even those children with quite good communicative ability are likely to move through a stage where they appear to confuse signs. Although some children are aware that their movements and gestures can convey meaning, they may not understand that a specific gesture has a specific meaning. When the first signs a child uses are within his own physical repertoire, it will be easier for him to progress through this stage.

Vocalisations

Vocalisation is a very early means of communication, such as crying for displeasure, or making sounds to indicate pleasure. Some children play with their vocalisations, not necessarily in a communicative way, but for their personal enjoyment. These vocalisations can be used in the same way as individual body movements or gestures, and, like them, they can take on meaning. An example of this is a "raspberry" sound, frequently made by a certain young child, particularly at times when he was enjoying himself. Since he had also shown that he enjoyed an electric massager, the vocalisation was linked to this particular object and so became his way of requesting it. In some cases the vocalisations made will be imitations of the noise made by the object, and are very effective methods of intentional communication.

"Some children play with their vocalisations, not necessarily in a communicative way, but for their personal enjoyment"

Examples of this include:

- a "drr" noise with the tongue for an electric toothbrush
- a quiet vocalisation, rising in pitch, for a fan
- a high-pitched cry for a whistle.

Repetitive gestures

These are gestures that the children may use time and time again. Care must be taken not to judge these habitual gestures as being purposeless, and close observation is required to try to ascertain the meaning of these movements. In the first instance these gestures could have been communicative or exploratory, but because of a lack of appropriate response or stimulation at the time they first developed, they have become habitual. Very often they serve the purpose of blocking out what may be a confusing and threatening world that the child is unable to make sense of. Repetitive actions can make interaction and exploration difficult to establish. Research suggests that they develop from the natural, repetitive behaviours of the young infant eg kicking or hand gazing, but in the child with developmental delay, this repetitive behaviour has not yet been replaced with the more complex behaviour that usually follows. (Murdoch 1997) Unless the child is harming himself or others, the behaviour should not be regarded as something to be changed, but as part of the child's communicative repertoire for us to give meaning to.

Experience has shown that when children start to use these gestures communicatively they are less likely to use them in an obsessive or ritualistic way since they have now acquired significance and meaning.

- Iain spent much of his time sitting on his own scratching or rubbing the surface in front of him. A range of different tactile surfaces was put around him, and he soon discovered that his scratching produced a greater range of tactile and auditory feedback. This encouraged him to move about and start exploring the different surfaces in his environment. Later he was given a guitar, and discovered that his scratching enabled him to make exciting new sounds. This became a favourite object, and in time his scratching gesture became his way of referring to the guitar. Although he still used this same movement to explore, the context in which it was used made it easy to determine whether it was explorative or communicative.

Songs

Many children enjoy music and songs and develop ways of requesting their favourites. For some children this can be a good way of encouraging them to initiate or make choices, as motivation is high. Methods of requesting may include:

- one of the child's personal gestures
- an attempt to vocalise a part of the tune
- a movement that is part of an action song.

This is often an activity when family members are happy to supply examples of gestures used for favourite songs at home.

Recollecting experiences

A natural way to communicate with a child is to talk about shared activities. This might be an outing made together or a shared game or activity. While recalling the events, the adult can illustrate the story by reliving the activity using actions and gestures that formed a part of the activity. Similarly sounds may be used eg the sound made by the green man bleep when crossing the road. Such sounds may well have been a very significant part of the journey for the child. In this way the child is helped to remember activities that have taken place and learns how to relive his shared enjoyment with the adult. He can begin to develop both memory and imagination.

Conclusion

It can take a long time for communicative understanding to develop. Children may sometimes use one natural gesture to convey different meanings, or perhaps they will run through a whole series of them in the hope that one gesture will get them the desired activity, object or person. They have understood that their actions can convey meaning, but they have not worked out that each individual movement or vocalisation stands for a specific object or activity. In other words, they have not yet acquired true symbolic understanding. However, experience and repetition will help the child to develop this understanding. Once the idea of the symbolic nature of gesture has been established he is well on the way to being an active communicator.

"Once the idea of the symbolic nature of gesture has been established he is well on the way to being an active communicator"

Chapter 4

Learning a sign system

"We cannot develop language apart from ideas and experiences or apart from the environment and relationships in which those ideas and experiences occur."
(Crook and Miles 1999)

Encouraging understanding

The importance of the adult language model

Some children with visual impairment may face great difficulty when trying to make sense of speech. With little or no functional vision, they have no way of knowing what is being talked about unless they can touch it or have had experience of it. Their limited physical abilities can mean that they have had less chance to explore their environment at first hand, and they will be dependent on an adult to move either them or the objects around them. Their learning difficulties mean that integrating the fragmented information that they receive through touch and hearing into an experience that has meaning, is a complex task. Limited experience combined with a lack of visual referents means that they may hear speech but will not be able to make sense of it. In the end many children will "switch off" and stop listening.

Careful consideration should be given to the language model that adults provide when they speak to children. There can be a tendency to talk too much, sometimes over the children's heads, about things that they cannot possibly understand. For these children with visual impairment, language must be about events that are happening or are about to happen. It should refer to things that they can directly experience through sound or touch.

Non-verbal communication

In ordinary conversation a very large part of the communication is being put across non-verbally. By reading the speaker's face, the listener gains information about the speaker, how she feels about the topic and whether she is sincere in what she says. These are the elements that colour our communication, make it more interesting and help us to form bonds between ourselves and others.

When communicating with a child with visual impairment and multiple disabilities, often the emotional content of the conversation is what is most important to them. This is the part they understand, when words make little sense. This makes it even more important that we use every means at our disposal to replace the visual elements of non-verbal communication with something meaningful, through the use of touch and tone of voice:

"When communicating with a child with visual impairment and multiple disabilities, often the emotional content of the conversation is what is most important to them"

- **Tone of voice**
  Through the voice we can convey much of the emotional content of a conversation eg enthusiasm, interest, fun, boredom. We must become more aware of using our voices dramatically, using emphasis and timing to make ourselves clear and interesting.
- **Touch**
  We convey a lot of our feelings through touch and children are very sensitive to this. If we are feeling nervous, they will know immediately. Through touch we can convey eg expectation, pleasure, warmth, confidence, reassurance, like or dislike. We also send the message "It's you I am speaking to" or more importantly, "It's you that I want to speak to." Touch replaces eye contact and has the effect of involving the child with visual impairment in the conversation.

At the same time, the visual elements, facial expression and body language, should not be forgotten since many will be able to see these to a greater or lesser extent.

Children's language

There are a number of children with visual impairment who use speech, but in an inappropriate way. They may be echolalic and repeat whatever is said to them, or use a lot of questions and learned phrases out of context. These children have acquired speech, but it is not linked to the accepted meaning. It may be used in other ways, such as gaining or holding attention with repetitive phrases or filling what to them may be a threatening silence. Sometimes they may be playing with words for the sake of it. They will be speaking without "communicating".

It is noticeable how frequently some children use questions in their speech, often inappropriately. In addition they may have great difficulty in responding to very simple

questions. As a result of their visual impairment many children miss out on the vital pre-verbal routines such as turn-taking and give and take games, and perhaps for this reason they have not really understood the process of question and answer. It is important at the early stage of development to avoid or lessen the frequent well meaning questioning that adults tend to indulge in. When the adult does ask a question, she should encourage the child to understand that he also has a part to play, by waiting and giving him time to respond.

A very effective way of encouraging the children's communicative understanding and of providing an appropriate language model, is through the use of sign.

Why use sign?

- **To bring the adult closer to the child**
  Close proximity helps to ensure that the communication between adult and child is successful. The child is closely involved, and better able to understand that he is the one being spoken to. Touch is essential as a means to replace certain visual elements of non-verbal communication.
- **To encourage understanding**
  If the adult signs as she speaks it has the effect of slowing her speech down, and making it simpler, clearer and more relevant. This, combined with the physical act of signing, has the effect of attracting and focusing the child's attention on what is being said. The child begins to listen and spoken language starts to take on meaning. For many children this is perhaps the most important reason for signing.
- **To give children an alternative means of expressive communication**
  Signing is also used to encourage expressive communication, and as a way of developing the children's personal gestures. For some children who have failed to develop speech, signing can offer an alternative means of communication and a breakthrough to understanding. It is important that the children become aware that signing is a two-way interaction and a real means of communication, not just something that they alone are expected to do. If we want children to sign, we must always sign to them when we speak. It can be difficult to be consistent about this, particularly if there is only one child in a group of non-signing children, but it is essential to maintain its use.
- **To encourage the development of spoken language**
  For some children, particularly the younger ones, signing can also help in the acquisition and development of speech that is relevant and meaningful as opposed to imitative or echolalic. By providing a link between the word and its meaning, signing helps to develop and internalise concepts. Since in language development, gesture and vocalisation precede speech, it seems likely that introducing sign in this way will aid this developmental process.

Sometimes parents are concerned at the idea of introducing their child to signing, as they think this will mean that the child will not develop speech. There have been a number of studies carried out which involve using signs with sighted babies who are in the process of acquiring language. Results appear to show that these babies acquire spoken language more quickly, and that both their cognitive development, and social behaviour compare very favourably with that of other non-signing babies. (Acredolo 1997) This is in line with the now generally accepted belief that using signs alongside speech can help in the development of spoken language, and it has provided reassurance to parents.

Meaningful signs for children who are visually impaired

The Canaan Barrie sign vocabulary

In developing this approach, one of the main factors was to make signing, which is a visual means of communication, meaningful and relevant to children with severe visual impairment. There was obviously a need for a sign vocabulary created with their specific needs in mind, and which would provide a multi-sensory approach by making full use of children's unimpaired sensory channels, notably touch and hearing.

Signs from British Sign Language vocabulary have been used as a base, but where necessary these have been adapted to give maximum auditory and tactile feedback. It has become evident that one of the most important features of a successful sign is that it should have a reference point on the body. Signs made out in space are too difficult, so they have been brought back onto the body, adding sound and rhythm. In some cases signs may be made away from the body, but involve hand movements creating currents of air, which can be detected by the child.

"It has become evident that one of the most important features of a successful sign is that it should have a reference point on the body"

Another important feature of the adapted signs is that they are simpler. A child who is totally blind will have particular difficulties with more complex signs. His body image may not be well developed and, without a visual or tactile reference, he will find it difficult to judge direction and distance. His motor skills are also likely to be poorly developed making the finer points of a sign more difficult, for example, separating fingers or the orientation of his hands.

The Canaan Barrie vocabulary consists of 150 adapted signs (see section entitled "The Canaan Barrie signs" on page 108). There is a core vocabulary of about 50 words based on the children's everyday needs and activities. Rather than selecting a few target signs to "teach", it is important to use all or most of the signs in the core vocabulary. This has the effect of creating a signing environment which provides the children with a realistic language model and which encourages them to use the signs. It also gives them the opportunity to select those signs that interest them, rather than having signs chosen for them.

Using the signs

General points to observe when signing to a child:

- sign only the key words in your sentence, using the tactile/auditory signs from the vocabulary
- pay attention to your tone of voice and facial expression
- observe carefully for any kind of reaction from the child and respond to it eg any movement for "yes" or "no" or any signs of excitement/pleasure/displeasure.

Signing should never be limited to special sessions. Use the system of signing when speaking to children throughout the day.

There are three methods of signing to a child:

- **in front** – signing in front of the child
- **on body** – signing on the child's body
- **hands over** – child's hands placed over the adult's.

The approach used will depend on the child's level of awareness, his visual ability and his own personal preference. Experience, observation and a close knowledge of the child will influence the way the signs are made. In general start by signing "in front" and move as soon as possible to "on body" signing.

Signing in front

- sign close in front of the child
- make the signs near to the child's face so that he is aware of your hand movements and the sounds and currents of air they create
- if the child has some sight we need to adapt our signing position to take into account the nature and extent of the visual impairment. Children with peripheral vision will need signs made to the side of them rather than in front, as may children with severe nystagmus. Children with patchy vision or with a severe visual field loss may need signs made at a greater distance to enable them to take in the whole sign.

Signing on body

- signs can be made on the child's body, as long as the child has no objections (most children positively enjoy it). For example, "good" (two taps on the chest), can be signed by the adult on herself or on the child. This direct physical contact provides another clue to help differentiate the signs. Always warn the child when you are going to sign on his body – you could gently touch the child on the shoulder at the beginning of your conversation, to establish initial contact. Be careful not to take the child by surprise.

The "hands over" approach

As the children's awareness and understanding of signing grows, they will start to use Canaan Barrie signs as well as any personal gestures they may already be using. Those with some sight may learn the signs visually, although some will still need additional guidance, since imitating a movement pattern may present problems.

Those children with very little or no sight will need more help from the adult, although some signs may be acquired through "on body" signing. In the early stages, the adult should not automatically model signs by taking the child's hands and manipulating them, since this is intrusive and may well be counter-productive. The hands of a child with visual impairment are very important to him for gaining information. If his hands are constantly held this cuts off one of his main avenues of learning, and can be compared to blindfolding a sighted child.

"The hands of a child with visual impairment are very important to him for gaining information"

Many visually impaired children are extremely tactile defensive, and can dislike having their hands touched at all. Manipulating these children's hands in the wrong way and at the wrong stage will inevitably set up barriers against signing from the start, as well as denying them any control.

At the same time if a child with little or no sight is to use signs to express himself and communicate, he will need help from an adult to enable him to learn them. Once the idea has been established that specific signs or gestures stand for specific objects or activities, the child can be invited to put his hands over the adult's or hold them as she signs. Having reached this stage of understanding the child will often reach out of his own accord, as he becomes aware of the adult signing in front of him and wants to know what it means. With his interest thus engaged he is no longer resistant to having his hands used. Moreover, with his hands over or holding the adult's, he can remove them should he wish to do so. Gradually, by participating in the conversation in an interactive way he begins to pick up the signs and adopt them for himself.

Procedure

- invite the child to reach out and feel your hands
- keep your hands under the child's, or encourage him to hold a finger and continue signing
- if the child withdraws his hands, then continue your conversation, signing in front as before
- when using the "hands over" method, difficulties can arise with the direction of signs. As a rule, always make the sign on the child's body even though it is the adult who is speaking, ie the adult says, "I am going to go out" – the go sign should be made down the child's arm. This avoids confusion when the child comes to use the signs himself and avoids problems that could arise if the child had to learn to reverse the signs. This is particularly important when working with non-sighted children.

Most conversations involve a mixture of signing methods depending on the child's preferences, the signs used and the situation in which the conversation is being held. There are no hard and fast rules, success will be dependent on the adult knowing the child and monitoring his understanding. Signs can be repeated or the words altered, until the adult is satisfied that she and the child have achieved mutual understanding.

"There are no hard and fast rules, success will be dependent on the adult knowing the child and monitoring his understanding"

The later stages

The adult should be aware that the "hands over" method of signing with children is mainly a way of teaching the sign, and she should be aiming to withdraw her hands, so that the child uses the sign on his own. It is important to do this gradually and sensitively. A possible exception to this is the child with an additional hearing impairment who may need to keep contact with the adult in order to understand her.

Some children feel the need to use the adult's hands with which to make the signs and this can continue for some time. It may be the child's way of ensuring that the adult is listening and, as such, should not be discouraged. It may denote a lack of understanding on the part of the child that he can form these signs on his own and still be understood by another. Many children will remain at this stage.

If and when a child is ready, gradually remove adult support. The child should be allowed to keep in contact by, for example, touching the adult's wrists when she signs. While waiting for a reply, the adult may lightly touch the child's forearm to show that she is listening. Once the child has learned the signs, return to signing "in front" and "on body". He will know what the adult is signing by associating her words with the sounds and air currents created by her hand movements.

As his understanding of signing increases the child may be happy to receive more direct guidance, and thus some of the later more complicated signs can be taught by moulding his hands.

Very often a child with visual impairment will form signs which are inaccurate since he lacks the ability to monitor his gestures through sight. When he starts using the signs himself do not insist on accuracy, so long as the meaning is clear. Accuracy will develop later once the signs have been established (just as when the young sighted child starts to babble he is not expected to speak clearly straight away). The adult can encourage more accurate signing by moulding the child's hands as long as she is sure what it is the child is trying to say and as long as the child is ready to learn in this way. Adults who know the child well will not find this a major difficulty.

"Very often a child with visual impairment will form signs which are inaccurate since he lacks the ability to monitor his gestures through sight"

Some areas of confusion can occur when a child has developed a personal gesture that is different from the accepted sign in the Canaan Barrie vocabulary. Should we continue to respond to the personal gesture, or should we be trying to change it? The answer to this is both. Remember the young boy who tapped his cheek with his forefinger as a personal sign for a biscuit. Staff responded to the sign by reinforcing it on his cheek, but also gave him the Canaan Barrie "on body" sign on his elbow. The parallel with language development is relevant here. We accept the baby word for something, often repeating it ourselves, but at the same time provide the proper word.

Always accept and respond to the child's own signs, and show him he has been understood by reinforcing that sign, whilst at the same time providing the correctly formed sign.

"Always accept and respond to the child's own signs, and show him he has been understood by reinforcing that sign, whilst at the same time providing the correctly formed sign"

Recording

An up-to-date record should be kept of the individual child's personal gestures and signs, and everyone who comes into contact with the child should be made fully aware of them. Good links and regular communication between home and school are particularly important. Since the child is at home more often than he is at school, many personal gestures will originate at home, and school staff should make sure they are aware of these. Likewise, when particular gestures or signs are being used at school these should be made known to the parents, so that they are reinforced at all times. Consistency of response is vital.

How the signs are used

The way the Canaan Barrie sign vocabulary is used will depend on the child. It has been widely and successfully used with non-verbal children in different ways, and for slightly different reasons. It has also been used to encourage children whose speech is repetitive or echolalic to develop language that is more meaningful and relevant. For many of those with complex multiple disabilities the main purpose of using sign is to develop an understanding of spoken language. Some children continue to use their own personal gestures alongside signs they have picked up from the vocabulary, while others will use only Canaan Barrie signs. Some use signs and speech together.

Progression to standardised sign systems

A few children may use a considerable number of signs and be ready to progress on to a standardised sign system such as Signalong or Makaton. How successful this will be may depend to a large degree on their level of vision. In our experience children with relatively good vision seem to find the changeover comparatively easy whereas children with very limited vision still need the kind of additional tactile and auditory feedback and the simplified signs provided by the Canaan Barrie vocabulary. Further research in this area and an expansion of the adapted sign vocabulary are perhaps projects for the future.

- Daniel was a three-year-old blind child who had had a tracheostomy since birth so did not speak. When he came to the unit he already had a few personal gestures which he had invented himself, and which had been recognised and responded to by his family. He went on to acquire a wide vocabulary of Canaan Barrie signs. Where these were not available, he used his own. Of interest to us was the fact that his own signs nearly all had a reference point on his body – a characteristic that had been of paramount importance when we were adapting the signs.

  To allow him to increase his vocabulary when he went to school, Daniel was introduced to a standardised sign system. However, it quickly became evident that many of these signs would still need to be adapted to enable him to use them. As a blind child, Daniel's fine motor skills were not well developed, and he found the signs complex in terms of movement pattern, orientation and hand shape. In addition, some of the signs were based on very visual concepts. The process of adapting further Canaan Barrie signs was started.

  About this time, Daniel's tracheostomy was reversed and he began to speak. Instead of starting to use single words or two word phrases, he spoke in reasonably well constructed sentences, showing a level of language ability that was in line with the rest of his development. It was apparent that his communication needs had been well served by his signing. Now he is speaking well and making up for lost time with his incessant chatter!

Chapter 5

Exploring the environment, play and active learning

"The essence of play is that it is initiated by the child himself; it is he who chooses what to play and how to play. For, unlike work, play is carried out for its own sake, not for the sake of an end product or any reward. The act of playing is its own reward."
(Jeffree, McConkey and Hewson 1977)

The theory of play and active learning

Much of our work is based on the ideas of two theorists, Piaget and Vygotsky. Piaget named the period of early infancy from birth to two years, the sensorimotor stage. This is a time for exploring, interacting with the environment and experimenting with physical actions on the environment. In so doing the infant is learning to control his environment and building the foundations for later more complex thought and learning. Piaget put emphasis on the individual constructing his own hypotheses about the world and saw development as a process of adaptation to the environment.

Vygotsky emphasised the role of the adult in helping the child to develop his learning. He felt that Piaget ignored the cultural context. He stated that we learn through interaction and that we can learn more through assisted interaction than we can on our own. We learn through meaningful experience. In play, the child constructs his own ideas and the adult's role is to extend and enhance his thinking. A lot of learning depends on what we already know and this forms the building blocks on which to base future learning.

"A lot of learning depends on what we already know and this forms the building blocks on which to base future learning"

Vygotsky describes this as the Zone of Proximal Development. That is, we take as our starting point the activities that a child can

currently do independently, but look towards the range of skills that he or she is on the verge of mastering. He believes that performing an activity in a social context is a necessary precursor to performing it independently. The adult guides the child towards internalising the methods used to achieve the goal, and through repetition of the activity, the adult gradually hands over responsibility for this achievement to the child. (Vygotsky 1978).

More recently, theorists began to bring the two views more closely together and have found that the physical and social contexts for cognitive growth are linked. Donaldson (1986) has shown that once Piaget's experiments are put into an everyday social context that is familiar to the child, the child performs much better. Modern researchers are showing that the development of reasoning is closely linked with the physical, social and cultural context in which the child is operating.

Heuristic play

Elinor Goldschmied developed and promoted the ideas incorporated within "heuristic play", that are now quite widely used in schools and units throughout the country. The word "heuristic" comes from the Greek "eurisko" that means "serves to discover" or "gain an understanding of". The method emphasises the importance of spontaneous play, and how children, provided with the right materials, will make their own discoveries and direct their own learning. The materials are not plastic toys but a range of everyday objects that provide "rich sensory experience through touch, smell, taste, sound and sight and the sense of bodily movement". The materials have endless possibilities from mouthing, sucking, handling and banging to filling and emptying, selecting and discarding, recognising similarities and differences, piling and balancing etc, depending on the development and interest of the child. The child learns that there are several different ways of achieving the same goal, which is the basis of future problem solving. Adults take on a facilitating role. They do not direct the child's discoveries but sit close by and are quietly watching. "The attentive adult gives the babies an all-important 'emotional anchorage', containing their anxiety and freeing their curiosity enabling them to play and learn". Goldschmied (1987, 1992)

"The child learns that there are several different ways of achieving the same goal, which is the basis of future problem solving"

Play is child's work

Most children who enter mainstream schooling will have had a wide experience of play, and will have developed sophisticated play skills. Children with visual impairment and additional disabilities are likely to be operating at a developmental level much younger than their chronological age. For these children play is going to remain their main avenue of learning, and should form a central part of the curriculum. It is important, therefore, to

find practical ways of enabling them to extend their play skills, bearing in mind that we have to assist in the development of something that most children learn naturally and incidentally. At the same time it should be remembered that play is not only a learning activity, but also provides emotional satisfaction and is, above all, fun for the participant.

Older children for whom play may seem inappropriate, may nonetheless still be learning through active exploration of the environment. Although the word "play" is used, we refer to a method and style of learning appropriate to an early developmental level. The older child's learning should not become more adult directed simply because of his age. In fact the opposite is true.

"The older child's learning should not become more adult directed simply because of his age. In fact the opposite is true"

When thinking of ways to encourage children to play we may need to rid ourselves of some preconceptions as to what play is, and begin to think creatively about our approach to objects and activities. We are considering the needs of a very special group of children whose perceptions and understanding of their surroundings are likely to be very different from our own. Three key factors emerge as being fundamental to the development of play skills:

- **The role of the adult**
  She will need to be a facilitator, a mediator and at some points an intervener, whilst at the same time she must maintain an interactive, not a directive approach.
- **Creating the right environment**
  The way the physical environment is set up will determine how children explore and interact with it.
- **Considering the child's developmental level**
  If the child is truly to learn through play this must be pitched at the right level.

These key principles underlie the different approaches described, all of which have the ultimate aim of developing and extending the child's ability to explore and play creatively and independently.

Section 1

Developing early exploratory play

The ideas outlined in this section can be used with children at the earliest stages of development, alongside movement sessions and other social interactions. At this stage we are largely concerned with providing an appropriate environment. For these children, defining and limiting spatial areas is going to be a vital part of encouraging active learning. This is very much part of the developing infant's experience, starting in the cot or playpen. As he becomes more mobile he will seek out an enclosed area by rolling under a table, or climbing into a box.

"Defining and limiting spatial areas is going to be a vital part of encouraging active learning"

Defining spatial areas
Lilli Nielsen, who has made a significant contribution to the education of children with visual impairments, has described the idea of limiting and defining space. Some of her ideas have radically influenced approaches in nurseries and schools. She designed the specially created "Little Room" – an open-ended Perspex roofed box that can be placed over the small child, thus creating a partially enclosed area. A range of objects hang from the roof of the box, in close proximity to the child. This provides the child with an ideal environment for learning through his own active exploration of the environment.

Creating special corners and defined spatial areas is vital if we want to encourage this active learning for many reasons.

- **Creating security**
  The child has a safe familiar base in which he can begin to reach out and explore. No child is going to want to explore if he feels threatened or insecure. The feeling of security is of fundamental importance to all aspects of play and learning.

  - In the pre-school unit, Martin had great difficulty in settling, and had frequent screaming sessions during which he appeared frightened, and could not be consoled by physical contact. It was found that he settled and became calmer when he was in a large open-ended box. Eventually Martin started exploring the surfaces of the box by scratching and banging, creating different sounds as he did so. After several weeks he felt secure and confident enough to come out of the box. He then started to explore the room through scratching and tapping.

- **Promoting intentionality**
  Within partially enclosed areas, an assortment of objects is positioned hanging near or in close contact with the child, so that his least movement produces a sound or tactile sensation. Learning starts to take place when the child repeats the movement, and the same thing happens again. This can be motivating to the child because he is doing it on his own. "I did that! I can make things happen!" Since it is fun he keeps repeating the action, and then varies what he is doing, genuinely experimenting – "If I don't kick hard it doesn't work. If I kick to that side I get another sound."

- **Encouraging an understanding of sound**
  An important factor in the design of Nielsen's Little Room, is that it reduces or eliminates external sounds.

  For some children sounds are perceived as accidental, and they are unable to give them meaning by linking them to a sound source. Within the space of the Little Room, however, they are able to focus more easily on even the smallest sounds. Thus the idea is established that sound is caused by something, in this case their own movement. Nielsen (1992) found that children placed within her Little Room became noticeably more active after time spent in it.

  Nielsen is also the creator of the idea of the Resonance Board, a flat board made of plywood and slightly raised from the floor. Any movement the child makes when he sits or lies on it will cause sounds which are increased by the resonance of the board and felt as vibration through his body.

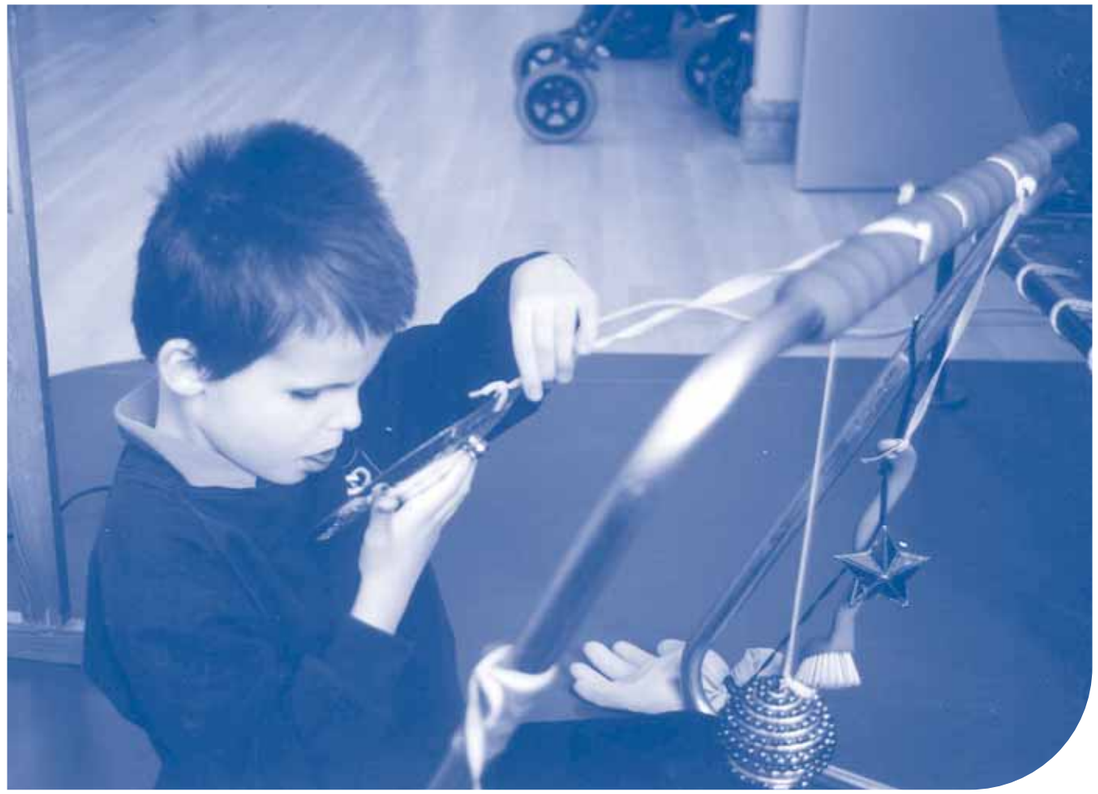
  It is worth paying attention to the listening environment that many children are exposed to, and considering whether there are ways that we can cut down on background noise and allow access to quiet areas or rooms. There is no doubt that background sound, such as music, talking and household sounds can discourage the child from actively

playing and exploring. Some children find both moving and looking very difficult. Listening is relatively easy, and can be rewarding as they recognise familiar voices or noises such as the toast being buttered. However, it is a passive pastime unless the children are actively involved in creating the sound.

- **Promoting intentional searching and an understanding of object permanence**
  Once the hanging objects within the area have been decided upon, they should remain the same for some time, so that the child can learn where they are and where to search for them. A child in the early stages of development learns through constant repetition that a particular movement always produces a similar result. Thus he can develop the awareness that he can have some control over his environment.

  Later the child learns that he always encounters the same objects in the same places, and gradually comes to realise that these objects are always there, even when he is not actually touching them. In this way he acquires a knowledge of object permanence.

  For some children, there is a case for cutting down the number of objects available, so that it is easier for children in the earlier stages of development to search intentionally and make choices. This decision will be dependent on the adult's knowledge of the individual child.



- **Promoting an understanding of cause and effect**
  Specially created corners may include switches that operate objects such as a fan, tape recorder or vibrating mat. These can be positioned in a way that motivates exploration and intentional movement, and promotes an understanding of cause and effect.

  - Anna, who is just beginning to roll is placed in a rolling corner. As a result of her random movements she makes contact with a switch and unintentionally operates it, causing the fan to start working. This happens several times and she eventually realises that she is the one responsible for controlling the fan. Her movement becomes more intentional as she has a specific reason for moving.

This is the most effective way of encouraging this type of understanding since the child is learning through experience. If the adult is continually prompting the child to operate a switch by taking his hand and placing it on it, the child is learning that the presence of the adult's hand is an integral part of the operation.

Providing the right objects

Careful thought will be needed when it comes to choosing which objects to hang in the various corners. They will have to offer the child reward in terms of sound, tactile and visual feedback. For children with visual impairment, real objects have an important place here. In some cases it is the best chance they will have to thoroughly explore these objects, and certainly for the older children they will be more age appropriate. With a bit of imagination, themes can be included. Sets of objects such as gloves, shoes, spoons etc can give children the experience they need to compare, to make generalisations about object properties, and develop an understanding of what makes a shoe a shoe and not a spoon.

Safety is an important factor, and will inevitably impose limitations on the choice of object. It is important to bear in mind that mouthing is a normal and effective means of exploration for children in the early stages of development. Children who are not getting visual feedback may also have delayed hand function so will rely on this method of exploration over a longer period of time.

"Safety is an important factor, and will inevitably impose limitations on the choice of object"

The objects we use should reflect the child's preferences and developmental level. Objects that give immediate reward when hit, for example chime bells or shakers, will be appropriate for children in the earliest stages of development, while those who are learning to grasp will be encouraged by smaller objects such as beads, chains and bangles. Nielsen (1992) recommends providing bunches of objects such as keys or measuring spoons, as this encourages set awareness and helps develop number concepts.

Some children who are tactile defensive and show a reluctance to use their hands, may prefer to explore and experiment with their feet. Ensure that children have periods of time without shoes on, and that objects and interesting tactile surfaces are positioned in easy reach of their feet.

- Natalie is seated in a partially enclosed area kicking in a random way against the bubble paper at her feet, when she unexpectedly bursts a bubble. She appears highly surprised at the sound, and after a pause she starts kicking again. Once more a bubble bursts. She then begins to kick with definite intention, later varying this, by rubbing or scraping her foot against the surface to change the sound and sensation. She is totally involved for over 15 minutes, and is immensely pleased with herself.

Individualised spatial areas

The original concept of the controlled environment can be extended and adapted in all sorts of ways, using objects that are appropriate to the children's age and size, but using the same basic principles. For example:

- a furry corner
- black and white or black and yellow corners and boxes
- wooden boxes with interesting tactile and visual surfaces
- musical corners
- shiny, reflective areas
- a rolling and crawling corner in which objects and surfaces are kept the same so that children are encouraged to move to the things they like. At either end of the rolling corner a scarf with a drop of essential oil provides the child with mobility clues. (Note: Always consult school policies on the use of essential oils.)

In order to ensure these special areas are made appropriate for a particular child, it is necessary to observe his play activity and behaviour, particularly in cases where this seems to have become very repetitive or obsessive. We can try to develop this activity by including certain objects, or positioning them in such a way that the child's play becomes more creative.

- Sara, who had a naso-gastric tube, had developed an obsession with twiddling and fiddling with it, to the exclusion of anything else. Lengths of similar tubing were hung in some of the corners she played in. When she found and recognised the tubing within the corner, she started to reach out and explore it. In so doing, her attention was caught by other objects hanging within the space. She then began to explore and play with these as well.
- Euan, an eleven-year-old boy, who had very limited exploratory play, spent a great deal of time standing and swaying his upper body to and fro in a very repetitive way. A corner was created for him with an assortment of hanging objects – beanbags, empty wine box bags, bells, shakers etc – positioned so that his body movements caused them to move, thus producing auditory and tactile feedback. It was noticeable that as he became aware of this, he began to change his movements, pausing and altering their speed and direction. In this way his movements became intentionally exploratory.

Section 2

Encouraging an interest in objects through social interaction

The length of time that some infants with visual impairment are dependent on close adult interaction may account for the fact that their interest in objects develops more slowly than their sighted peers. The interactive process is vital for establishing self-awareness, and a positive self-image, as well as developing early communication skills. Through this emotional bonding children learn that they can control what happens to them, and can begin to establish themselves as distinct individuals.

"The interactive process is vital for establishing self-awareness, and a positive self-image, as well as developing early communication skills"

For some children this early social interaction may not have been well established, or may have been curtailed early because it was felt to be less appropriate as the child grew older. It is important to recognise that many children, even some of the older ones, will still need one-to-one individual sessions that take this emotional need into account. Movement interaction sessions as described in detail earlier can help to provide this.

Introducing objects into adult-child interactions

While recognising the need to provide close person to person interaction, it is also important that we are sensitively guiding the child on to the next stage of play development, in which he learns that toys and objects can also be fun, and that the adult need not always be an integral part of that enjoyment. This can be a very difficult stage for some children, and simply providing a toy or object that the adult feels to be appropriate is not necessarily going to work.

We need to think carefully both about the object we introduce, and the way we do this. If we keep in mind the same principles that we use within a movement interaction session, and use the objects almost as an extension of the session, we are more likely to capture and hold the child's interest. This should be done sensitively and with care especially in cases where interaction was difficult to establish in the first place.

We should aim to ensure that, as far as possible, interactions centre around objects and activities that motivate the child. Within the interaction he should still have the experience of initiating and being in control, rather than allowing it to turn into an adult directed session. With a ball, for example, the adult should follow the child's lead as much as possible and avoid directing the child exclusively towards conventional ball play. Even once objects have been introduced, some children may still require an element of close contact. Keep in mind the concepts of anticipation and turn-taking, rhythm and timing. These will still be relevant. We are looking to move the child on so that his enjoyment comes from using the object and the adult's participation is less and less necessary.

- When he came to school aged four, Jake disliked any kind of interaction or physical contact with other people. By using a gentle, non-intrusive approach within individual movement interaction sessions, an adult was able to "break through" and build up a relationship with him. He began to enjoy these sessions, particularly the close contact they afforded. He would initiate a range of activities and routines that depended on changes of speed and rhythm, and he took a delight in controlling these. An "Ocean" drum, which had excellent auditory feedback when tilted, was introduced. A game evolved, with Jake standing close in front of the adult, in such a way that both were holding the drum. Jake then started rocking from side to side, rocking the drum at the same time. He gained great pleasure from changing the speed and length of his rock, building anticipatory pauses and playing with sound as he did so. At first the adult was an essential part of the interaction, but gradually she became less important, and Jake began to enjoy playing with the drum on his own.

Section 3

Developing independent play

In this section strategies are discussed that will encourage children to become more independently active in their play, thus extending the possibilities for incidental learning. Ideas are given on how we can help children who appear to be stuck in what is sometimes termed as stereotypical play – play that is no longer exploratory or creative.

The role of the adult

People working with children in nurseries or schools can face a dilemma. They are employed to educate the children, so tend to feel that they must be constantly providing input to encourage the children to perform or respond. In their desire to motivate, they forget the child's level of development and the kind of activities that really interest him.

- A well-intentioned adult sets out a pile of interesting objects in front of the child, and then selects an egg whisk that she allows the child to feel and then starts talking, "Here's an egg whisk. Can you feel it? Does it feel hard or soft? Does your Mum have one at home? Let's whisk something up in the bowl..."

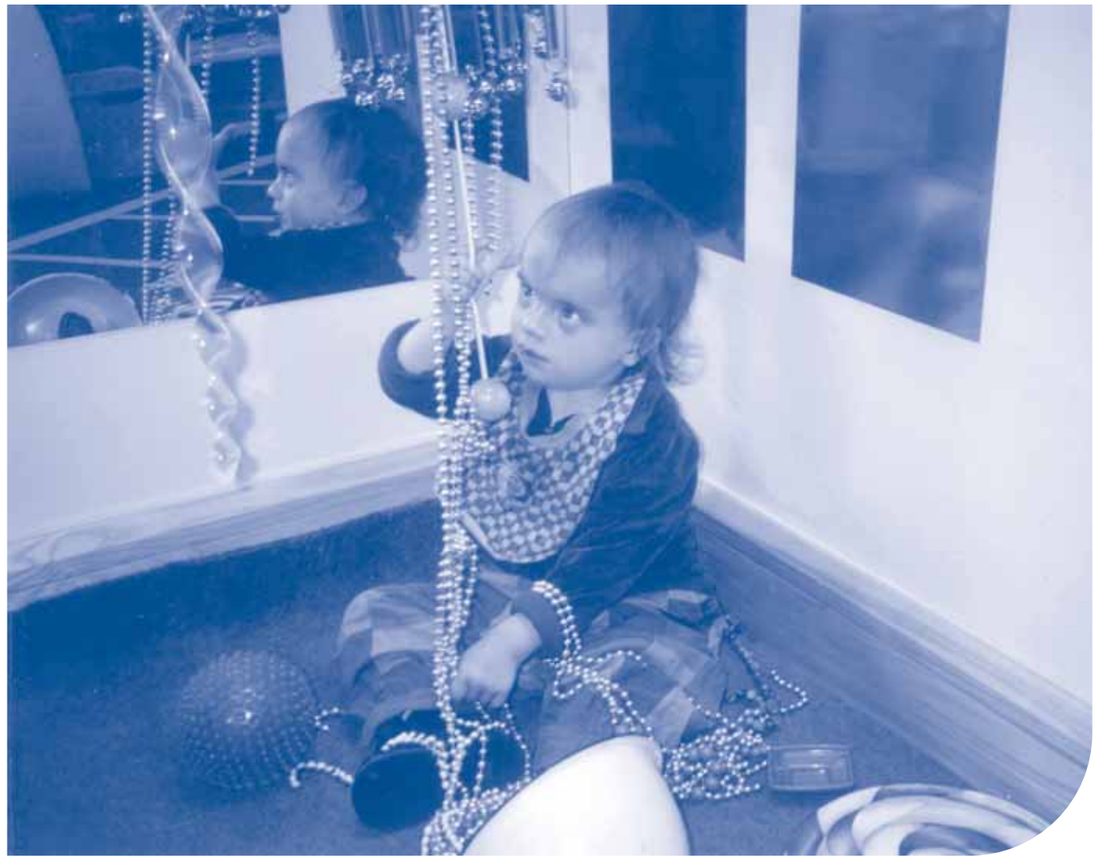
All this information and questioning might be appropriate for some children but it is likely to mean very little to others. There is so much speech that the child is unlikely to be able to process and make sense of it. In fact he may well show interest and enjoyment, but this is likely to be focused on the attention he is getting from the adult rather than anything to do with the object. The paramount importance of good social relationships has been stressed but adults must guard against allowing themselves to dominate within these interactions. The skill is to watch and wait for the right moment to intervene.

Adult-child parallel play

One of the ways of encouraging the children's interest in objects is by creating a "parallel play" situation. The adult plays alongside the child using a range of playthings in such a way as to attract his attention, without directly playing with him. If the child shows interest and reaches out, he can be shown or given the object, and helped to play with it, if necessary. After this parallel play, the adult places the things she has been using near the child, then leaves him to play on his own. Talking is kept to a minimum throughout, the sound, feel and function of the objects being the focus of the attention.

"The adult's play should reflect the child's developmental level and interests"

The principles of heuristic play, which were described at the beginning of this chapter, lend themselves well to this play situation. It works well with children who have reasonable manipulative ability, and should take place within small groups so that children will learn from each other, as well as from the adult. The adult's play should reflect the child's developmental level and interests. It is pointless for her to talk about stirring the porridge with a spoon, when the child is still at the stage of wanting to create different sounds by banging it.



The objects can be presented to the children in the form of sets of different things, such as containers, shoes, bags, beads, brushes and utensils. The children will inevitably use them in combination with each other, and they can then be re-sorted at the end of the session. It is another opportunity for children to get hands on experience of real objects, which offer more tactile interest than plastic toys.

Later turn-taking play

As a child develops the ability to learn through imitation, and begins to recognise and understand reciprocity, the adult can begin to take a more active role in the learning process. The adult instructs by playing alongside the child, providing an example, then waiting for the child to take his turn. This is an effective way of helping a child to acquire more structured play skills. The adult must make sure the targeted play skills provide the right amount of challenge, but are still within the child's capability.

The following examples of turn-taking games rely on anticipation, always an excellent motivator:

- speaking and blowing into different sized containers to produce different sounds
- throwing balls into different containers, or knocking down sound-making skittles
- swinging beanbags filled with different substances against a wall to produce different sounds
- building and knocking down piles of bricks
- tearing up paper, or breaking spaghetti, twigs etc.

Diversion not prevention

One of the striking features of the play and behaviour of some children with visual impairment is its repetitive nature. This has been referred to in the an earlier section on communication, and ways were discussed of using these behaviours and trying to assign meaning to them. They are often centred on manipulation and the idiosyncratic use of objects. Rather than trying to stop this play behaviour, we use it and in the process try to make it more creative.

In order to do this we use a form of intervention that we have called "Diversion". It is worth thinking about in all aspects of encouraging learning, and is useful when it comes to altering and extending play and behaviour, particularly when this has become obsessively repetitive. The adult deliberately sets out to intervene in what the child is doing, so that he is brought up short, and made to think about his actions and the object involved. For example, a child who is constantly hand flapping might wear a wrist-band or have scarves attached to his jumper sleeves. This would interrupt or divert the repetitive action. Because of the extra sensory feedback, the child's attention is attracted.

The ideas and ways of doing this are numerous, and of course very much depend on the individual child. The adults involved should know the child well, and have first established a relationship of trust. It should also be done in an interactive, playful way since any form of pressure will be counter-productive. It is important to bear in mind that these behaviours have developed for a reason, be it fear, anxiety or a lack of stimulation, and they can be very hard to alter. Certainly it is unlikely to happen overnight, but because something does not happen the first or even the tenth time, it is still worth persevering for the sake of the child.

"The adults involved should know the child well, and have first established a relationship of trust"

The following are examples of ways these ideas have been used:

- Alasdair, a teenager with cerebral visual impairment, spends a large part of his time twiddling and twirling objects in an unchanging way, with no regard to what the object is as long as it can be twirled. While engaged in this he appears oblivious to everything around him, and never looks at the objects. He is given a full size guitar, which he immediately tries to twirl in his usual way. Because of its size he is unable to do this and accidentally rubs against the strings making a sound. Alasdair then becomes fascinated by the sound and plays for some time using his residual vision all the while to look at the guitar.
- Jamie, a small boy in the nursery, spent all available time wandering around the room with an object, usually some kind of shaker or rattle in his hand which he waved in a repetitive way, appearing to be quite cut off from what was going on around him. By following and joining in with him using different shakers, the adult was able to attract his attention, so he stopped what he was doing to listen and reach out for the adult's object. Jamie is now at the stage of briefly interacting with the adult even to the extent of turn-taking and using different rhythms. Another way of intervening in his wandering was to set up a circuit obstacle course, to which he was immediately attracted since he loved climbing. He had to concentrate hard to avoid falling, so the object was discarded, and he began working out how to negotiate the obstacles he encountered.
- Six-year-old Gavin has developed very repetitive tapping play almost entirely centred around his mouth and face. The adult's aim is to divert this tapping away from his face to other objects. She therefore holds a drum close to Gavin, so that it contacts the object he is using to tap. He becomes aware of this interruption and stops what he is doing. At first he pushes it away, resentful of the intrusion, but the adult calmly persists, changing the drum for a tin lid, a wooden container, a cymbal etc. After several sessions of this Gavin starts to bang the object the adult is holding, briefly at first, but then more and more deliberately. The adult gradually moves it away from his face. She can now extend and develop this new skill by using different objects so that Gavin is participating in turn-taking routines.

Children playing together

Because of the developmental level of our children, true co-operative play may not occur very often, so we need to set up and create situations to allow for its development. There are daily examples of children with multiple disabilities showing awareness, enjoyment and active interest in each other's company. If these children are given the opportunity to be close to each other, they will express this interest through vocal exchanges, moving to make physical contact and often showing more visual awareness than usual. Children are very motivating to each other, and special relationships can be built up between them. The more disabled the children are, the longer they are likely to need to react and respond

together. By introducing a careful choice of objects the interactions between them can be extended in a natural way.

- Two five-year-old children, Scott and Nadia, both with complex multiple disabilities had one of their regular sessions lying close beside each other on a shiny survival blanket. Little happened for five minutes or so, then Scott rolled over and touched Nadia. She replied by putting her leg over his leg. Scott touched and tapped Nadia's face and hair, and then started to tap her chest. She grinned broadly and lifted her arm to his. He then vocalised close into her ear. She answered his vocalisation with a shout, and a conversation ensued. Both children were smiling and completely involved with each other.
- Annabel and Sadiq were playing with a very large inflated plastic roll filled with water. Together they co-operated to manoeuvre this upright where it fell near to Erin, who although unable to help had been watching with great interest. She vocalised her pleasure, and all three children then played together banging, squeezing and rolling the object.
- Amy, who was unable to sit independently, was playing by tapping a ladle against a resonance board. Rowan, an extremely mobile child stopped to watch, appearing fascinated with the sounds produced. Sensing Rowan's presence, Amy reached out to touch her. A brightly coloured parachute caught Rowan's attention, and she pulled the parachute over both of them. They then worked together to pull the parachute off their heads, and emerged together smiling.

What is appropriate play?

The essence of play is that it is an activity in its own right, and there is no right way to play. With an open mind and a flexible outlook, we find that through play we learn as much from the children as they do from us.

When thinking about developing exploratory play we largely focus on encouraging the child to use his hands. The emphasis in most developmental play schemes is on the child's increasing manipulative ability. However, a significant number of children with visual impairment, particularly those having multiple disabilities, are tactile defensive and will tend to avoid using their hands, particularly the sensitive inside palm. Some of these children can, however, develop very effective strategies for exploring and learning about the world, and a great deal of problem solving can take place through movement and physical interaction with the environment. Some children use their feet almost like hands, and can develop remarkable skills which enable them to gain a great deal of information about their environment.

"A significant number of children with visual impairment, particularly those having multiple disabilities, are tactile defensive"

- Lisa, an extremely tactile defensive child, who was fascinated by sounds, and also enjoyed playing with light, developed an interesting way of playing with containers. She would vocalise into different containers making different sounds. At the same time she was experimenting with the light/dark changes depending on the size and depth of the container and how far she could get her head inside the container. Lisa may not have gained a tick on a play development chart for filling and emptying, but in her way she was learning about size, volume and shape, as well as creating and extending her range of vocalisations. As she became fascinated by what she was doing she began to hold and manipulate the containers showing an interest in what was in them.
- Four-year-old Duncan used his hands very little to explore, and much of his play tended to be centred around his face, and was repetitive. However, when his shoes were removed and he was given a Zube tube, which had excellent auditory feedback when moved, his play became instantly more creative. He used both feet to hold and balance the tube, and then started to create different sounds by moving it in different ways. He was also measuring the length of the tube by sliding his feet along it, and testing the weight by trying to balance it on his feet.

Section 4

Observation and assessment

Rather than always being directly involved in play with children, the adult role should be seen as one of arranging and setting an environment that encourages independent play. It is important to think creatively, and it may be necessary to try things out until something is found that works. Although trial and error may play a part, a thorough knowledge and understanding of the child is going to be very important.

Play schemas

Like all youngsters our children play in very different ways from each other, and will show particular preferred ways of interacting with the environment, as is evident from the examples already discussed. Some of these differences are determined by the child's vision and developmental level, but careful observation also shows that there are fundamental patterns underlying the way a particular child plays. These patterns of behaviour are called "Schemas".

Schemas are fundamental to the child and are influenced both by the individual's predetermined biological development and also through the social, cultural and environmental factors that interact with that development. (Bruce 1997) It is through these methods of exploration that a very young child learns and begins to systematically apply this learning in the development of later concepts. A large number of different schemas have been identified by Bruce, and it is worth considering some of these in relation to children with a visual impairment:

- **Dab** – the movement of one object against another. This includes all kinds of hitting and banging.
- **Enclosure/enveloping** – the child likes to enclose objects, eg place them inside containers, or to cover them with blocks or pieces of material etc. In the early stages this may include covering or enclosing himself.
- **Trajectory** – this includes experimentation with vertical, horizontal and lateral slopes and planes. Importantly movement is very much involved.
- **Circulatory/rotation** – the child will show an interest in circular patterns and objects and also in rotation, rolling etc.
- **Connection** – an interest in fitting things together.
- **Transporting** – this involves the child moving an object or sets of objects from one place to another, sometimes using a truck, pram etc.
- **Position** – this involves the position of one thing relative to another, and involves concepts such as on top, under, near etc. The child may use these ideas in climbing, sliding and other gross motor play.
- **Correspondence** – the awareness of and interest in similarities between objects.

It is not essential to have a detailed knowledge of all schemas that have been identified, but an awareness of a few can provide a very useful basis for observation and analysis of children's play. Once these patterns of play have been identified we can find ways of extending and developing them. By using the child's own interests and preferred ways of learning, motivation is high and further learning more likely.

- The favourite play for Sean, a three-year-old, involved swinging objects which were hanging, and rolling balls or pushing objects along the floor to an adult who would roll them back. His play revolved around movement, largely because of the nature of his visual impairment. He had a "Trajectory schema". Slopes of all kinds were introduced, and formed an important part of his play as he became fascinated by the different speeds at which different objects moved down the slopes. Later he was given a very large tube, and he started to roll objects down the tube, being able to see their movement by putting his good eye close to the top. A lot of learning was taking place in these activities. Concepts of speed, shape, weight and size were being developed as well as a knowledge of planes and angles. By introducing a series of tubes that were different colours and different dimensions, and matching the size and colour accordingly, his concept development could be further enhanced by using his preferred way of playing.

Schemas and children with visual impairment

There are likely to be differences in the range and type of schema that children with visual impairment display. Sound will be more important than visual feedback and many schemas will tend to be body centred rather than object based. For example "dab" will feature importantly as banging, and may remain a preferred way of playing for some time. This can be developed by using elements of rhythm, pitch and sound, and extended by using ideas discussed in the previous section on Diversion.

"Enveloping" and "enclosing" will tend to involve a child with visual impairment more directly and for a longer time, and the interest for him will be in covering himself up, putting containers over his head or crawling into a box rather than enveloping and enclosing objects, which is a more visual aspect of the schema. However, careful provision of objects, shawls, scarves, crinkly or shiny paper, and a range of tins, boxes and tunnels can make this more body centred play a valuable way of learning. Position and orientation may well be learned through whole body experience, in which the child puts himself in different positions on furniture and play equipment rather than using objects.

- Rhona, a four-year-old with limited vision, was very tactile defensive. Her play tended to be body centred and she spent much of her time creating different sounds through banging surfaces. She showed no interest in filling and emptying activities or container play, and generally disliked using her hands. However, when the adult playfully slipped different containers on to her feet and later her hands, Rhona became amused and interested. She began to be aware of differences in the containers, and through experimentation started to select the appropriate size and shape to fit her hands, feet or fingers. In the process she learned about removing lids. She then created different sounds by clapping her hands and kicking her feet together, still covered by the containers. She was demonstrating an "enclosure" schema in a way that was meaningful to her and also a development of her "dab" schema.

Although there is an element of repetitive play in any schema it is at the same time creative, since it is generalised and ultimately transformed. This is not true of the repetitive, obsessive behaviour that characterises the play of some children. It is likely, however, that this play as well had its roots in an early schema, but has failed to develop. The challenge is to find ways of using this preferred play pattern so that it can be explored and extended.

Observing children's play

Observation should be ongoing and form the basis of our planning of children's programmes. It is necessary to determine what their likes and dislikes are, when they are most alert and aware, and to assess their developmental level.

When observing children's play, it is important to keep flexible and to avoid focusing rigidly on specific exploratory and manipulative skills that the child "ought" to be demonstrating. Look carefully at what the child is doing, and try to work out what he is getting out of it.

Observation can be done in different ways for different reasons.

- Set time aside for an open ended observation session each week or fortnight, and simply record what the child is doing. Share the findings with the rest of the staff team.
- This can be extended to include comparative observations as to how the child's play is affected by his situation and environment.

  For example, how the child plays:

  - in a noisy or quiet room
  - in a group or on his own
  - with or without an adult being present
- Observation can be done for a specific reason, for example to assess whether the child is visually reaching or has developed intentional searching.

Whatever the purpose of the observation, the use of video recording is invaluable. Careful analysis of recordings may reveal that play which outwardly seems repetitive or stereotyped has a purpose for the child.

Observing independent play

When considering each section below, keep in mind:

- how vision is used
- which other senses are being used
- which senses are being used together eg auditory and tactile.

During observation of the child's independent play in a natural situation, look out for the following:

Active exploration

- Intentional/repeated movements
- Search techniques in surrounding space
- Exploration/manipulation of objects eg with one hand, both hands, other body parts
- Awareness of cause and effect
- Any preference shown for specific objects or types of object
- Early play schema eg hitting, banging. Later play schema eg filling and emptying, opening and closing
- Combining two objects in play
- Searching for objects when child is not in direct physical contact with them
- Using objects purposefully/creatively
- Using objects appropriately eg bouncing ball
- Awareness of objects' functions.

Stereotype behaviour and play

- Does the stereotype behaviour change in different environments, or when things happen around the child?
- Does the child use the object only in relation to the body?
- Does the stereotype play follow a constant pattern or is there a variation in the way the object is used?

Play observation form

Name of child: Date:

Observer's name:

Observe the child playing alone in a familiar, natural environment. Write below an account of what the child is doing using the "Observing independent play" criteria as a guide:

Chapter 6

The learning environment

"It is very difficult to make the best use of a learner's thinking skills in an environment which is preventing them from exercising freedom of choice, learning from mistakes and solving problems."
(Collis and Lacey 1996)

In many ways, this entire book is about the learning environment. The key to children's development is to create an environment that encourages active learning. In order to do this we must provide a secure environment in which the child feels safe and with which he wants to interact. The child needs to be able to make sense of his experiences and have some control over what will happen and what is happening. Only then will he realise his role as an active, communicative person. In considering the learning environment, we must look not only at the physical, but also at the social environment.

We have emphasised how much thought must be given to compensating for lack of visual information. This information allows the sighted child to predict what is about to happen and to learn certain skills simply by observing how others do it. He absorbs much of this information incidentally without his carers being aware of it. In considering the needs of children with visual impairment we must make ourselves aware of what it is that the sighted child learns and do our best to provide predictability and hands on experiences to compensate. This is not as straightforward as it seems. Some children have difficulties in processing more than one piece of information at a time, for example, they may have to concentrate very hard on looking, so that any auditory information may not at that moment be heeded.

Careful observation of the child will help to ascertain if this is the case, and the environment will have to be adapted to take account of it. In structuring the environment to reflect the learning style of the child, we look to build on his experiences, support and challenge him and thereby gradually help him to extend his skills.

Structuring the environment

Routine

Routine is all-important as it aids understanding of the environment and gives a feeling of order and security. From routine comes the ability to anticipate and feel in control. "Control" may sound like a contradiction in terms when considering a fixed routine, but if events occur in random order then there is no security. We are all governed by routine, such as at mealtimes pudding always comes after the first course! Routine cuts out confusion and helps the child to make sense of what is happening.

Sometimes the curriculum dictates routine and we must ensure that this remains in the child's interests. It is important to keep the balance right between the individual and the curriculum. In a busy classroom, staff can find themselves having to move on from one activity to another with little time to allow the children to participate in this process. Flexibility is the key. It may not be appropriate for a child to follow all timetabled activities or perhaps he needs extra time to prepare for the next activity.

"We are all governed by routine, such as at mealtimes pudding always comes after the first course!"

Routine does not have to limit choice. It can be built into the daily schedule. Some children can be given a free choice of activity, where others might be involved in a work session learning how to make choices. Older children may be encouraged to choose what order they would like to do their individual work in.

Routine within activities such as a sequence for hand washing can also be important. This involves using the same language and sequence of actions each time an activity is carried out, so that the child may familiarise himself with the expectations of that task. Repetition and context can be essential, since children with visual impairment do not readily learn through incidental observation.

As children develop they have to learn that routine can change. Some children may become very dependent on routine and therefore quite distressed when events do not happen to order. This is an important lesson to learn and children should be given plenty of opportunity to anticipate when things are about to change. Games can be played which incorporate the unpredictable but in a fun way, so that the child can learn that the unexpected does happen and that when it does, it is something they can cope with.

When considering routine, we have to guard against "learned passivity", that is, children believing that things will happen without their having to do anything about it. At a certain stage, we can begin to give the children some responsibility for the routine. An example of this might be circle time. Once it is established what happens, which songs are sung and when, then the teacher can take a back seat. If she pauses long enough between one activity and the next, one child may be encouraged to start the song which follows. Another child may rock to indicate that he wants to be sung to.

Flexibility within the learning environment is all-important but we can afford to be flexible only when we have a good basic routine. It forms the firm foundation on which to build an interactive style of teaching and learning.

Physical surroundings
The physical environment should be carefully considered and adapted for children who are visually impaired. This kind of adaptation provides predictability.

Mobility trails which provide clues as to where you are in the building can be imaginatively put together. There are many possibilities. Some examples are:

- different floor surfaces
- colour coding
- different shaped handrails
- music in the dining room at a certain time of day.

When planning a room, it is important to ensure that things are kept in the same place and that clutter is avoided both on the floor and on shelves and surfaces. This cuts down on visual confusion and makes it easier for the child to search. Lighting and contrast should be carefully thought about. Furniture should be kept, as far as possible, in the same place. Moving it even slightly can cause difficulties for the non-sighted child, who may guide himself by remembering the distance from one place to another.

We must be aware of the child's preferences for large or small spaces and his position in the room. A child in a wheelchair cannot control the distance between himself and others or choose who he wants to sit beside, unless adults are sensitive to his needs. Many of our younger children prefer to play in small enclosed spaces, so that they can feel the edges and know exactly where things are and where this space begins and ends. Other children prefer lots of space around them, as they may feel nervous when in close proximity to others.

Making sense of sound
Lack of vision affects how hearing is used and understood. Some children will have difficulties in making sense of what they hear if they cannot identify the source of the sound. It is necessary to provide a quiet environment and to bring sounds close enough to the child to help him to understand how each sound is made. A number of children are mistakenly diagnosed as having a hearing impairment. In the early years they may appear not to be reacting to sounds. However, it may be that their listening skills have not developed and they are unable to make sense of what they hear. A sound, once it is understood, can be responded to appropriately by the child. In some cases, these responses will take time to elicit.

A quiet environment is very important for children who are relying on hearing to know what is going on around them. Background music or television can be a major distraction, especially for those children who may only be able to concentrate on either listening or looking, but not both at once. Some may also have difficulty filtering out those sounds that are of less consequence for them. Children with a hearing impairment may have the same need for a quiet environment to enable them to use their residual hearing.

The social environment

People can be the most important aspect of the environment for children. Good relationships provide security and a child's ability to learn grows out of his developing self-awareness and self-esteem. This is gained through building relationships of trust. The need for sensitivity to the child's signals and consistent responses from the adults must always be emphasised.

The child should be allowed to maintain control during routine tasks, such as changing time or when being wheeled down the corridor. It is important to help the child to anticipate when the cold wipe is coming or which corner will be turned next, through the use of environmental clues, signs and speech. Care activities involving washing and dressing, offer invaluable opportunities for interactive exchanges.

Children with physical disabilities may need to be taught coactively, for example, when learning to eat. The adult may need to hold the child's hand or wrist to guide the spoon to his mouth. In order to avoid "learned passivity", the adult must work interactively with the child. The adult is guiding the hand and working coactively on the process of eating, but is still following the child's lead. That is she must at all times be reading his signals and be aware of his preferences for touch, speed, temperature etc. She must be ready to withdraw support when it is no longer needed. This may vary from day to day. The aim is to promote independence, not dependence.

"The aim is to promote independence, not dependence"

Group work

Careful attention to participation in groups is essential. If a child with a visual impairment has no speech he will have difficulties communicating at a distance. Even if he can understand what is being said from across the room, he cannot return that communication unless the recipient is close. He needs to know that he has the listener's attention. A young baby would not be spoken to from a distance but would be given close contact. Children with multiple disabilities will require this closeness in order to help them to understand speech and realise it is directed at them. A balance needs to be struck between the visual and developmental needs of children and the opportunities provided by contact with peers and the sharing of activities. This has obvious implications for group work.

It is therefore necessary to consider:

- the size of the group
- where each child sits
- the optimum signing position
- the time required for each child to respond
- where each adult sits
- how best to involve each individual.

Group work may involve children in parallel activities, but with careful thought it is possible to build situations wherein the children are made aware of each other and can interact. Group work involves different experiences from those involved in a one-to-one session. Sharing, waiting and helping are important in building self-esteem and social awareness. The act of singing songs together can provide an atmosphere of fun and a feeling of community. Imaginative use of switches or experiential signifiers can foster peer interaction.

Behavioural needs

Careful consideration of the environment can do much to address the child's feelings of emotional well-being. Some children can be very sensitive to their surroundings. There may be triggers in the environment, which are not immediately obvious to the adults, but which can cause some distress to the child. It can be useful to do an environmental "audit" by observing the child before and during changes of behaviour to try to work out what were the triggers for that behaviour, for example, dinner ladies in white coats may have brought back early memories of hospital visits. It might be noise, crowds, changing from one activity to another, lack of warning that an activity is about to end, group situations etc. This behaviour is the child's way of communicating his frustrations and may often be caused by a feeling of lack of control over his environment.

Creating a need to communicate

Provide choices within everyday activities

The possibilities are endless eg "Who wants to go first? Which soap do you want? What do you want to do at break time? Shall we start with the story or the songs?" Using switches is a good way of creating possibilities for choice making.

Hand over control

Children should be allowed, as far as possible, to use their independence and take control of their own routine. For example, when a cuckoo clock announces that it is break time, the children may be allowed to decide for themselves that they should move to the break table, rather than waiting to be told.

Make opportunities for social interaction and co-operation within the daily routine

Carrying out the daily routine will provide many opportunities for interaction such as changing pads, preparing swimming bags, laying the table, putting out chairs etc.

Do a "habit" check

We can very quickly fall into habits where we always do things the same way. This can eliminate the need for communication. Do a "habit" check on the day. Is it time to slightly alter the break time routine in order to create new opportunities?

Avoid too much question and answer

Care should be taken to avoid over use of questions. The child knows there is a right and a wrong answer and may feel under pressure. Where possible keep things open-ended. Provide comments on the topic under discussion and keep questions contingent on what the child has just communicated. When involved in a play situation with the child, comment, where appropriate, on what he is doing and be observant for what he is experiencing at that time. For example, when the child is playing with an object, he is likely to be experiencing its weight or texture; whether it feels warm or cool to the touch, rather than how it "looks".

Create the unexpected
Not doing what is expected, is a good way to prompt communication. The child's chair, for example, is not in the usual place, bananas are not on the menu, the teacher "forgets" to sing the usual song. Alternatively, the child may pull the adult by the sleeve to his coat peg even when he is quite capable of indicating that he wants to go out. In this case the teacher can pretend to put the coat on herself, turning it into a game. In this way she is challenging the child in a non-threatening way, to express himself to the best of his abilities. The important thing is knowing when to do these things. It is a matter of judgement of the child's ability and developmental level. If the child is pushed too soon then he may be put off, if it is left too long then dependency or passivity habits will have formed.

Direct experience of the wider physical environment
There is nothing to compensate for real life experiences. If the child has not experienced the world at first hand, then there is nothing to communicate about. He may not pick up as much information from books and TV as other children might. Trips out into the community are a vital part of the children's education, so that they can experience shops, traffic, modes of transport, meeting people, weather conditions and so on. Reliving the experiences through conversation and the use of "experience books" (books made up with found objects from the trip), can do much to develop memory and imagination.

"There is nothing to compensate for real life experiences"

Giving significance to the environment

Objects in context

The idea that objects can be a powerful means of conveying information is an accepted part of everyday communication, and one that is understood even by very young children. The young child seeing his mother lift her coat off the peg immediately understands that he will shortly be going outside. Likewise if he sees his mother going to the cupboard at a particular time of day he will assume that she is going to get the cup out for his drink. He knows from experience that this is where his cup is kept, and cup signifies drink. The child learns about the significance of the object by seeing it used in context. For children with a visual impairment, an understanding of the significance of objects will take much longer to establish. Use of objects as signifiers will need to be carefully thought about. It is necessary to consider ways of developing the children's contextual understanding. We must try to recreate the same immediate access to information that is available to the sighted child.

Objects of reference

Objects of reference are objects that have meanings assigned to them. They can be used to represent places, activities, times, people and qualifiers such as "yes", "no", "more" and "finished". They were developed during the 1960s for a group of deafblind children in the Netherlands and are now a well-established practice in the education of deafblind children in the UK. Increasingly they are being used in schools for children with visual impairment, children with learning and physical disabilities, and children within the autistic spectrum. (Ockelford 2002).

"Objects of reference have a recognised value in assisting and encouraging communication"

Objects of reference have a recognised value in assisting and encouraging communication, acting as an aid to memory and concentration, and encouraging an understanding of language and of the environment. They can provide children with a feeling of emotional well-being by helping them to understand and predict events taking place around them. The use of referent objects, as with all of the ideas in this book, depends on our knowledge of the child's individual needs and his developmental stage.

Children at the earliest stages of development

Children with multiple disabilities need the same support for their communication and emotional development as children at a more advanced level, but may not be able to derive the same benefit from objects of reference since they will be operating at a pre-symbolic stage of communication. For children at this stage, "experiential signifiers" should be introduced to give them a means of understanding and predicting events in their environment, as well as encouraging their symbolic understanding and acting as an aid to memory. We may then at a later stage be able to consider the use of objects of reference once we are certain that the children are developmentally ready.

Experiential signifiers

The basic idea of a significant object should be broadened. We should think in terms of contextual clues, and signifying experiences, that are immediate and involving.

These experiential signifiers should:

- be multi-sensory, using sound, tactile experience and smell in context
- involve movement or movement sequences
- include music, songs, jingle and rhythm
- have interactive sequences with an adult.

They should be individualised to suit a child, perhaps fitting in with his particular preferences or the sensory feedback that they provide. An object could form part of the experience, and might eventually become the referent to signify that particular event.

- An example concerns a boy, who found it very difficult to move from one activity to another, and it was at this time that challenging behaviour occurred. It was decided to give him a ball before he went to PE, which then became a part of an interactive bouncing game with his helper. In this way, he would proceed quite happily to the activity. The object, in the context of the game, was more easily understood. In time the interactive routine was faded out, and the object then used on its own to signify the event. A similar idea used with the same boy was the introduction of a game played with bells on the way to music activities.

Some more examples:

- **Days of the week:** Different sound making objects, sounds, action rhymes (eg Monday clap) for different days of the week.
- **Rooms and areas:** Bead curtains and other hanging objects which the child automatically feels/hears when entering the room. Squeaking pads, different floor surfaces, aroma diffusers, a particular mat or fabric to signify the physio area.
- **Activities:** Different tactile surfaces on chairs, tables. Different sounds, music, instruments or songs to denote particular activities, eg rhythms with accompanying jingles before or on the way to an activity. These may be stamped, clapped, played on an instrument, eg "Clackety clack clackety clack, Now it's time to get our snack!" Smell signifiers are best when they arise naturally in context – eg the smell of dinner.
- **Movement activities:** Such as swinging arms before music, bouncing the buggy on the way to PE.

Some of these ideas will be more suitable than others for individual children, and some will be easier to use than others. What they have in common is their immediacy and involvement. Because the child is truly a part of the experience, the signifiers hold more meaning for him, and so have a positive impact, in terms of developing anticipation, recognition and understanding.

Points to consider prior to introducing objects of reference

Concept development

- **Object permanence:** Does the child have a understanding of object permanence? Has he had enough experience of playing with and exploring objects?
- **Shared attention/joint reference:** Does the child understand the concept of shared attention/joint reference? Is he able to appreciate that an object means the same to another person as to himself? Is he giving, offering or indicating objects in his environment?

- **Symbolic understanding:** Is the child at a level where he is capable of attaching significance to an object other than that of its actual use? For example could a cup stand for snack, or would a child only be able to see it as something that contains a drink for immediate consumption? In other words does the child have symbolic understanding?

Sensory and physical skills

- What sensory feedback is the child gaining from the object presented?
- Does his functional vision allow him to perceive the key features adequately?
- How do his hands function? For example – do his hands tend to be closed and tight? Is he tactile defensive? Is he able to gain any tactile information through his hands?

Relevance of objects as signifiers

- **How relevant is the object we have chosen to the child's experience?**
  With a child, for example, who does not see and cannot handle a cup or a spoon, how meaningful are these objects going to be as representative of snack or mealtime?
  An armband popularly used as a swimming signifier may have no relevance when given to a child shortly before going swimming even if he uses one. His experience of swimming is likely to be the smell and sounds of his surroundings, and most importantly the feel of the water. The armband may only be perceived as a tactile experience along and round his arm. Have we chosen the object for the child through observing his natural interest in the objects associated with the activity?

The use of objects of reference

Receptive

Objects of reference have been used to help children to understand language and context by acting as anticipatory cues for things that are about to happen. They are used as mobility clues and as a way of recognising people and places. They have great value for children at a more advanced level of development or those that have specific communication needs. In the first instance objects of reference are used in a concrete way so that the object used is an integral part of the activity it represents, for example, as a signifier for lunch, the child is given the bowl he uses just prior to going to the table. The child who is beginning to develop understanding of situations can readily understand this.

As the child's understanding grows, objects used can become less concrete, more symbolic, and gradually removed from context. For example, a particular coat used to signify "outside" could be reduced and made more abstract by using coat buttons or a zip mounted on card. At a later stage objects that have no shared features with the referent and are purely abstract can be used such as different tactile shapes used outside different rooms to identify them. At this stage the learner will need to understand the purely symbolic nature of the shape.

Expressive
Objects of reference are used by children as a way of indicating need and expressing choices and feelings. They may use Choice Boards with sets of signifying objects, or parts of objects from which the child can choose their favoured activities. These have been successful with some children, and have provided a useful bridge to a more symbolic means of communication. To be relevant and useful a selection would have to be always available. Signing, by contrast, is immediate and under the child's own control.

Body language, gesture and sign should always be used by the adult at the same time as objects are presented to the child. These different methods of building communication are not mutually exclusive.

Pre-literacy
Objects of reference have been successfully used by those with symbolic understanding and good tactile discrimination, as a way of developing pre-literacy skills. In this case the referent acts as a picture would for a sighted child. For example, tactile calendars (where a number of objects of reference which represent the child's daily activities are put in a series of boxes or are hung on a row of pegs) can encourage a child to build up sequencing skills, act as an aid to memory and help establish an idea of time and routine events.

As a part of the communicative process objects of reference can lead some children towards the development of literacy skills, using Moon or braille. The developmental stage of the child is very important as a key to their continuing and successful use and this must be approached very carefully taking into account the communicative skill of each individual child. (Park 2002) The use of experiential signifiers as described above will form the very earliest stage of the communicative process, and will precede the use of objects of reference, paving the way for their eventual use, if and when the child is ready.

Chapter 7

Observation of non-verbal communication

"Much of what happens in an interaction is in the realms of thoughts, feelings, subtle signalling and supposition. Over time... strands of apparently intuitive data may come together to make a meaningful whole."
(Hewett and Nind 1993)

A very effective method of observation is the use of video, which enables a detailed look at what and how a child is communicating in certain interactive or everyday situations. It may only provide a snapshot of a particular situation on one particular day, but much can be learnt from in-depth analysis of a child's non-verbal behaviour through careful study of the video.

The purpose of the form of observation outlined in this chapter, is to provide as open-ended a structure as possible. The observer is provided with a means to describe exactly what the child is doing, without being restricted by the type of questions asked. One of the drawbacks of using some published assessment schedules is that they are based on the development of sighted children and can limit the scope for observation. For example, an assessment form might ask the question – does the child use a pointing gesture to indicate what he wants? The answer for many children with a visual impairment will be "no". However this does not mean that they do not draw attention to things that they want. One child might stand beside the desired object and rock more vigorously; another might take the adult's hand to the object.

In the terms of the standardised assessment form, however, the child is marked with a negative. Nonetheless, some kind of structure is required as a way of organising the observer's thoughts and giving pointers for development.

Video is a particularly useful tool to use with children whose methods of communication may be idiosyncratic. It gives the observer a chance to review what has happened and to look in greater depth at what the child is trying to convey. Some may be expressing themselves with intent, but are not fully aware that the message has to be conveyed to another. This means that the situation is still dependent on close observation on the part of the adult and skilled interpretation of its meaning. Video can be very helpful in allowing the observer to pick up on missed signals within communication.

When using video, the adult working with the child must remain very observant of her own behaviour within the situation that is being analysed. Very few of the currently available observation schedules involve any emphasis on the adult's behaviour. The spotlight is very much on the child and what he is doing. However, the context in which observations are carried out will invariably affect the outcome. This means not only the physical setting but also the interactive style of the adult partner and the demands and constraints of the activity in which the child is engaged. Thus it is essential for the adults involved in the observed situation to be extremely aware of the effect of their actions on the child.

"Video is a particularly useful tool to use with children whose methods of communication may be idiosyncratic. It gives the observer a chance to review what has happened and to look in greater depth at what the child is trying to convey"

The process of video analysis can be very time consuming, especially for staff in a busy school. However, its occasional use serves to fine tune people's observations in the everyday situation. Looking in detail at aspects of one's own behaviour and that of the child serves to make one more self-aware and more in touch with what to look for in day to day communication with the child. Through careful analysis, we can look for patterns and meanings. The emphasis on the various forms of expression and the functions of language or communication, provides a way of structuring but not limiting observation. It is important always to look outside the structure to see what else is happening.

It is invaluable to make the observations with several members of a team working together so that people can learn from each other's experiences and interpretations. The need for objectivity is important and this can be offset by the more personal accounts given in the daily written records of what the child has been doing.

Guidelines for using the observation sheet

The functions of language or communication

The functions of language or communication are written down the left-hand side of the observation sheet. Each piece of behaviour should be recorded under one of these categories, but keep an open mind and record anything which does not seem to fit under "other" – these are not rules but guidelines. Recording these categories will require interpretation, on the part of the observer, of the child's intentions. Be as objective as possible.

- **Attention:** Attention refers to the child's attempts to draw attention to himself.
- **Request:** The child requests an object, person or action by reaching towards, pointing, miming or otherwise indicating his desire.
- **Give:** The child gives an object to the adult.
- **Rejection:** The child expresses his dislike or rejection of an object, person or action.
- **Finish:** Refers to the child's desire for the interaction or activity to end.
- **Pleasure:** The child's expressions of pleasure or recognition of a favourite person or object.
- **Conversation:** Refers to the child's attempts to maintain a shared interaction by turn-taking.
- **Feelings:** Any expressions of feelings other than like or dislike.
- **Imitation:** Refers to attempts by the child to imitate actions or sounds initiated by the adult.
- **Other:** Any other behaviours which do not fit into the above categories.

Categories for describing non-verbal behaviour

These categories have been described as "message related movements" or "channels" of communication. They should be used in the description of what the child did.

- **Whole body movement:** a whole body gesture
- **Gesture:** a gesture can be made with any body part (This section may include personal or cultural gestures such as waving goodbye)
- **Body posture:** turning away, leaning towards etc
- **Eye contact:** a child with peripheral vision may make eye contact with his face turned away
- **Facial expression:** anger, fear, surprise, sadness etc
- **Proxemics:** use of personal space eg sitting near to
- **Touch:** making contact to convey a message
- **Vocalisation:** this section may include sounds or vocalisations.

Observation procedure

Watch the video through, then return to the beginning and run through, stopping the video after each segment of behaviour observed. It will be necessary to stop and start the video or rewind in order to fully record the interaction. It is unrealistic to try to write down absolutely everything. Try to pick out the most significant parts of the interaction. Record as fully and as objectively as you can what is actually happening.

Using Form 1, record these segments in the box which relates to the function of language or communication observed. The boxes do not denote any particular length of time. Record each segment in a linear fashion across the page so as to show the order in which things happened. Use another sheet if necessary. Write the initials of the type of behaviour observed (eg PG for Personal Gesture), then describe what actually occurred. This gives a picture of what the child did and why. The "why" relates to which function of language or communication the child was observed to be using.

Use Form 2 as a way of summarising each segment of behaviour observed. Look first for the function of language expressed, then move down the list, ticking each form of non-verbal behaviour which was used in that expression. When completed, this sheet gives a picture of the spread of behaviours used.

Video observation Form 1

Non-verbal behaviour

● Whole body movement ● Gesture ● Body posture ● Eye contact (eye pointing)
● Facial expression ● Proxemics ● Touch ● Vocalisation

Attention	
Request	
Give	
Rejection	
Finish	
Pleasure	
Conversation	
Feelings	
Imitation	
Other	

Video observation Form 2

	Whole body move-ment	Gesture	Body posture	Eye contact (eye pointing)	Facial expres-sion	Proxem-ics	Touch	Vocalis-ation
Attention								
Request								
Give								
Rejection								
Finish								
Pleasure								
Conversation								
Feelings								
Imitation								
Other								

Observation of the adult's approach

Successful interaction will be dependent on the adult's skill, open-mindedness and knowledge of the child. She will need to adapt her responses and reactions to the child's verbal and non-verbal signals, some of which may be hard to pick up and interpret. Her knowledge of the child and of any sensory loss he may have should inform her approach, her use of touch and the language she uses. Pace and timing are vital to a successful interaction and the extent to which a child is actively involved will depend on the adult's ability to monitor the child's reactions and allow him time to respond.

Form 3 looks at these communication skills in more detail and acts as a guide that will enable members of staff to become more aware of the effect their approach can have on the behaviour of the child they are with.

The form should be used alongside a video clip of an interactive situation and the points outlined under the various headings should act as the basis for analysis and discussion. The same piece of video can be used for both observations ie that of the child and that of the adult, using the different forms.

Video observation Form 3

The approach and behaviour of the adult partner

Physical approach

- Distance between the partners – is this acceptable and suitable?
- Position and orientation – turning towards, aligning head and adapting to the position of the child.
- Ability to be still.
- How the adult partner's movements reflect or tune in with the child's.

Multi-sensory approach

- Does the adult partner take account of the child's sensory impairment?
- Note how touch, sound, movement and vocalisation are used:
  – to attract attention
  – to maintain contact
  – to inform child of what is going to happen
  – to back up spoken language.
- Is the touch used acceptable to the child?

Use of spoken language

- Is the language used:
  – simple, clear and directed to the child?
  – relevant to what is happening?
  – relevant to the child's understanding?
- Is the language used to reflect the child's feelings?
- Note how questions are used.
- Is sign used alongside speech? If so, how?

Interactive skills

- Note the pace and timing of the interaction. Is it calm and unhurried? Does it flow? Are pauses and silences allowed?
- Does the adult partner monitor the child's responses and change interaction to suit?
- Note how the adult partner responds to non-verbal signals, eg through movement, touch, vocalisation, speech or imitation.
- Does the adult partner follow the child's lead?
- Is the child given the opportunity to initiate and make choices?
- Does the adult partner promote the child's independence?

The Canaan Barrie signs

Core vocabulary

People and places

Weather

Food and drink

Concepts

Time

Days of the week

Objects

Actions

Questions

Feelings

Personal

Core Vocabulary

Wash

Mime washing hands, exaggerate sound

Bath

"Wash" sign then rub upper chest

Shower

"Wash" sign then drum fingers on top of head

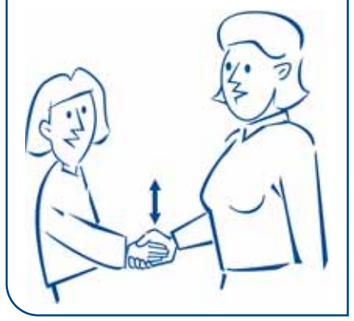
Brush hair

Rub hair between fingers and pull along length of hair

Dress/get dressed

Draw fists down body from shoulders down to waist.
Undress – Draw fists up body from waist to shoulders

Hello



Shake right hand of child

Goodbye

Touch fingertips of child and wave

Up/stand up

Rub hand up child's upper arm then flick fingers against thumb, up high

Down/sit down

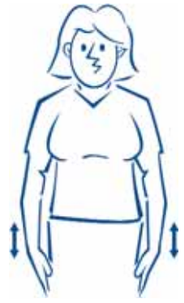
Rub hand down child's upper arm, then flick fingers against thumb, down low

Core Vocabulary

Lie down

Rub hand down child's back and flick fingers down low

Toilet



Rub hips in downward direction, exaggerate sound

Bed

Clap hands beside ear then rest head on hands

Goodnight

Rub two fingers down forehead and nose

Sleep

Use thumb and index finger, open and close them in front of eyes, hands to side of face

Sad/crying

Rub cheeks in downwards strokes

Good

A "positive" sign, tap your chest twice with flat hand.
Also: **like/want/happy**

Don't want/don't like

A "negative" sign, child pushes own hand away from body, or adult gently pushes on child's shoulder
Also: **don't want/don't like**

Ill/poorly

Rub forehead in circular motion, then on part of body affected

Medicine

Hold little finger inside fist of other hand

Stop

One loud clap

Work

Tap side of one hand across side of the other hand, twice

Mummy

Tap fingers on palm of opposite hand, twice

Daddy

Tap on either side of chin with fingertips, twice

School

Tap fists together twice, thumbs pointing outwards

Play

Flap hands in air near child's face (create air currents) or child flaps hands near own face

Again

Tap fist twice on opposite upper arm

More

Bang fist twice on table top

Finished

Tap flat hand on back of other hand twice with palms facing downward towards floor

Go

Rub back of fingers along arm, then gesture away from body

Come

Beckon up towards shoulder, tap shoulder twice

Me/my

Place palm of hand on chest

You/your

Place palm of hand on child's chest

PE

Tap shoulders twice, fast

Swimming

Mime swimming action (like doggy paddle) near child's face

Shopping

Rub thumb on fingertips, near child's ear

Riding

Slap side of hands up and down, against each other

Massage

Rub back of hand with palm of other hand, twice

Friend

Slap palm on back of opposite hand with palms held towards body, then shake in front of own body

Home

"Clap" one hand over the back of the other, then bring both towards chest and tap chest once

Birthday

Tap shoulder with opposite fist twice

Drink

Make "fishy" noise (ie open and close mouth noisily) and tap cupped hand on upper lip twice

Eat

Say "mmm" and tap mouth twice

Music

Clap hands at shoulder height and sway arms from side to side, keeping palms together

Song/singing

Clap hands twice

Dance

Snap fingers and twist upper body from side to side

Walk

Stamp feet

Bus

Flat palm, draw circle on palm with side of fist

Outing/out

Bang fist in palm then gesture with thumb over shoulder

Morning

Fists with thumbs out, draw from chest out towards shoulders

Afternoon

Tap chin twice with first and second fingers

Evening

Cross arms across chest and pat shoulders twice

Please

Flick fingers under chin and bring hand forward in short gesture

Thank you

Tap chin once and bring hand forward in longer gesture

Physio

Stroke hand down opposite arm then grip wrist and pull gently across body

Core Vocabulary

Buggy/wheelchair

Draw fingertips across stomach until hands meet in the middle, as if putting on belt

People and places

Man

Stroke chin twice with thumb and fingers either side

Woman/lady

Stroke side of face twice

Nurse

Draw fist across forehead once

Doctor

Tap side of neck twice

Bedroom

Sign **bed** then **room**

Play room

Sign **play** then **room**

Dining room

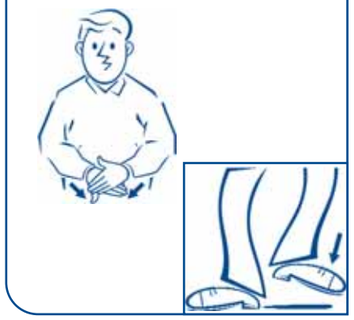
Sign **eat** then **room**

Class room

Sign **school** then **room**

People and places

Bathroom



Sign **wash** then **room**

Weather

Sun

Flap hand in front of eyes

Light

Tap side of eye twice

Rain

Dribble or drum fingers lightly on back of hand

Snow

Sign **cold** then **rain**

Wind

Blow and wave hand in front of mouth

Food and drink

Hot

Wipe hand across forehead once

Cold

Rub both hands on opposite upper arms, twice

Bread

With side of hand in palm of other hand, make slicing movement

Food and drink

Apple

Tap cheek twice with fist

Orange

Tap fingertips into palm of same hand, in squeezing action

Banana

Stroke hand down opposite fist three times, moving round hand

Toast

Tap side of hand in palm of other hand, then draw palm across lower palm away from body

Butter

Stroke fingertips, back and forth as if spreading butter

Sweet/pudding

Tap teeth with fingertip or fingertips twice

Cake

Tap back of hand with fist once

Biscuit

Tap elbow twice

Water

Rub hand down neck from chin to upper chest

Food and drink

Milk

Rub fist twice on opposite side of body near shoulder

Yoghurt

Brush fingertips across chin

Cheese

Tap fist on opposite forearm once

Concepts

Crisps

Rub thumb against tips of other four fingers

Quiet/soft (sound)

Put finger to mouth and make "sh" sound

Loud

Cup both hands over ears

Slow

Draw fingertips up inner arm slowly

Quick/fast

Clap hands several times quickly

Soft (feel)

Press fingers gently onto cheek

Concepts

Hard (feel)

Tap one fist on kneecap once

Big

Using both hands, draw fingertips across upper chest beyond body

Little

Using both hands, draw fingertips across upper chest (very small movements)

Wet

Dribble or drum fingers lightly (as in **rain** sign) on part of body which is wet. For toileting, if child is **wet** make wet sign on hip

Dry

Circular movement with palm of hand on object or part of body which is dry. For toileting, make circular movement on one hip

Same

Point first finger of both hands forwards, bring side of hands together, tap once

Time

Clean

Sweep palm of one hand along palm of opposite hand quickly, several times

Dirty

Make two fists, cross hands at wrist and knock wrists together, twice

Today

Tap lower chest twice at waist level with side of both hands

Time

Tomorrow

With fingertip touch cheek and gesture outwards

Yesterday

With fingertips touch cheek and then shoulder

After

Brush front of wrist with fingertips outwards and away from body

Now

Tap fingertips (cupped hand) on opposite flat palm, once

Time

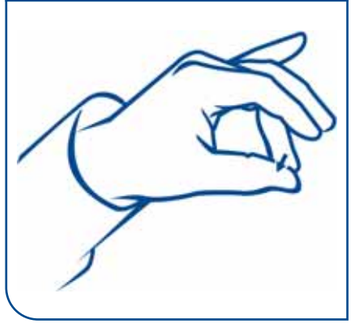
Tap back of opposite wrist once with fingertips

Days of the week

Monday

Tap index finger twice against thumb of same hand, or tap index finger twice with opposite hand

Tuesday

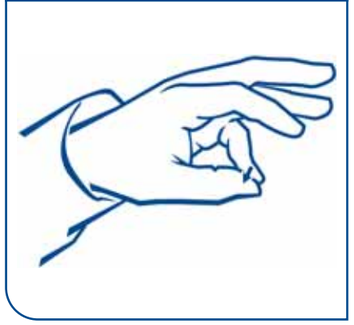


Tap middle finger twice against thumb of same hand, or tap middle finger twice with opposite hand

Wednesday

Tap ring finger twice against thumb of same hand, or tap ring finger twice with opposite hand

Thursday



Tap little finger twice against thumb of same hand, or tap little finger twice with opposite hand

Days of the week

Friday

Run fingers down cheek and tap chin twice

Saturday

Tap under chin twice with back of hand

Sunday

Tap chest twice with side of hand in upright position

Objects

Door

Arm held away from body, elbow flexed, push against it with other hand (making slapping sound) and move both away from body

Sand

Flick/brush hand on opposite shoulder twice

Paper

Make two fists then tap knuckles against each other twice

Flower

Hold fingertips under nose and sniff

Bird

Open and close thumb and first finger like a beak, holding hand close to mouth

Dog

Pat calf twice

Objects

Tape

Tap fist under ear twice

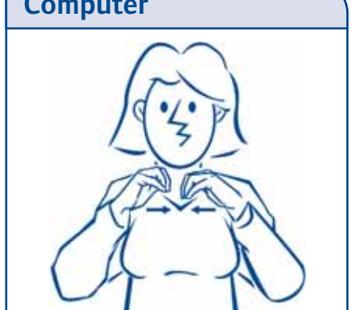
Television

With fingertips, stroke from eye to ear.
Video: sign **television** then **tape**

Telephone

Put fist to cheek with thumb extended – tap once and say "phone"

Computer

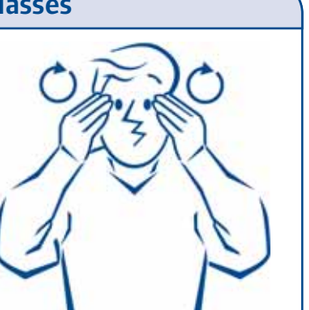


Cup hands in C shape, palms pointing inwards, tap fingertips together three times

Money

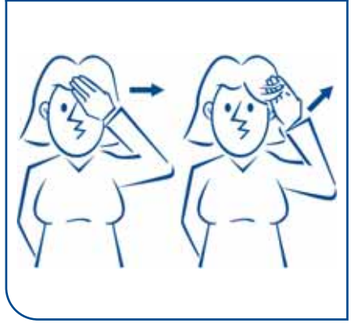
Rub thumb across fingertips of same hand, one hand only

Glasses



Run fingers round eyebrows and under the eyes, in circular motion from nose outwards, both hands

Hairdryer



Sign **hot** then sweep fingers through hair in an upward direction

Drum

Mime playing on drum on upper thigh, one hand only

Bells

Shake earlobe between thumb and forefinger a few times

Actions

To see/look

Tap side of eye twice with fingertips and indicate direction, if appropriate

To hear/listen

Press palm against ear

To tell

Tap finger on side of mouth and gesture forwards

To help

Closed fist on palm of other hand – move both hands upwards and out

To wait

With palms facing down, tap one palm on back of other hand, held in front of body, then push down

To make/do

Tap fist on top of other fist once

The signs for run, kick, dig, jump, and climb can all be communicated by miming the action

To bring

Make **come** sign with both hands

To feel/touch

With palm of hand stroke down opposite forearm twice

Actions

To give

Place both hands at hip level, palms up, move both hands out and forwards from the body

To cook/bake

Make circle with one arm, by putting hand on hip. Run other hand round in a circle, inside opposite arm

Questions

When?

Tap back of opposite wrist with fingertips twice

Where?

Place open hands at side of body, palms up, circle forward, out and back

Who?

Stroke palm upwards over forehead and slightly out

What?

Tap first finger once lightly on side of head and gesture outwards

Feelings

Angry

Tap one fist on head twice

Frightened/scared

Scratch fingertips up and down, alternately on chest using two hands

Surprised

Place hand beside eye, palm pointing forwards, extend fingers outwards with a flick, while taking in quick breath

Feelings

Bored/fed up

Draw palm down centre of face from forehead to chin and sigh

Sorry

Circle fist on upper chest once

Hungry

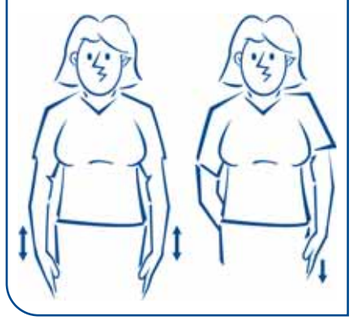
Rub tummy in circular motion

Personal

Thirsty

Pluck at throat with thumb and first finger

Pee



Toilet sign then slide one hand down the hip

Menstruation/period

Put one hand on tummy, dribble fingers of other hand on back of first hand

Pad

Pull at front of trousers/ skirt at waist height.
Sanitary towel: sign **period** then **pad**

Masturbate

Make a fist and twist from the wrist (a semi-circular movement) three times

Aftershave

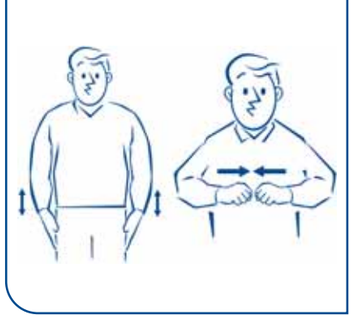
Pat cheeks with both hands, quickly

Personal

Deodorant

Make **wet** sign ie dribble fingers, close to armpit

Toilet paper



Sign **toilet** then **paper**

Cream

Trace a circle with fingertips on the back of the opposite hand, several times then touch part of body cream will be applied to

Shave

Make fist with thumb extended. Rub thumb down side of face

To cuddle

Squeeze child's arms gently or cross arms over body and squeeze self in towards chest

Bowel movement

Toilet sign then tap back at waist height

Make up

Rub hands over cheeks in circular movement

Eye shadow

Draw finger tips across eyebrow and away from body

Lipstick

Draw fingers over lips, start from the middle and trace out to one side, then to the other

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Recommended further reading and videos

Recommended further reading

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David Fulton, London

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Cerebral palsy and visual impairment in children: experience of collaborative practice in Scotland
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A pack for parents of children with visual impairment, to help develop understanding of early concepts, language and pre reading skills
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RNIB **Insight magazine** – for professionals working with children and young people, as well as for parents and carers. Published bimonthly, it focuses on the education, health and wellbeing of children with sight problems including those with complex needs. For up-to-date subscription details, visit www.rnib.org.uk/insightmagazine

RNIB (2001) **Play it my way** – a resource book for parents providing a wealth of tried and tested play ideas, toys and materials
www.rnib.org.uk/shop

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www.rnib.org.uk/shop

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Recommended videos

Movement, gesture and sign (1996) (VHS Colour)
Illustrates the communication methods outlined in this book and demonstrates the Canaan Barrie "on body" signs.
Available from Audio Visual Technology Section, IT Infrastructure Division, Information Services, The University of Edinburgh, 55 George Square, Edinburgh EH8 9JU Telephone 0131 650 4097
Fax 0131 650 4101

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Learning together

Learning together by Mary Lee and Lindi MacWilliam describes how to create an active learning environment for children with visual impairment and multiple disabilities. It explains and illustrates methods that have been developed over many years, with children of all ages, at the Royal Blind School in Edinburgh. Building upon their acclaimed communication programme, "Movement, Gesture and Sign", the authors offer practical guidance on creating opportunities for children to make and reinforce vital connections with the world.

Revised in 2008, this version explains how consistent responses and appropriate learning conditions offer the security and motivation that young learners need to develop greater self-confidence, a sense of exploration and an ability to communicate. The publication includes 150 illustrated signs from the "Canaan Barrie" adapted signs vocabulary.

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