AN EVALUATION OF VIDEO INTERACTION ANALYSIS IN FAMILIES AND TEACHING SITUATIONS

Raymond Simpson, Penny Forsyth and Hilary Kennedy

OH WAD SOME POW'R THE GIFTIE GIE US
TAE SEE OURSELS AS ITHERS SEE US (Burns, 1786)

ABSTRACT

Video recording and feedback has been refined in the Netherlands over the last ten years as a method of intervention with children who have social and emotional needs or who experience forms of communication breakdown. Positive video feedback techniques have been used in the context of families and schools to facilitate communication and meet children's emotional needs.

Two Tayside psychologists, trained in the Netherlands, have implemented the approach in Scotland and piloted a model of evaluation.

This paper describes the theoretical and historical background to the approach and its implementation with schools and families. It also describes the development of a method of evaluation which was piloted with five families. The preliminary results suggest that parents do become more attuned and positive in their responses to their children's initiatives over the period of the intervention with corresponding improvements in family functioning.

The conclusions of the project recommend developments in the methodology of evaluation and training, follow-up of the original cases and generation of a larger sample population.

INTRODUCTION

The quality of relationships between adults and children has always been central to developmental psychology. Recent developments within child care services in the Netherlands (Biemans, 1990) have provided an interesting and powerful technique which may enhance the quality of interaction in any context. The technique aims to improve not only communication but the actual quality of the relationship between the child and the carer. It is considered a particularly effective form of intervention with children and adults who are experiencing difficulties in their relationships which prevent the child's emotional or developmental needs being met.

In practice, the approach involves the technique of video interaction guidance. As a first step the practitioner selects a few minutes of the family's interaction and records this on video. This interaction is characterised by reciprocal communication and mutually pleasurable experiences initiated by the child. Initially the situation may need to be structured and optimum communication facilitated by a variety of behavioural and family counselling techniques eg modelling, reinforcing, amplifying and clarifying communications. Positive moments are selected (specifically when a parent or carer has responded in a positive way to a child's action or initiative using body language or verbal comment). These moments are then replayed to the parent or carer and the behaviour labelled in a specific way which will be described later. Through these feedback sessions the parents or carers become more attuned to the child's initiatives and aware of how they themselves can respond in positive ways. By watching themselves on video they receive a very empowering form of feedback which is based in their unique responses to their own child's initiatives.

The practical application of these principles of working with children, families and young people has been developed in the Netherlands over the last ten years by Harrie Biemans and others through the Orion (Aarts, 1990) and Stichting Promotie Intensive Thusbehandling Netherlands (SPIN) (Biemans, 1990) projects.

this project attempts to develop a method of analysing video tapes in terms of the principles developed in the Netherlands and uses these principles to evaluate changes in the quality of interaction. During this project applications in a range of educational contexts were explored.

BACKGROUND

Three Tayside psychologists have been interested in the technique of video interaction guidance since being introduced to the work of Stichting Promotie Intensive Thusbehandling Netherland (SPIN) by professor Colwyn Trevarthen at Edinburgh University whose research into infant mother communication was seminal to the Dutch initiative. Over the last three years they have been experimenting with the technique and attending conferences and seminars on the topic. In May 1993 two of them visited the Netherlands and were fortunate to receive an intensive induction into the work of a team of home video trainers, some of them also worked in schools. The national coordinator of SPIN, Harrie Biemans, arranged for Claske Houwing to supervise and support them as they developed the technique in Scotland.

THEORECTICAL INFLUENCES

The authors acknowledge the influence of three discrete theoretical standpoints:

- theories of intersubjectivity and mediated learning
- theories of change which emphasise respect, empowerment and collaboration with families
- theories of change which use self modelling and video feedback

1 Theory of intersubjectivity and mediated learning

The theory of intersubjectivity and mediated learning is firmly located in developmental psychology and ethology. The concept of “intersubjectivity” and the primacy of the child’s initiatives is defined by Trevarthen (1979) in the following way, when speaking of early infant communication:

“For infants to share mental control with other persons they must have two skills. First they must be able to exhibit to others at least the rudiments of individual consciousness and intentionality. This attribute of acting agents I call subjectivity. In order to communicate, infants must also be able to adapt or fit this subjective control to the subjectivity of others; they must also demonstrate “intersubjectivity”.

This theory is central to the principles of video interaction guidance as described above. It offers an explanation of how parents of children of all ages and indeed adults negotiate each other’s unique “personhood” (Berger, 1967). Two important steps in this process are the recognition of the importance of body language and the ability to respond in an attuned manner to others’ initiatives. Martin Richards defines this process more concretely when he writes that:

“People are different (from things in the infant’s consciousness) because they do not react in a simple way. The simple loop of action and reaction becomes complex because it includes another mind. If we say something to someone the last thing we expect is for them to repeat back our own words. What is returned is some complement or alternation to what we have done”. (Richards,1974).

There is an affective dimension to these postulates, best illustrated in the work of Mead and Hayman (1965) when they wrote

“As the mother smiles when the child smiles... and clucks in response to his first playful babbling, the child learns the world is a place in which people can reciprocate moods and meaning”.

Trevarthen (1984) over the last fifteen years has attempted to explore and document the development and dynamics of affective responsiveness between adults and children. He stresses the importance of this process in mediating not only communication and learning but in underpinning the emotional development of the child. He suggests that at around none months the child develops cooperative awareness through a process of “referencing” ie children begin to integrate the hitherto discrete affective experiences of people and things by looking to the mother to gauge her affective response to objects, experiences or their own actions. Thus even his affective responses to the world are mediated by their carers. he calls this “secondary intersubjectivity”.

It might be asked what these early and possibly biologically determined processes have to do with communication between individuals at later developmental stages.

This question can be answered by suggesting that the “emotional-expressive dialogue” (Hundeide, 1991) which develops from birth is the first crucial stage in the development of interaction and becomes the undercurrent of communication between individuals at all stages of their development. This can obviously be related to many psychological theories specifically those of attachment and bonding (Bowlby, 1958). However the description of this process in terms of observable behaviours and specific interaction patterns suggests that other carers can experience this diaglogue and renders it more accessible and “reclaimable” in cases of communication breakdown or “bonding failure”. The experience of video interaction guidance is that this is the case not only in mother/infant communication but also with older children, adolescents and between adults.

Two fundamental ideas from this teory have influenced video interaction guidance. The first is the adult’s ability to be sensitive to the child’s actions and communicative intent by attending and responding encouragingly. The other is the active role which the adult plays in mediating children’s learning experiences, through shared activities, towards culturally shared knowledge.

This process of mediation has been described variously

by Bruner and Wood as “scaffolding”
by Vygotsky as “learning in the zone of proximal development”
and by Fuerstein and Klein as “mediated learning experiences”.
(Bruner, 1978; Wood et al, 1986; Vygotsky, 1978; Fuerstein and Klein, 1985)

The process is recognised within the principles of video interaction guidance as cooperation and attuned guidance which are contingent on shared experience or mediating behaviour by the parent.

Hundeide (1991) eloquently summarises the implications of these processes for future relationships:

"The question is when mediation intervention is most appropriate and successful. It seems that there is a natural sequence starting with the emotional-expressive dialogue in the first months of an infant's life, with mediation gradually taking over in the latter part of the first year. However, the emotional-expressive aspect will always be present as an undercurrent and metacommunication of how we relate to people around us."

2 Theories of change which stress respect, empowerment and collaboration with families

The second theoretical standpoint which has influenced this approach relates to the relationship between the practitioner and client or client group. It states that change may be achieved more effectively and in a more enduring way in the context of a relationship which is collaborative rather than prescriptive, empowering rather than de-skilling and conveys a respect for the client's strengths and potential. These principles are described by Kool et al (1990) in the "International Initiative, working with children, youth and their families" (see appendix F). They stress respect, empowerment and positive change, working with, rather than for, families. They are similar to those described by Topping (1986) in "Parents as Educators" and Wolfendale (1992) in "Empowering parents and teachers, working for children"; they are applied in the context of the home and family and use modelling and positive reinforcement.

These principles have a wide range of applications in education, community work, psychology and social work settings and are increasingly in evidence in current policy and practice. They are central to parental involvement in special education (Kennedy et al, 1991) and most systemic models of family therapy (Will and Wrate, 1985). All of these approaches seek to recognise the strengths of the individual, family and start by acknowledging them and giving clients both encouragement and responsibility to use their own strengths. This is usually done actively in the here and now with the professional acting as a facilitator.

3 Theories of change which use self modelling and video feedback

The use of video feedback and self modelling in the behavioural sciences is extensively reviewed by Dowrick and Biggs (1983) and Dowrick (1991). These reviews provide invaluable information on the practice, ethics and efficacy of video feedback and self modelling as a means of effecting change:

"Self modelling is defined as the behavioural change that results from the observation of oneself on videotapes that show only desired behaviours. Specifically it addresses the possibility that video replay of exclusively successful and adaptive behaviours leads to behaviour change and therapeutic benefits".

Biggs (1983) suggests that the use of video is not without inherent dangers particularly in terms of power relationships. It is important therefore to follow strict protocols with regard to ownership and future use of video materials. Also, if the previous principles of respect and empowerment are adhered to:

"video users should respect the viewers' superior personal knowledge and work with them to discover the meanings of the insights gained" (Biggs, 1983).

This is a crucial aspect of video interaction guidance, where the tendency to misinterpret video material can be minimised if the practitioner is careful to check out with the client at each stage that their experiences and compatible and refers to the client for clarification. Thus even in the process of video interaction guidance the adults mediate each other's learning by "referencing" or looking to each other to give meaning to their shared experiences.

Interactions between infants and mothers in video tape have been studied and analysed by a variety of methods (Hubley and Trevarthen, 1979) involving microanalytic observations focused on intricate sequences of interaction, eye contact, vocalisations and their contingencies.

However, in order to measure behaviour which mediates the development of older children's communication and affective states (Vygotsky, 1978; Bruner, 1988; Wood et al, 1986), it is necessary to identify behaviours in terms of their function.

Describing functional behaviour involves observing longer sequences of behaviour and making subjective decisions about the motives of the individuals. This necessitates macroanalytic techniques which describes behaviours carefully in categories which are designed to be identified with high reliability (Trevarthen and Marwick, 1982).

RELATIONSHIP OF THE ABOVE THEORIES AND PRINCIPLES TO THE PRACTICE OF VIDEO INTERACTION GUIDANCE

The principles of respect, empowerment and collaboration are reflected in the way in which the SPIN approach to video interaction guidance chooses to orientate families to the work.

"We are here to help you look at how you're getting on. We are going to do this by recording some good times on video and looking at them together. Then we are going to talk about what you do that makes these times good".

The difference between this and similar collaborative approaches is that it is not problem focused. Focusing on problems is seen as incompatible with this type of video interaction guidance as it may generate expectations of failure and begs the questions of who owns the problem (particularly in cases with child protection issues). it is also well documented that showing people videos of themselves failing in problem situations is not conducive to learning and can be very destructive (Dowrick and Biggs, 1983).

In common with most counselling approaches (Nelson Jones, 1982) video interaction guidance strives not to give advice. It does however reinforce and demonstrate the effectiveness of positivity. In the early stages of the work with the family it also uses "modelling" and "compensating" behavioural techniques which are used to help the family experience and demonstrate more attuned positive cycles of interaction which are recorded on video.

In terms of the ethics and practice of viewing video tapes, video interaction guidance requires strict adherence to a mutually agreed written contract re the ownership and use of the video materials. It is also important that the meaning of the content is discussed and shared openly with clients; for example, clients are asked how they experience what they are viewing and are always invited to reflect on any view expressed by the practitioner. Thus they learn that their actions, perceptions and opinions are important. This process of mediated learning which is so important to adult/child interaction and which is mirrored within the adults' interaction is central to video interaction guidance as developed within the SPIN programme. Supervision within SPIN involves the practitioners recording themselves

talking with clients about their video tapes to increase sensitivity and responsiveness to the clients' views and opinions.

For the purposes of both analysis and evaluation of videotapes the authors chose to emply the "contact principles" (Biemans,1990). These are a set of functional descriptions of communication which derive from Trevarthen's observations of how children's initiatives are reacted to by adults. They have been evolved and reliably observed by practitioners of video home training and video interaction guidance over the last ten years.

Contact Principles Video Analysis (See Appendix A)

Yes-series ATTUNED	**Positive responses to child's initiatives**	**Negative responses to child's initiatives**	**No-series DISCORDANT**
Being attentive	turn in response return eye contact	turning away looking away	not attentive
"yes" giving - (body)	respond with: smile nod friendly intonation friendly posture	not smiling unfriendly intonation shaking the head unpleasant facial expression	"no" giving - (body)
"yes" giving – (verbal)	talking labelling saying yes each making initiatives saying what you feel asking what you want to know	remaining silent correcting saying no	"no" giving – (verbal)
Taking turns	receiving and returning	everyone talking at once not receiving not taking a turn	not taking turns
Co-operation	receiving giving help	not receiving help not giving help not joining in	not co-operating
Attuned guiding, leading	taking initiatives distraction making suggestions making choices making plans problem-solving	not taking initiatives not distracting not making suggestions not making choices not making plans not problem-solving	Discordant guiding, leading

Hundeide (1991) acknowledges the influence of these principles when he writes:

"Identification, confirmation and following the initiative of the child is the key to the healing process... turn-taking and reciprocal confirmation of positive expressive feelings adjusted to each other, may be described as a "yes-cycle". This is always associated with the sharing of joy... this positive confirmatory cycle has a very strong therapeutic effect. In a situation of family stress and disturbance, however, this positive cycle is one of the first things to disappear. instead a "no-cycle" starts... with metacommunicative signals that are detrimental for the child's self worth and exploration.

AIMS

The aims of this project were three-fold:

1 To develop a nucleus of experienced practitioners for the implemntation of video interaction guidance in Scotland
2 To use video interaction guidance in a variety of contexts over the period of the project
3 To create an instrument which can be used to evaluate the effectiveness of the intervention with families and which can be used to test the experimental hypotheses below

HYPOTHESES

The central hypotheses of the evaluation was that video interaction guidance would increase the frequency of positive or attuned responses by parents to their children's initiatives.

Subordinate hypotheses were that video interaction guidance:

(a) would decrease discordant interactions between parents and children and foster more active involvement;
(b) would increase the time spent in turn-taking and the length of turn-taking sequences;
(c) would foster more initiatives from the child;
(d) would be associated with an increase in reported positive shared experiences, improvements in communication and more effective management strategies

As this was the first attempt to evaluate systematically this approach in the UK it was seen as important for its future development that it be supervised and evaluated as reliably as possible.

The authors are aware of limitations due to sample size, selection, experience of practitioners and reliability of measures. They set out, however, within the scale of the project to pilot a model of evaluation and arrive as some meaningful conclusions.

METHODOLOGY

As a consequence of the threefold nature of this project the methodology is rather complex and will be dealt with under the three topics:

- Training in video interaction guidance
- Intervention with families
- Development of evaluation

1 Training in video interaction guidance

Two of the authors visited the Netherlands in May 1993 for one week during which they received an intensive introduction to video home training. They returned for supervision, on a monthly basis, from October 1993 onwards. They also met with another psychologist for weekly peer supervision. Supervision sessions consisted of viewing tapes of family interaction, analysing them, rehearsing feedback and viewing tapes of themselves giving

feedback to families. In the early stages supervision concentrated on the recognition and effective communication of the contact principles, as illustrated by the families' own interaction. In later stages the same principles were used to empower parents and children in communicating with each other and outside agencies eg schools, social work, hosing departments, health services. These "macro stages" are detailed in the "Trajectplan for multi-problem families" (Biemans, 1990) and Appendix B) and broadly reflect the systemic issues which concern educational psychology today.

The level of supervision outlined above would seem to be the minimum required for effective learning and reliability of the method. Full training takes twelve to eighteen months of supervised work and all video home trainers within SPIN continue to be part of a supervision network. The need for this level of supervision becomes apparent as more systemic issues are tackled by the approach.

Some contexts for video home training/video interaction guidance are described by the Trajectplan for multi-problem families which is outlined below.

Trajectplan

Basic Communication	In the home, residential or day-care provision, in the classroom or creche
Daily Life	With the social worker, pre-school home visitor, child protection agency, groupworker, residential worker or day-care staff
Children's Development	With the family in the home, with teaching staff in the school or nursery
Parents' Development	In dialogues or counselling situations relating to interactions and relationships within the family
Functioning in society	Interactions between the family and the community, health service, education, child care, social services, neighbours

2 Intervention with families

The type of cases evaluated by this project were not controlled. They were however governed by the nature of cases referred to the educational psychology service over the seven month period of the study and the exigencies of the psychologists' workloads.

The families who were worked with over the period of the project were not selected especially for the approach. They had all been given some priority in the psychologists' caseloads for a variety of reasons eg child protection, challenging behaviour or breakdown of communication.

As most of the families had experience of contact with other agencies and other methods of intervention, they were introduced to the principles of this approach and told what it would involve. In some cases the first session was used as a demonstration of the method. They were then asked if they wanted to work in this way with the psychologist on a weekly basis for up to six months if necessary. Over the period of the project another three families were offered the approach but declined.

Families were visited for periods of forty to ninety minutes weekly. During this time they were recorded on video for a maximum of ten minutes whilst engaged in enjoyable experiences or effective communication characterised by interactions within the "yes cycle" of the contact principles. They were orientated to this by an introduction such as

“We would like to film you when things are going well, then look at what you do which makes this happen.”

It was made clear that the psychologist was not going to focus on problem behaviour nor was he or she going to give advice but was going to look together at the family’s strengths and use these to improve communication, interaction and relationships.

In all cases a video release form was completed. For the purposes of this project the tapes of the initial sessions were retained until they could be evaluated along with those of the final sessions.

Between sessions the psychologist took the tape away, analysed it and rehearsed feedback (with his or her colleagues or supervisor if possible).

Feedback to the family on the next visit used the “contact principles” to illustrate and label positive interactions. This process went on for between six and twenty two sessions depending on the nature of the case or the needs of the family.

At the end of the intervention the families were given edited tapes of the recordings of family interactions and in some cases tapes of the feedback sessions. A follow up time was agreed with them.

3 Development of evaluation

As this approach had not, to our knowledge, been formally evaluated previously, the authors had to decide which aspects of video home training they could reliably measure within the constraints of this project. This was a difficult task which may explain why no full evaluation of the approach has been published to date. In the Netherlands, over the last ten years, approximately three hundred home trainers have worked with over twenty thousand families. A wealth of data had been collected, but, because the method of intervention has been evolving over this period and because measures of effectiveness are now being looked at across the whole range of family functioning, the data has not been analysed or published.

From the outset of the project it was decided that, to be valid, this evaluation would be confined to the effectiveness of the contact principles in changing the frequency of the parents’ positive responses to their children’s initiatives (See AIMS and HYPOTHESES). This was discussed with Andy Sluckin and Harrie Biemans who suggested that it was crucial to measure the children’s communicative behaviour and the adults’ mediative responses. They also stresses the “recognition of personhood” and “happy moments” as more qualitative factors of which to be aware. A more qualitative evaluation was attempted by using a structured interview (see Appendix C) with the family before and after the intervention about aspects of their functioning eg communication, behaviour management strategies, shared enjoyment.

It was decided therefore to use the contact principles as the basis of the evaluation instrument. The “yes cycle”, or attuned behaviours which mediate children’s communication and affective states, are described in detail above eg yes body = turning towards, responding with smile, nodding, friendly posture or expression. For the purposes of this project the “no cycle” or discordant behaviours were also recorded eg no body = turning away, not smiling, unpleasant expression. (Although no reference is ever made to “no cycle” behaviours in the intervention).

The basic units of behaviour which itwas decided to record were adults’ responses to children’s initiatives if the child must have said or done something with a communicative

intent for the adults' response to the scored and coded 'i'. If the adult responded positively to a child's action this was scored and coded 'a'. The corollary of this was that the lack of response to an initiative could be scored in the "no cycle" as not attending whereas no response to an action was not scored.

A "resting" category was also used when the adult was not engaged with the child or his/her activity and the child was not making initiatives. If the adult was engaged with someone else or went out of the room nothing was recorded and this time was discounted from the time sampling. The adult's own initiatives towards the child were also recorded as "attuned" or "discordant". (Stern, 1985).

The only contact principle which was not recorded in a column of its own was "turn-taking". This proved impracticable as it could take the form of a sequence of other behaviours. It proved relatively simple to access this information however as a pattern of responses in the "yes cycle" which took the following form:

"child's initiative > adult's responses > child's initiative"

This sequence was considered a full "turn" and in this way it was possible to extract both the number of turns and the length of turn taking sequences from the data. Turn-taking sequences were terminated when adults' responses went into the discordant or "no cycle" or resting category.

The first four minutes of the first and last tapes of each family were analysed. It was assumed that on both these occasions the families were filmed whilst functioning at their optimum level for the time. (The films had been made with the intention of providing examples of good communication for feedback to the families).

The tapes were stopped at five second intervals and a decision made about which of the contact principles were observed. This gave the following information:

1 The number of attuned responses to child's initiatives
2 The number of attuned responses to child's actions
3 The number of discordant responses to child's initiatives
4 Periods of time resting
5 Adult's attuned initiatives
6 Adult's discordant initiatives
7 The number of turns
8 The length of turn-taking sequences
9 The frequency of occurrence of each of the contact principles
10 The number of initiatives made by children

A minimum of two trained observers scored each tape, of whom was the psychologist who had worked with the family. In the process of developing the instrument a high level of inter-observer reliability (95%) was achieved, with most discrepancies relating to which of the contact principles were observed rather than whether a response was attuned or discordant.

The discrimination between "initiative" (with communicative intent) and "action" (without communicative intent) occasionally had to be resolved by viewing longer (ten to fifteen seconds) sequences of tapes to understand the meaning of the events over longer interactions.

The observers were experienced in recognising and using the contact principles but the behaviours which were being measured could be described in such a way as to make the

observations replicable by other observers. It is planned to develop fuller descriptions of these behaviours for future external evaluators. A third observer was involved during the development of the instrument and similar levels of reliability achieved.

Qualitative information on aspects of family functioning and communication were obtained from structured interviews on initial involvement with the family and transcripts of their comments on their functioning during feedback sessions towards the conclusion of the involvement.

The development of the initial structured interview was constrained by the principles of the approach ie any problem-focused interview or checklist would be invalid and more importantly would risk influencing the families' perception of the work. The interview had therefore to be constructed with regard to the communication needs of the child and parent, behaviour management strategies and effective aspects (Will and Wrate 1985) of the parent/child relationship. (See Appendix C)

An attempt was made to find standardised questionnaires to assess some of these elements of interaction, relationships, self esteem or feelings. However neither of the psychologists felt comfortable administering those which were available during the process of initial engagement with the families. This problem could be overcome by finding more "user friendly" materials or, in a project with more resources, enlisting the assistance of external interviewers. This would also reduce subjectivity and observer bias.

Main Hypothesis

Video Interaction Guidance would increase the positive or "attuned" responses of parents to their children's initiatives

The results summarised in table A show that all the families increased their "attuned" responses to their children's initiatives.

Table A

Before the intervention, the percentage of children's initiatives responded to in an "attuned" way ranged from 27% to 75% with the man around 35%. After the intervention, the same measure ranged from 83% to 100% with the mean around 94%. This increase in "attuned" responses is significant. (T-test; $t=4.08$, $p<0.02$, two-tailed probability).

Rates of increase in positive or attuned behaviour ranged from approximately 30% to 300% with a mean increase of 130%.

Subordinate Hypothesis (a)

Video Interaction Guidance would decrease "discordant" interactions by parents and foster more active involvement.

The results summarised in Table B show that all the parents spent less time in "discordant" behaviour after the intervention and more time in "attuned" behaviour. All the families who were initially engaged for some of the time became more actively involved.

Table B

(Insert Table B)

Before intervention the "discordant" behaviour ranged from 12% to 56% of the time with a mean of around 34%.

After intervention this had decreased to a range of 0% to 8% with a mean of around 4%.

This decrease is significant. (T-test; $t=3.42$, $p<0.02$, two-tailed probability)

Similarly, before intervention the resting behaviour ranged from 0% to 34% of the time with a mean of around 14%.

After intervention this had decreased to a range of 2% to 15% with a mean of 6%

This result is not significant.

Before intervention the families spent between 15% and 67%, with a mean of 52%, of their time in "discordant" or "resting" behaviour. After intervention this had decreased to between 2% and 21% with a mean of 10%. This shows that after intervention the families spend, on average, 90% of their time in "attuned" interactions.

Subordinate Hypothesis (b)

Video Interaction Guidance would increase time spent in turn-taking sequences and the number of turns within a sequence.

The results are summarised in Table C. This shows that the percentage of time spent in turn-taking sequences in the yes-cycle increased for all families. After intervention all the families had stopped turn-taking in the no-cycle.

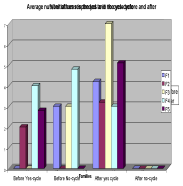
The average number of turns per sequence increased for four out of the five of the families.

Table C

Before intervention the percentage of time spent in turn-taking sequences ranged from 0% to 17% with a mean of 6.6%. After intervention this had increased in all families, ranging from 25% to 89%, with a mean of 47%. This increase is significant (T-test; $t=3.97$, $p<0.02$, two-tailed probability).

The average number of turns in the yes-cycle increased over the intervention for four families. However Family 4 could sustain turn-taking before the intervention hence did not improve in this measure. They changed by stopping the sequences in the no-cycle.

Two families (1 and 3) did not sustain turns in the yes-cycle before the intervention. They both became able to sustain sequences with a number (mean of 4.5 and 7 respectively) of turns.



Subordinate Hypothesis (c)

Video Interaction Guidance would foster more initiatives from the child.

The results summarised in Table D show that all families changed in the direction of increasing initiatives that are responded to positively. Four of the families also increased the total number of initiatives made by the children. However, in one family, the child was originally making a large number of annoying initiatives which completely disappeared after intervention.

Table D

(insert Table D)

Before intervention the number of initiatives responded to in the “yes-cycle” in a four minute period ranged from 4 to 12 with a mean of 7.6. After intervention these ranged from 16 to 23 with a mean of 18. This increase is highly significant. (T-test; $t=21.23$, $p<0.001$, two-tailed probability).

The number of initiatives responded to in the “no-cycle” decreased for every family. The percentage decrease ranged from 42% to 100%, with a mean of 74%.

The total number of initiatives increased for four families with the percentage increase ranging from 29% to 38%.

Family 4 decreased their total number of initiatives.

Subordinate Hypothesis (d)

Experience of video interaction guidance would be associated with an increase in reported positive shared experiences, improvements in communication and more effective management strategies.

The initial structured interviews asked about affective involvement, shared experiences, communication and management strategies (Will and Wrate, 1985).

1 All the respondents expressed difficulties with not only their children's behaviour or communication but with the affective qualities of their relationships. Here are some of their comments about how they were getting on:

"awful, moody and difficult", "getting worse recently", "there's nothing about him that I like, he annoys me all the time."

and how it made them feel:

"lousy, hurt, angry: I don't want to take any more of this"
"I want to run away", "worried, upset, confused." "It drive me mad, I want some time on my own."

2 Shared enjoyable experiences varied from:

"most days once he gets over it" to
"not often" or "once a week but its fleeting" or "never."

3 Communication seemed to have broken down in most of the cases where, if children communicated, they did it by:

"shouting from a distance", "shouting at me", "tapping or hitting" or "poking, making noises."

Parents tried to make contact by physically holding or restraining:

"I got up to him and hold him",
"I leave him in the corner till he comes round",
"I take his hands away from his ears",
"I keep shouting because (child) makes me angry",
"If you start raising your voice (child) tends to feed on it."

4 Management strategies tended to be laissez faire:

"nothing, he just gets worse",
"We just let him go upstairs in a huff, otherwise it gets out of hand."

or negative

"send him to his room", "ground him", "stop pocket money/TV"

After the intervention all the families felt that there had been an improvement in their relationships:

"We don't always get where I want to go but we do have a nice time now",
"He's started saying I love you, and I have to say I love you too",

"There is a more relaxed atmosphere in the house, I'm seeing it all the time",
"It feels more like it's us that have changed, it's much better like",
"They're lively kids now",
"The school say he's no bother, he's really calmed down a lot."

Communication also seemed to have improved, parents seemed to have more insight into the children's communicative needs:

"If I just listen to him...",
"I just have to remember to keep my voice down... I realise that shouting won't get me anywhere",
"I feel all the better now that she said sorry, I feel we can sort things out",
"If I can just keep a pleasant expression",
"You just have to realise if he relates to you, you have to relate to him".

Management strategies appeared to have become more flexible and child centred:

"I just have to remember to keep my voice down even if I'm angry with them",
"If you just distract him",
"Make them feel important",
"Get close and make him realise you are not going to lose the head",
"Make him feel he's just the same as you",
"When I play with the children they stop charging around".

It appeared that parents become more confident and consequently more effective; they still experienced difficulties but felt better about how they dealt with them. One parent said:

"I feel I know what to do now, I don;t always do it, it's hard to do it all the time but I know if I do things will go better."
"I'm good with the bairns now, I've seen it in the video, it's adults I have problems with."

OTHER APPLICATIONS

Over the period of the project the authors applied video interaction guidance in a number of educational contexts, schools and nurseries. This was partly motivated by the recent publication by the SOED of "Performance Indicators for Schools" (SOED, 1992) which cites as one of the main indicators of school ethos "the relationship between children and teachers."

All three authors have had a long standing interest in promoting positive approaches to behaviour management and social and personal development groups in schools. They felt that video interaction guidance might be used to enhance positive interaction and self model for teachers their more effective communications with children. They have been very aware that it is relatively easy to present the theory of promoting positive behaviour or improving communication but very difficult to actually change communication patterns in schools.

The technique was employed in five different school settings with seven teachers for between on and four sessions with individual children, social and personal development groups of whole classes.

Pilot work in school settings included:

- teachers of young children with social/communication disorders
- teachers who exhibited a very high level of control on a class
- teachers of children experiencing difficulties experiencing difficulties with children with special needs in mainstream class settings
- social and personal development groups

These interventions were initially tentative and exploratory. However, after initial positive feedback from teachers, children and parents, it was felt that there would be value in applying the strategy in a more formal manner. The following case study describes such an intervention with a teacher and an upper primary class which took place over a nine week period (one hour per week).

Session one consisted of a preliminary discussion to explain the approach and complete an initial questionnaire. Four sessions were then spent filming in the classroom in a range of situations negotiated between the class teacher and the psychologist. Four feedback sessions were given between filming sessions. In keeping with the approach with families, support was provided before and during each filming session to produce an optimum level of good communication between the teacher and the class.

This intervention was evaluated by the following means:

1 Initial and final interview with the teacher
2 Informational feedback from the class on conclusion of the intervention
3 Preliminary analysis of the first and last tapes

The change in the teacher's communication skills within the classroom was marked and started after the initial discussion. At first the teacher found the prospect of being filmed daunting and liked to organise the sessions and "rehearse" the lesson with the class beforehand. This resulted in rapid progress as the teacher practised good communication skills more frequently. From behind the camera the psychologist also modelled skills such as praising responses, which the teacher put into use immediately.

Evaluation

Initially the teacher admitted to being easily irritated by "chatty" children (or teachers!) and tried to keep tight control over everything in the classroom. It was difficult for this teacher to praise children fearing that kindness might be seen as softness and lead to loss of control. This teacher suffered from constant migraines and often felt like walking out.

After nine weeks he felt much more relaxed and was enjoying the class much more. He found the feedback sessions

"very interesting! I never realised how the children turned to listen to me when I was just talking."

He had seen that he did not lose control when he allowed the children to initiate more and that the children's attention on tasks was very good in the less teacher-controlled activities. He enjoyed teaching more, he had fewer migraines and when things didn't go well he was prepared to tell the class how he was feeling and found that this broke the downward spiral. He now had time to consider the emotional needs of the pupils which he was finding rewarding.

Informal discussions between the psychologist, the teacher and the class took place in the context of a discussion on Victorian classrooms. The children clearly expressed their fears

on first coming to this class and described the changes which had taken place over the last term.

"I now feel (the teacher) is one of the best teachers in the school because I have discovered he has a good sense of humour."
"He hardly ever shouts now."
"I was frightened about coming into this class but I like it now."

Analysis of four minutes of the first and last tapes using the same categories as were used with the families showed that all changes were in the direction of becoming more attuned. The total number of initiatives increased by 70%, the number of yes verbals to these initiatives was doubled and 300% more time was spent in turn-taking sequences.

This and other experiments provided valuable for both psychologists and teachers (and hopefully pupils!). Other teachers made comments like these about the interventions:

"I didn't know that I did all these things."
"I didn't realise that eye contact was so important."
"I really try to let them have their turn now."
"I don't worry about children coming up to me with questions now."

Some ground rules were established for introducing the approach to schools:

1 It must be thoroughly negotiated with the head teacher, class teacher and parent (if targeting a specific child/teacher relationship
2 The head teacher may have to accept responsibility for communicating to parents (through a note, newsletter or the school handbook) that video cameras will be in use in the school and guidelines negotiated with parents on the basis of individual cases or as a school policy.
3 It was found helpful in the case of one school to introduce the technique to the whole staff as an inservice topic and to offer it as an option to all staff in the school rather than target a specific teacher
4 It was important to negotiate with the head teacher adequate time for feedback sessions with the class teacher

DISCUSSION

This project provided a means of monitoring and evaluating case studies using an approach which has not been systematically implemented in this country. From the outset the authors were aware of many limitations. They were relatively untrained and inexperienced in the new technique. They did not have access to a large sample or the chance to identify a comparable control group. There was, therefore, no possibility of a full clinical model of evaluation.

There were also theoretical and ethical problems in establishing a base line for measurements. Any problem-focused interview or checklist might have influenced the families' perception of the approach which stressed from the initial engagement with the family their strengths and potential.

Nevertheless, it was important to ensure that the approach was implemented in a way which was consistent with the principles of video interaction guidance as developed in the Netherlands. The supervision provided over the period of the project attempted to ensure that the method of intervention, at least in the stage of "basic communication", had been reliably implemented.

This is however only the first stage of the “Trajectplan for multiproblem families” devised by Harrie Biemans and the SPIN organisation. (See Appendix B). Further stages go on to empower families in other areas of their functioning ie routines of daily life, the development of the children in school, the personal development of the parents and interaction with the community.

The authors realised the evaluation of all these stages was beyond the scale of this project and decided that the most elementary measure of change ie the frequency of parents' positive responses to their children's initiatives might be meaningful and valid.

Relationship of results to the hypotheses

The central hypothesis of this evaluation was that video interaction guidance increases the frequency of positive or attuned responses by parents to their children's initiatives.

Subordinate hypotheses were that video interaction guidance:

(a) decreased discordant interactions between parents and children and fostered more active involvement;
(b) increased the time spent in turn-taking and the length of turn-taking sequences;
(c) fostered more initiatives from the child; and
(d) would be associated with an increase in reported positive shares experiences, improvements in communication and more effective management strategies (as reported by the parents).

As a consequence of video interaction guidance it was hoped that parents might become more successful in mediating their children's cognitive and affective development and incidentally experience less conflict and more “happy moments”.

The central hypothesis was supported by the results and many of the predicted changes were in fact observed and measured in the case studies. There were significantly more positive responses to their children's initiatives after intervention (see RESULTS Table A). Parents also spent significantly less time in “discordant” interactions and were more actively involved if they had been disengaged at the start (see RESULTS Table B). Parents did significantly increase the proportion of time they spent turn-taking. The two families who did not tune-take in the “yes-cycle” before intervention both became able to sustain turn-taking sequences (see RESULTS Table C).

Parents very significantly increased the number of initiatives responded to in the “yes-cycle”. The total number of initiatives increased for four out of the five families. (See RESULTS Table D).

The authors felt that they had achieved a valid measure of what they set out to measure within the constraints of the project. The also gained much useful information about the nature of the observed change and patterns of interaction within families eg positive/negative, passive/active, source of initiatives (parent0child). Some families were initially very negative in their responses to children's initiatives, other simply did not attend or were very passive. Some parents made only discordant initiatives, others made many initiatives themselves but did not attend to their children's, while others made very few initiatives. Families also varied in terms of the contact principles which they employed in communication with their children. Some used yes verbal and attuned guidance whilst others preferred to give yes body, attend or co-operate.

It was also interesting to observe that, although all the families changed in positive ways, the nature of that change was unique to that family and not always in the way that the psychologist might have predicted. For example, positive change might be associated with increased or decreased activity or the adults making more or fewer initiatives. Similarly children might sometimes make fewer initiatives if they had previously been very active to gain adults' attention.

The authors feel that this variability illustrates the strength of the approach over more prescriptive interventions such as injunctions to praise, reward or ignore, which may not be "in tune" with the family's range of already available responses.

It seems therefore that video interaction guidance is capable of empowering families in ways which are specific to their situation and which they, rather than the professionals, control. Families actively enjoyed making and reviewing the videos and the psychologists felt that showing them what they were doing was both rewarding and empowering.

Reliability of quantitative measures

The issue of reliability of the measures arose at several points in the design and implementation of the evaluation instrument. Both observers had similar experience of training in the contact principles and repeatedly achieved high levels of inter-observer reliability. A pilot reliability test was completed with a family which was unknown to either observer. They achieved a reliability of 95%, with no disputes over attuned/discordant.

The authors acknowledge that since the study is evaluating change in families with which they had worked there may be elements of observer bias and error. They suggest that, for this study to be replicated reliably, the observers evaluating the video tapes should not themselves have worked with the cases. The current lack of trained observers in this country suggests that they descriptions of the contact principles need to be expanded to a list of "functional behaviours" (Trevarthen and Marwick, 1982) so that they can be recognised by researchers with a much less intensive training in video interaction guidance.

Changes in the more qualitative aspects: reliability issues

The degree to which these observed changes in basic communication affect the wider aspects of relationships and family functioning and generalise to contexts other than those which were recorded requires more detailed and further investigation.

The parents in these case studies however, by their responses to questions about communication, management, and their relationship with their children, did seem more positive in their own abilities and their children's potential.

More reliable measures of the more qualitative aspects of change could be obtained by videoing the families talking about communication, management, relationships and shared experiences before intervention. The use of research assistants and standardised as well as structured interviews has also been suggested as has the possibility of interviewing the children. These will all be considered further.

Relationship to other research on the implementation of video home training

The absence of similar published research or findings on this or similar interventions is unfortunate. The reasons for this are given elsewhere (see METHODOLOGY).

There are however a number of projects in Israel, Eire and the Netherlands which are currently attempting to evaluate the more “macro” aspects of change as a consequence of video home training. The results of this research should become available over the next few years. The authors feel that three years would be the minimum time scale for such a study which would ideally be carried out externally with support from an academic base.

Tinas Decker of the Social Agocical Centre (SAC) in Amsterdam is currently feeding into a data base vast amounts of data relating to the “macro stages” of the Trajectplan for multiproblem families” obtained from SPIN video home trainers over the last few years. 1994 also saw the publication (in Dutch) of the first definitive work on the method. It is hoped that this will help to establish the reliability of the method and aid the validity of outcome measures.

Discussion of other applications in educational contexts

As the approach was employed in educational settings it became apparent that, as with other positive approaches to behaviour and social and personal development, very individual attitudes and behaviours of teachers are made explicit. There is therefore the potential for strong resistance to change or even acceptance of the intervention. As with families, this vulnerability must be respected. It is important to orientate staff and engage them with the intervention as supportively as possible. A video camera can appear very intrusive in a classroom and factors such as camera shyness and playing to the camera become very important.

Another issue which became apparent was that the teaching situation seems to create more barriers to achieving reciprocity, mediated learning and intersubjectivity than the home. The phenomenon has been well documented (Tizard and Hughes, 1986) in relation to language behaviour of young children at home and in nursery school. The difficulties are compounded by

- The relative lack of shared experience at a personal level between teachers and pupils
- The pressure which teachers feel to impart information, give “discordant” guidance and ask questions reduced their opportunities to receive children’s initiatives or “name with approval”

Notwithstanding these difficulties some excellent examples of teachers “scaffolding” children’s ideas and mediating their affective experiences were observed.

The experience of using the technique highlights the need to develop a methodology for engagement and intervention with teachers as partners and also a distinct model of evaluation which will have validity in this context.

the authors feel that, on the basis of feedback from these tentative experiments, this approach could become a very powerful and popular adjunct in any situation where positive approaches and social and personal development are being promoted in schools.

CONCLUSIONS

The authors feel that the three aims of the project:

- training in video interaction guidance

- intervention with families and schools and
- development of a model of evaluation

have all been achieved in varying degrees.

The training experience has been intensive but very supportive and the authors have created the nucleus of a support and training network within their own service. They also intend to maintain close links with the SPIN organisation to ensure quality of supervision and training.

Intervention with families and schools has been achieved, protocols have been developed and some of the barriers to working with video overcome. There is sufficient interest from various client groups to develop the approach in the future.

An evaluation instrument has been developed and used to study the changes in a small number of case studies. The initial hypotheses about the direction and nature of changes have been strongly supported by the results.

Developments of the work include:

- Improvements to the methodology to achieve greater validity and reliability
- Identifying larger sample populations to be studies over longer periods of time in terms of changes over wider areas of functioning
- Dissemination of training in the technique of video interaction guidance to workers in other agencies locally and nationally
- Using the instrument of evaluation as both a training and monitoring tool
- The development of a support and supervision network for video interaction guidance

In summary this way of working does produce measurable changes in the more observable behavioural aspects of interaction and communication. it is also popular with clients who report satisfaction with changes in more personal, affective and less objectively measurable ways. The approach has a great deal to offer educational psychologists, has generated interest across a range of child care and educational contexts and seems to be capable of being handed on to professionals who work with families and children in those contexts.

ACKNOWLEDGEMENTS

The authors acknowledge the support of Tayside Region.

The authors are indebted to Harrie Biemans and Claske Houwing of SPIN who afforded training and supervision in the technique over the period of the project. They also afforded valuable insights into the relationship of the theoretical concepts of intersubjectivity, reciprocity and mediation to the practice of video interaction guidance.

Professor Colwyn Trevarthen was also very helpful in discussing his theories, providing references and advice on the analysis of video tapes.

Dr Andy Sluckin, a clinical psychologist who is also training in the approach, was instrumental in both negotiating supervision for the authors and obtaining a sponsorship from Air Uk for travel to the Netherlands. Andy also assisted with the development of the evaluation instrument by viewing videotapes and helping with decisions about timing, descriptions of behaviours, reliability and other matters.

Air UK for preferential rates of travel between Edinburgh and Amsterdam, London and Norwich over the period of the Project.

Helen Myers (Depute Principal Psychologist, Tayside Region) and Les Meade (Principal Educational Psychologist) who both provided encouragement and directed us to sources of funding.

Katherine Kennedy provided technical consultancy in microtechnology.

Linda Simpson for vital references and proof reading.

REFERENCES

AARTS, M (1990). Orion: Method and Organisation. Den Haag Jeugd en Samenlaving.

BERGER, J. (1967). A Fortunate Man. Cambridge: Granta

BIGGS, S.J. (1983). Choosing to change in video feedback common sense and empiricist error. In DOWRICK, P.W. and BIGGS, s.j. (1983). Using Video in the Behavioural Sciences. London: John Wiley.

BIEMANS, H. (1990) Video Home Training: Theory Method and Organisation of SPIN. In KOOL, J. (1990). International Seminar for Innovative Institutions. Ryswijk, Netherlands: Ministry of Welfare Health and Culture.

BOWLBY, J (1958). The Nature of the Child's tie to his Mother. International Journal of Psychoanalysis, 39.

BRUNER, J.S. (1978). Learning how to do things with words. In BRUNER, JS. and GARTON, A (1978) (Eds). Human Growth and Development. Oxford: Clarendon.

BRUNER, J. S. (1988). Actual minds, possible words. Cambridge, Mass: Harvard University Press.

BURNS, R. (1786). To a Louse. In Poems chiefly in the Scottish Dialect. Kilmarnock.

DOWRICK, P.W. and BIGGS S.J. (1983). Using Video in the Behavioural Sciences. London: John Wiley.

DOWRICK, P.W. (1991). A Practical guide to using video in the behavioural sciences. London: John Wiley.

FEURSTEIN, R. and KLEIN, P (1985). Environmental Variables and Cognitive Development. In HAREL and ABASTASLOW. The at-risk infant. Baltimore: Paul H Brookes.

HUBLEY, P. and TREVARTHEN, C. (1979). Sharing a task in infancy. In UZGIRIS, I.C. (Ed). (1979) Social interaction during infancy. San Francisco: Jessey-Bass.

HUNDEIDE, K. (1991). Helping disadvantaged children. London: Kingsley.

KENNEDY, H.A. (1991). Parents as Partners: Helping parents of pre-school children with special educational needs to contribute effectively at meetings. SOED Professional Development Initiative for Educational Psychologist 1989-90. Edinburgh: Scottish Office Education Department.

KOOL, J. (1990). International Seminar for Innovative Institutions. Ryswijk, Netherlands: Ministry of Welfare Health and Culture.

MEAD, M. and HAYMEN, K. (1965). The Family. London: Macmillan.

NELSON JONES, R (1982). The theory and practice of counselling psychology. London: Holt.

ORION GROUP (1987). The work of the ORION group (video tape). ORION Home Training: PO Box 237, 6000 A.E Weert, Netherlands.

RICHARDS, M.P. (1974). The integration of a child into a social work. Cambridge: Cambridge University Press.

SCOTTISH OFFICE EDUCATION DEPARTMENT, (1992). Using ethos indicators in school self evaluation. In SOED Performance Indicators in Schools. Edinburgh: Scottish Office Education Department.

STERN, D. (1985). The interpersonal world of the child. New York: Basic Books.

TIZARD, B. and HUGHES, m. (1984). Young children learning, talking and thinking at home and at school. London: Fontana.

TOPPING, K.J. (1986). Parents as educators. London: Croom Helm.

TREVARTHEN, C. (1979). Communication and co-operation in early infancy: a description of primary intersubjectivity. In BULLOWA, M (Ed). Before Speech. Cambridge: Cambridge University Press.

TREVARTHEN, C. (1984). Emotions in infancy: Regulators of contact and relationships with persons. In SCHARER, K. and EDMAN, P. (Eds). Approaches to emotion. Hillsdale New Jersey: Erlbaum.

TREVARTHEN, C and MARWICK, H. (1982). Co-operative Understanding in infants. Project report to the Spencer foundation. Edinburgh University: Department of Psychology.

VYGOTSKY, L. (1978). Mind in Society: The development of higher psychological processes. Cambridge, Mass.: Harvard University Press.

WILL, D. and WRATE, R.M. (1985). Integrated Family Therapy: A problem centred psychodynamic approach. London: Tavistock Publications.

WOLFENDALE, S. (1992). Empowering Parents and Teachers, working for Children. London: Cassell.

WOOD, D. and BRUNER, J (1976). The role of tutoring in problem solving. Journal of Child Psychology and Psychiatry, 17, 89-100.

WOOD, D, WOOD, H, GRIFFITHS, A. and HOWARTH, I (1986). Teaching and Talking with Deaf Children. Chichester: Wiley.